

50HC
Single Package Rooftop
Cooling Only
with Puron® (R-410A) Refrigerant
Sizes: 07, 08, 09, 11, 12



Installation Instructions

NOTE: Read the entire instruction manual before starting the installation

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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.

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

Unit Heat Type
50 - Electric Heat
Packaged Rooftop

Model Series - WeatherMaster™
HC - High Efficiency

Heat Options
- - None (Field Installed Accessory)
A = Low Electric Heat
B = Medium Electric Heat
C = High Electric Heat

Refrig. Systems Options
A = Single stage cooling models
B = Single stage cooling models with Humidi-MiZer®
D = Two stage cooling models
E = Two stage cooling models with Humidi-MiZer
F = Single stage cooling models with MotorMaster Low Ambient Controller
G = Two stage cooling models with MotorMaster Low Ambient Controller

Cooling Tons
07 - 6 ton
08 - 7.5 ton
09 - 8.5 ton
11 - 10 ton (12.0 EER)
12 - 10 ton (11.7 EER)

Sensor Options
A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO₂
F = RA Smoke Detector and CO₂
G = SA Smoke Detector and CO₂
H = RA + SA Smoke Detector and CO₂

Indoor Fan Options
1 = Standard Static Option - Belt Drive
2 = Medium Static Option - Belt Drive
3 = High Static Option - Belt Drive

Coil Options (RTPF) (Outdoor - Indoor - 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

Factory Assigned
0 = Standard
1 = LTL

Electrical Options
A = None
B = HACR Breaker
C = Non-Fused Disconnect
D = Thru-The-Base Connections
E = HACR and Thru-The-Base Connections
F = Non-Fused Disconnect and Thru-The-Base Connections
G = 2-Speed Indoor Fan (VFD) Controller
H = 2-Speed Fan Controller (VFD) and HACR
J = 2-Speed Fan Controller (VFD) and Non-Fused Disconnect
K = 2-Speed Fan Controller (VFD) and Thru-The-Base Connections
L = 2-Speed Fan Controller (VFD) with HACR and Thru-The-Base Connections
M = 2-Speed Fan Controller (VFD) with Non-Fused Disconnect and Thru-The-Base Connections

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
C = Foil Faced Insulation
D = Foil Faced Insulation with Unpowered Convenience Outlet
E = Foil Faced Insulation with Powered Convenience Outlet
F = Foil Faced Insulation & Hinged Panels
G = Foil Faced Insulation & Hinged Panels with Unpowered Convenience Outlet
H = Foil Faced Insulation & Hinged Panels with Powered Convenience Outlet

Intake / Exhaust Options
A = None
B = Temperature Economizer w/ Barometric Relief
F = Enthalpy Economizer w/ Barometric Relief
K = 2-Position Damper
U = Low Leak Temperature Economizer w/ Barometric Relief
W = Low Leak Enthalpy Economizer w/ Barometric Relief

Base Unit Controls
0 = Base Electromechanical Controls
1 = PremierLink Controller
2 = RTU Open Multi-Protocol Controller
6 = Electromechanical with 2-Speed Fan and W7220 Economizer Controller
D = ComfortLink Controls

Design Revision
A = Factory Design Revision

50HC

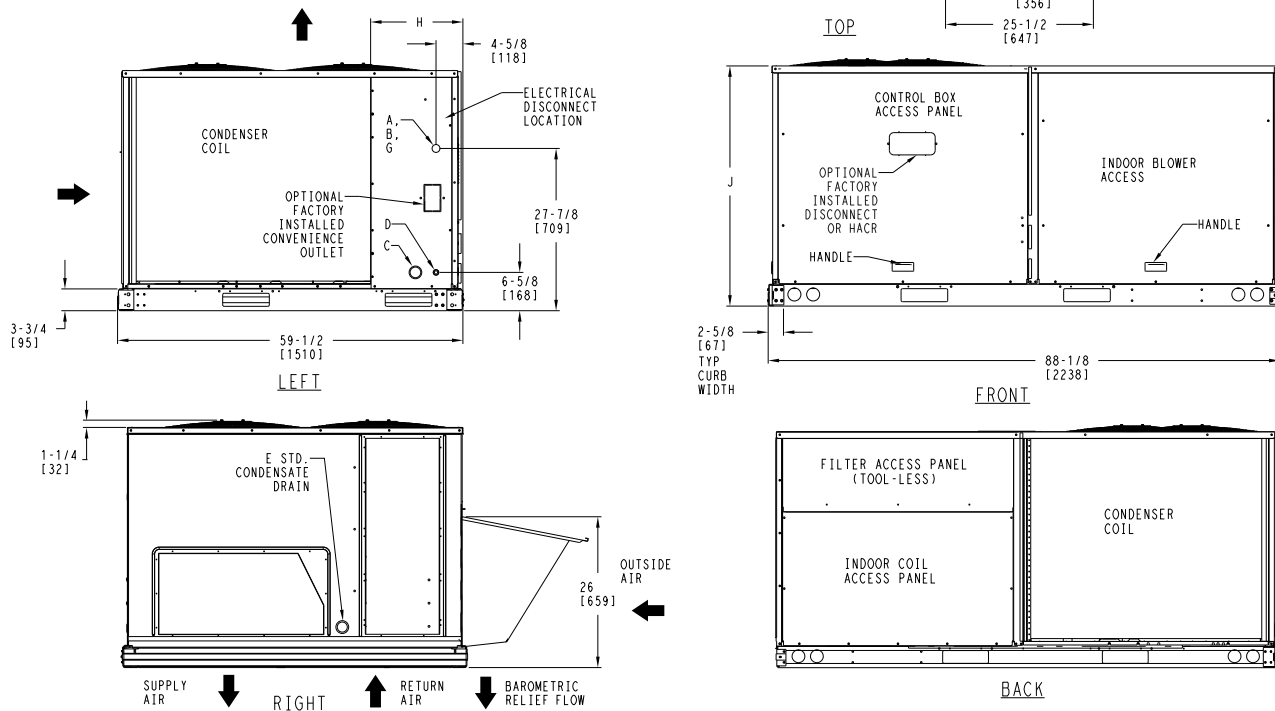
Fig. 1 - 50HC 07-12 Model Number Nomenclature (Example)

C12306

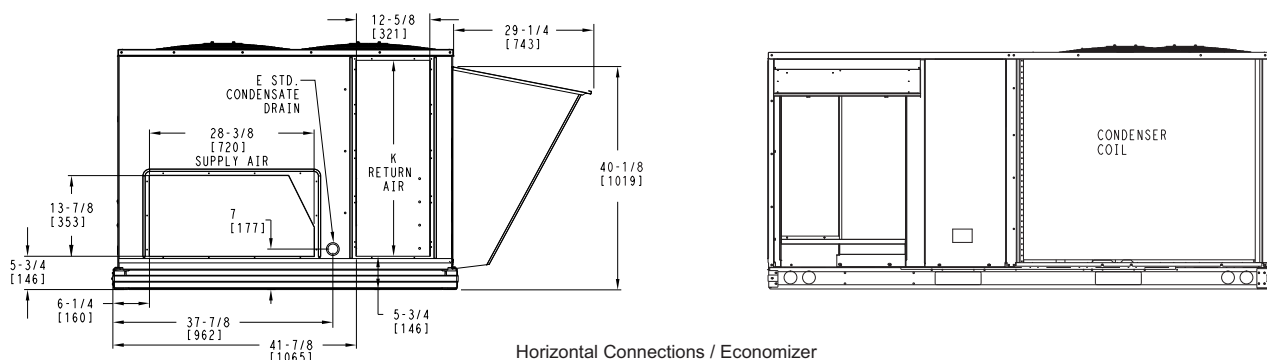
NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN () ARE IN MILLIMETERS.
2.  CENTER OF GRAVITY
3.  DIRECTION OF AIR FLOW

UNIT	J	K	H
50HC-A07	41 1/4 [1048]	33 3/4 [857]	15 7/8 [403]
50HC-D08	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]
50HC-D09	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]



Vertical Connections / Economizer



Horizontal Connections / Economizer

CONNECTION SIZES		
A	1 3/8" [35] DIA	FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA	POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA	GAUGE ACCESS PLUG
D	7/8" [22] DIA	FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT	CONDENSATE DRAIN
G	2" [51] DIA	POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART (FIELD INST)			
THESE HOLES REQUIRED FOR USE WITH ACCY KITS: CRBTMPWR001A01: 07 CRBTMPWR002A01: 08, 09			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	3/4" (.001) 1 1/4" (.002)	POWER	1 1/8" [28.6] 1 3/4" [44.4]

THRU-THE-BASE CHART (FIOP)	
FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED: (1) 1/2" & (1) 1 1/4" ELECTRICAL FITTINGS.	

Fig. 2 - Unit Dimensional Drawing — Sizes 07-09

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
50HC-A07	715	324.3	161.3	73.2	142.4	64.6	192.9	87.5	218.5	99.1	41 3/8 [1051]	34 1/4 [870]	20 1/2 [521]
50HC-D08	860	390	199.4	90.4	176.4	80	227.3	103	256.9	116.5	41 3/8 [1051]	33 1/2 [851]	23 3/4 [603]
50HC-D09	860	390	199.4	90.4	176.4	80	227.3	103	256.9	116.5	41 3/8 [1051]	33 1/2 [851]	23 3/4 [603]

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

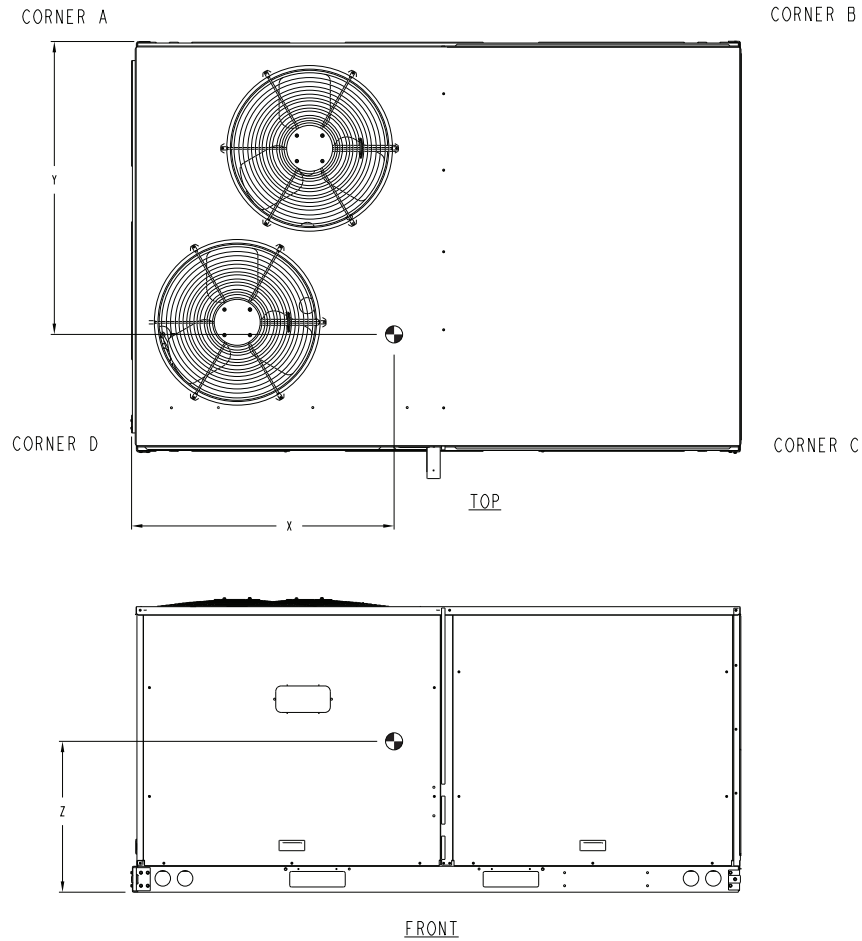


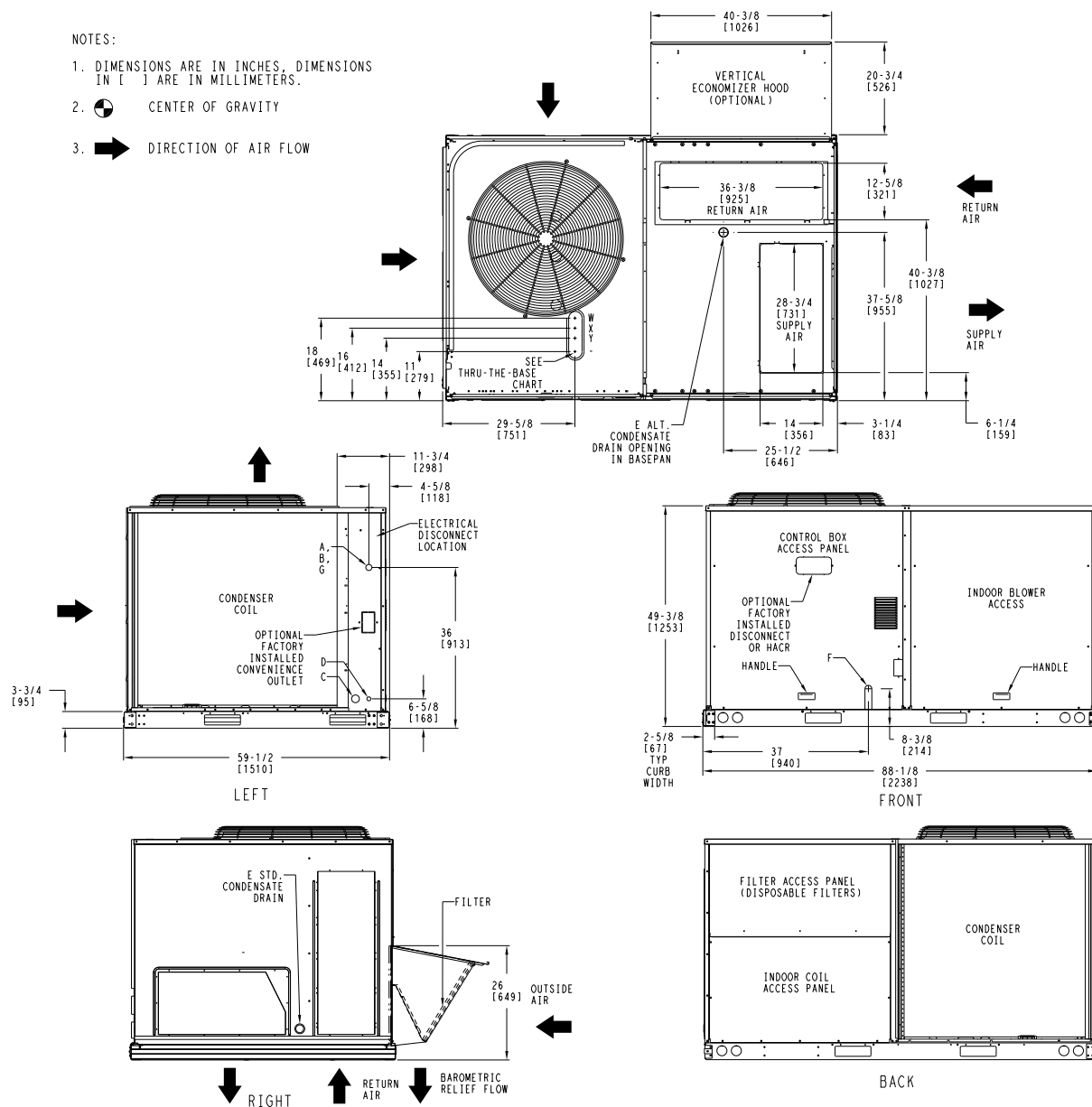
Fig. 2 - Unit Dimensional Drawing — Sizes 07-09 (cont.)

C11075

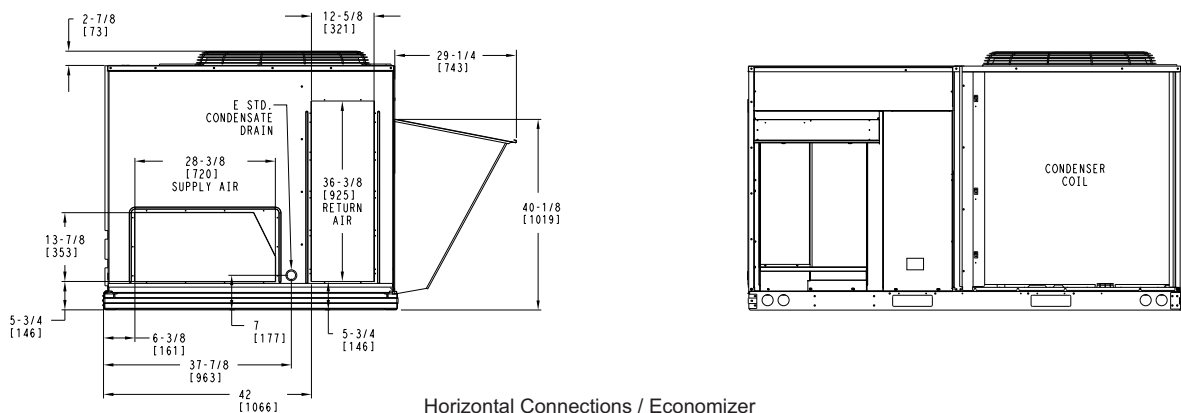
50HC

NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS.
2.  CENTER OF GRAVITY
3.  DIRECTION OF AIR FLOW



Vertical Connections / Economizer



Horizontal Connections / Economizer

CONNECTION SIZES	
A	1 3/8" [35] DIA. FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA. POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA. GAUGE ACCESS PLUG
D	7/8" [22] DIA. FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2" [51] DIA. POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART THESE HOLES REQUIRED FOR USE CRBTMPR002A01			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	1 1/4" (002)	POWER	1 3/4" [44.4]
FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED			

Fig. 3 - Unit Dimensional Drawing — Sizes 11 and 12

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
50HC-D12	1025	466	308	140	146	66	184	84	387	176	28 3/8 [721]	33 1/8 [841]	21 3/8 [543]
50HC-D11	1025	466	308	140	146	66	184	84	387	176	28 3/8 [721]	33 1/8 [841]	21 3/8 [543]

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

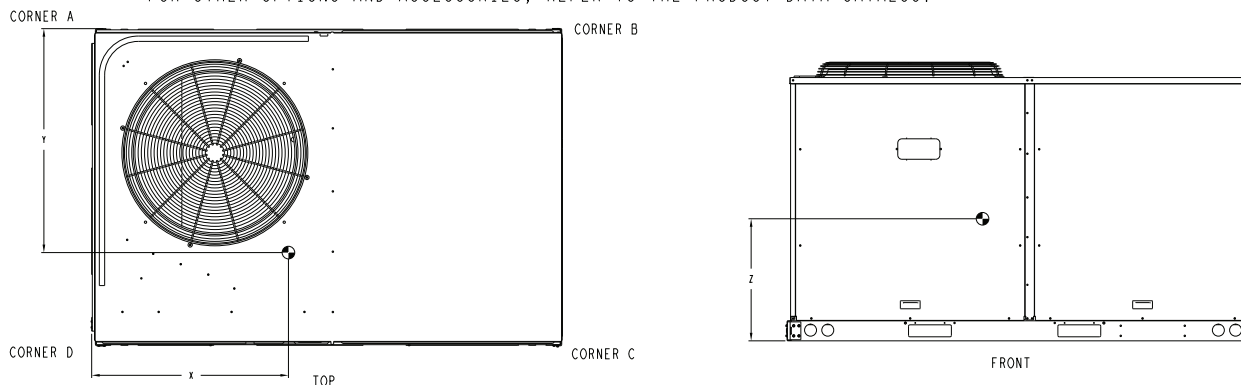
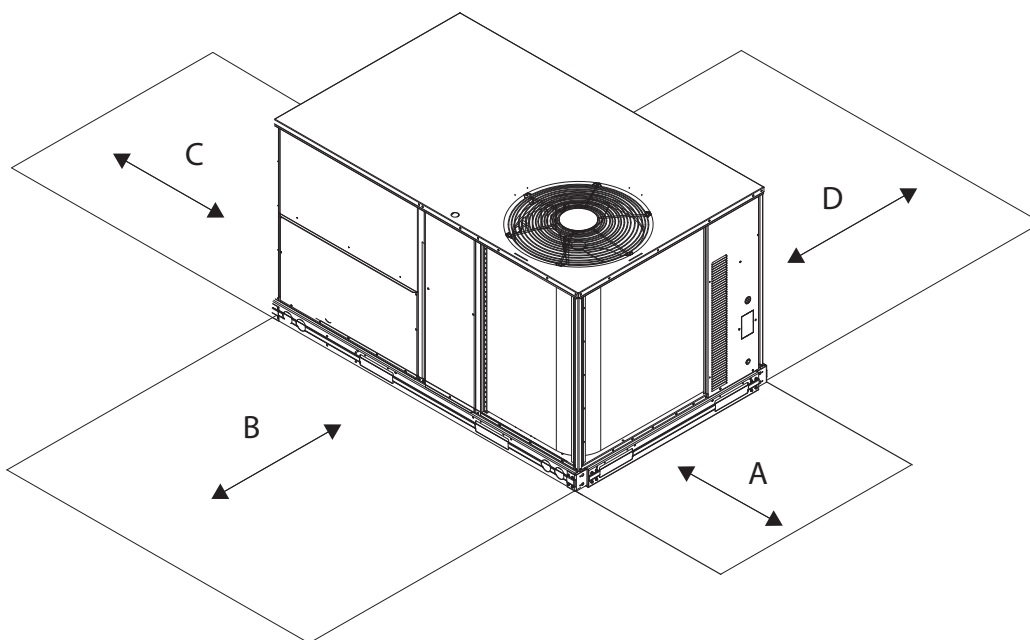


Fig. 3 - Unit Dimensional Drawing — Sizes 11 and 12 (cont.)

C13067

50HC



C08337

LOCATION	DIMENSION	CONDITION
A	48-in (1219 mm) 18-in (457 mm) 18-in (457 mm) 12-in (305 mm)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	42-in (1067 mm) 36-in (914 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)
C	36-in (914 mm) 18-in (457 mm)	Side condensate drain is used Minimum clearance
D	42-in (1067 mm) 36-in (914 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

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

Fig. 4 - Service Clearance Dimensional Drawing — Sizes 07-12

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. 4.

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 9 — 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.

Table 1 – Operating Weights

50HC – *	UNITS LB (KG)			
	07	08	09	11/12
Base Unit	715 (324)	860 (390)	860 (390)	1025 (466)
Economizer				
Vertical	75 (34)	75 (34)	75 (34)	75 (34)
Horizontal	122 (55)	122 (55)	122 (55)	122 (55)
Powered Outlet	35 (16)	35 (16)	35 (16)	35 (16)
Humidi – MiZer® System ¹	80 (36)	80 (36)	80 (36)	85 (39)
Curb				
14-in/356 mm	143 (65)	143 (65)	143 (65)	143 (65)
24-in/610 mm	245 (111)	245 (111)	245 (111)	245 (111)

¹ Not available for size 11 units.

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 accessory thru-base service connection package (affects curb and unit) (refer to accessory installation instructions for details)
- Prepare bottom condensate drain connection to suit planned condensate line routing (refer to Step 9 for details)
- Rig and place unit
- Install outdoor air hood
- Install condensate line trap and piping
- Make electrical connections
- Install other accessories

Pad-mounted Installation —

- Prepare pad and unit supports
- Check and tighten the bottom condensate drain connection plug
- Rig and place unit
- Convert unit to side duct connection arrangement
- Install field-fabricated ductwork at unit duct openings
- Install outdoor 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 snug and in closed position.

Locate the carton containing the outside air hood parts; see Fig. 10. Do not remove carton until unit has been rigged and located in final position.

Step 4 — Provide Unit Support

Roof Curb Mount —

Accessory roof curb details and dimensions are shown in Fig. 5. 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 Fig. 5. 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 shown in Fig. 6. Refer to Accessory Roof Curb Installation Instructions for additional information as required.

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

If electric and control wiring is to be routed through the basepan, attach the accessory thru-the-base service connections to the basepan in accordance with the accessory installation instructions.

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 3 equally spaced 4-in. x 4-in. (102 mm x 102 mm) pads on each side.

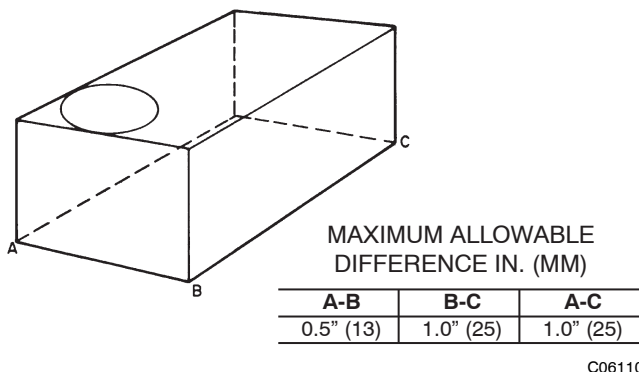


Fig. 6 - Unit Leveling Tolerances

Step 5 — Field Fabricate Ductwork

Cabinet return-air static pressure (a negative condition) shall not exceed 0.35 in. wg (87 Pa) with economizer or 0.45 in. wg (112 Pa) without economizer.

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 Accessory or Optional Electric Heaters —

Horizontal applications require a minimum clearance to combustible surfaces of 1-in (25 mm) from duct for first 12-in (305 mm) away from unit. Vertical applications do not require a minimum clearance.

Minimum clearance is not required around ductwork.

Outlet grilles must not lie directly below unit discharge.

NOTE: A 90-degree elbow must be provided in the ductwork to comply with UL (Underwriters Laboratories) code for use with electric heat.

⚠ 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 and Fig. 7 for additional information.

Lifting holes are provided in base rails as shown in Fig. 7. Refer to rigging instructions on unit.

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

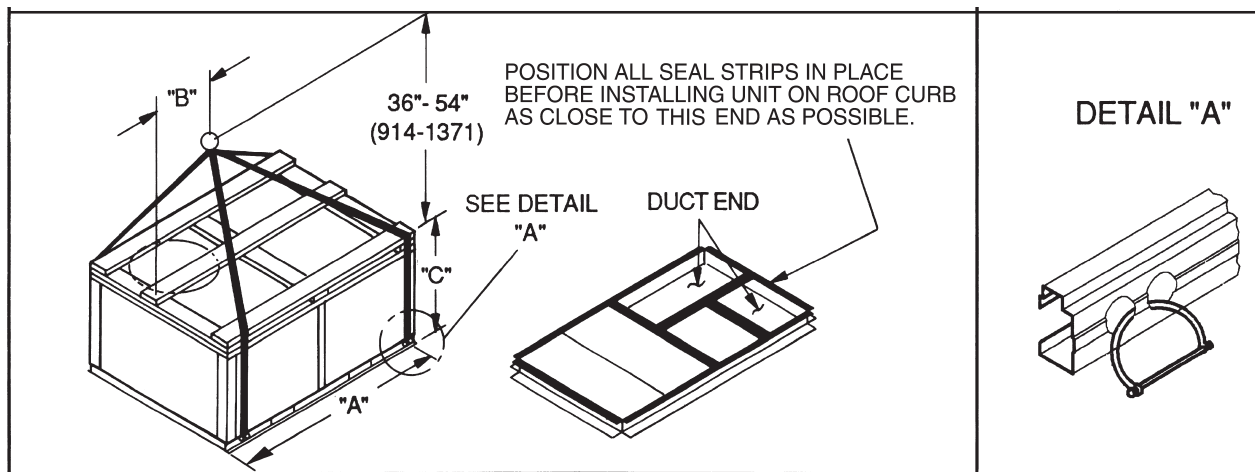
⚠ CAUTION

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 panels or packaging are removed.

If using top crate as spreader bar, once unit is set, carefully lower wooden crate off building roof top to ground. Ensure that no people or obstructions are below prior to lowering the crate.



C06005

UNIT	MAX WEIGHT		DIMENSIONS					
			A		B		C	
	LB	KG	IN	MM	IN	MM	IN	MM
50HC – (A,B)07	1130	514	88.0	2235	43.0	1090	41.5	1055
50HC – (D,E)08	1340	609	88.0	2235	43.0	1090	49.5	1255
50HC – (D,E)09	1340	609	88.0	2235	43.0	1090	49.5	1255
50HC – (D,E)11/12	1580	718	88.0	2235	31.5	775	49.5	1255

NOTES:

1. SPREADER BARS REQUIRED — Top damage will occur if spreader bars are not used.
2. Dimensions in () are in millimeters.
3. 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. 7 - Rigging Details**Positioning on Curb —**

Position unit on roof curb so that the following clearances are maintained: $\frac{1}{4}$ in. (6.4 mm) clearance between the roof curb and the base rail inside the front and back, 0.0 in. clearance between the roof curb and the base rail inside on the duct end of the unit. This will result in the distance between the roof curb and the base rail inside on the condenser end of the unit being approximately 3-5/16 in (84 mm).

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

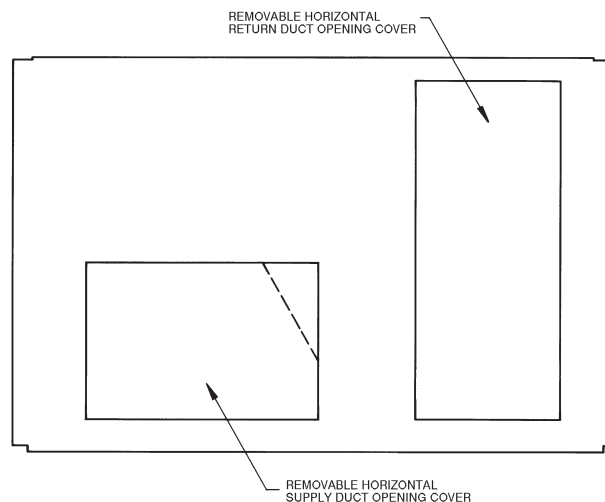
⚠ CAUTION

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 panels or packaging are removed.

configuration. To convert to horizontal configuration, remove screws from side duct opening covers and remove covers. Using the same screws, install covers on vertical duct openings with the insulation-side down. Seals around duct openings must be tight. See Fig. 8.



C06108

Fig. 8 - Horizontal Conversion Panels

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

Step 7 — Convert to Horizontal & Connect Ductwork (when required)

Unit is shipped in the vertical duct configuration. Unit *without* factory-installed economizer or return air smoke detector option may be field-converted to horizontal ducted

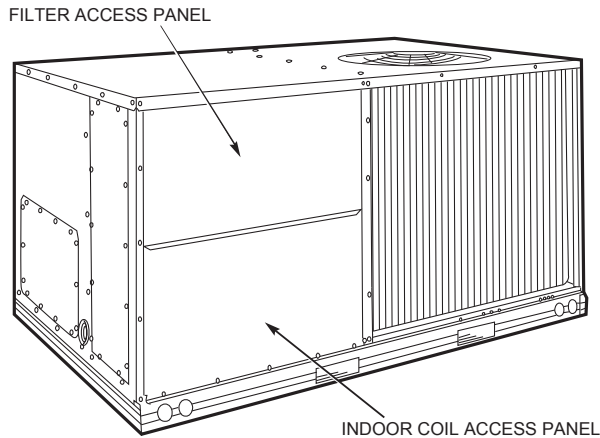
Field-supplied flanges should be attached to horizontal duct openings and all ductwork should be secured to the flanges. Insulate and weatherproof all external ductwork, joints, and roof or building openings with counter flashing and mastic in accordance with applicable codes.

Do not cover or obscure visibility to the unit's informative data plate when insulating horizontal ductwork.

Step 8 — Install Outside Air Hood

Economizer and Two Position Damper Hood Package Removal and Setup - Factory Option

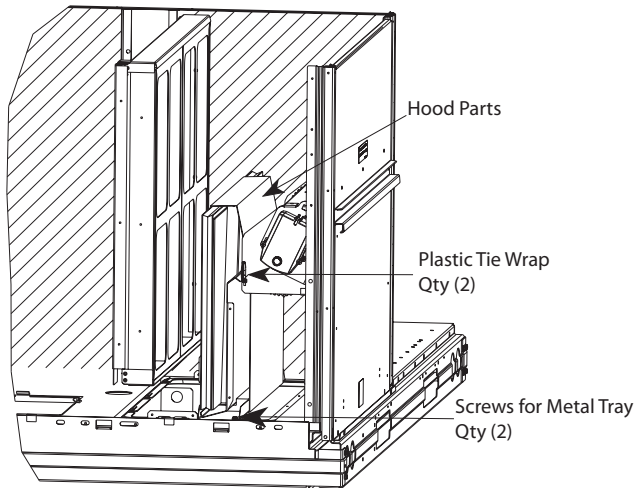
1. The hood is shipped in knock-down form and must be field assembled. The indoor coil access panel is used as the hood top while the hood sides, divider and filter are packaged together, attached to a metal support tray using plastic stretch wrap, and shipped in the return air compartment behind the indoor coil access panel. The hood assembly's metal tray is attached to the basepan and also attached to the damper using two plastic tie-wraps.
2. To gain access to the hood, remove the filter access panel. (See Fig. 9.)



C10146

Fig. 9 - Typical Access Panel Locations

3. Locate the (2) screws holding the metal tray to the basepan and remove. Locate and cut the (2) plastic tie-wraps securing the assembly to the damper. (See Fig. 10) Be careful to not damage any wiring or cut tie-wraps securing any wiring.



C08639

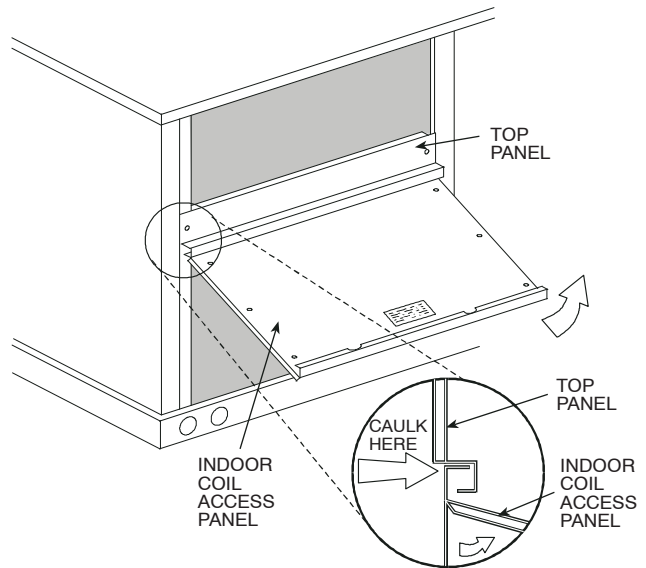
Fig. 10 - Economizer and Two-Position Damper Hood Parts Location

4. Carefully lift the hood assembly (with metal tray) through the filter access opening and assemble per the steps outlined in *Economizer Hood and Two-Position Hood*, below.

Economizer Hood and Two-Position Hood —

NOTE: If the power exhaust accessory is to be installed on the unit, the hood shipped with the unit will not be used and must be discarded. Save the aluminum filter for use in the power exhaust hood assembly.

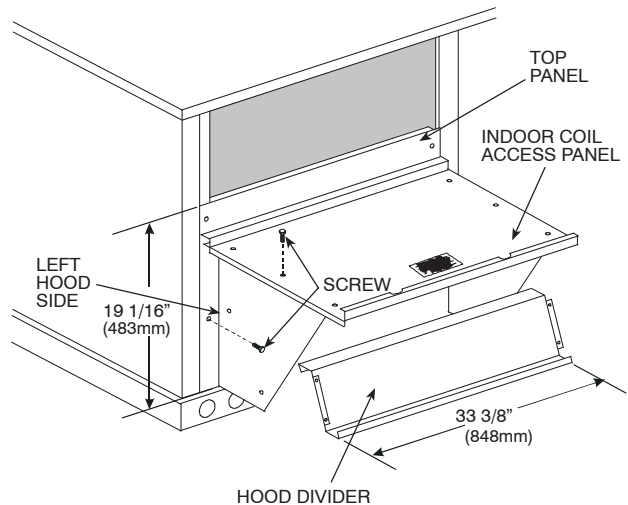
1. The indoor coil access panel will be used as the top of the hood. Remove the screws along the sides and bottom of the indoor coil access panel. See Fig. 11.



C06025

Fig. 11 - Indoor Coil Access Panel Relocation

2. Swing out indoor coil access panel and insert the hood sides under the panel (hood top). Use the screws provided to attach the hood sides to the hood top. Use screws provided to attach the hood sides to the unit. See Fig. 12.



C06026

Fig. 12 - Economizer Hood Construction

3. Remove the shipping tape holding the economizer barometric relief damper in place (economizer only).
4. Insert the hood divider between the hood sides. See Fig. 12 and 13. Secure hood divider with 2 screws on each hood side. The hood divider is also used as the bottom filter rack for the aluminum filter.

5. Open the filter clips which are located underneath the hood top. Insert the aluminum filter into the bottom filter rack (hood divider). Push the filter into position past the open filter clips. Close the filter clips to lock the filter into place. See Fig. 13.
6. Caulk the ends of the joint between the unit top panel and the hood top.
7. Replace the filter access panel.

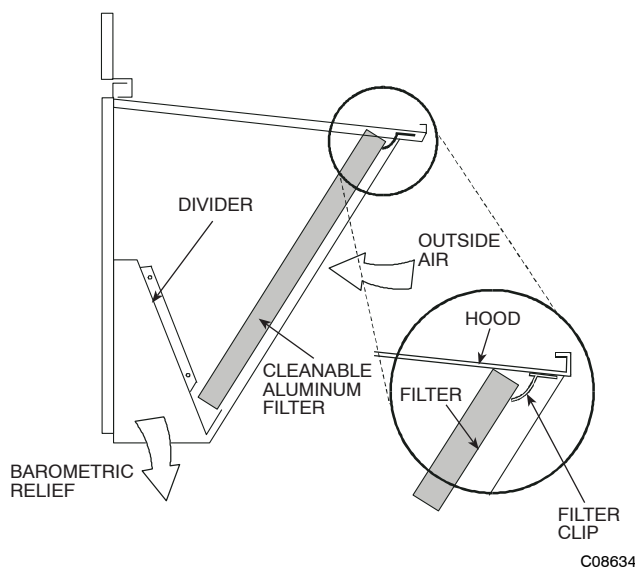


Fig. 13 - Economizer Filter Installation

C08634

Step 9 — Install External Condensate Trap and Line

The unit has one $\frac{3}{4}$ -in. condensate drain connection on the end of the condensate pan and an alternate connection on the bottom. See Fig. 14. Unit airflow configuration does not determine which drain connection to use. Either drain connection can be used with vertical or horizontal applications.

When using the standard side drain connection, ensure the red plug in the alternate bottom connection is tight. Do this before setting the unit in place. The red drain pan can be tightened with a $\frac{1}{2}$ -in. square socket drive extension.

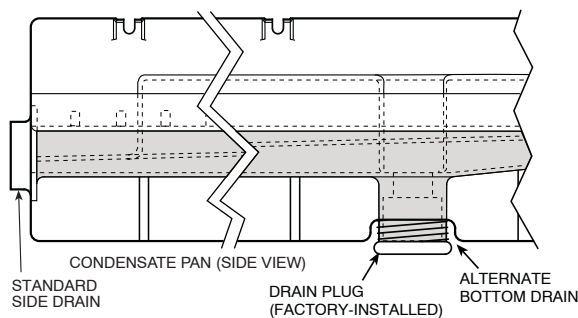


Fig. 14 - Condensate Drain Pan (Side View)

C08021

To use the alternate bottom drain connection, remove the red drain plug from the bottom connection (use a $\frac{1}{2}$ -in. square socket drive extension) and install it in the side drain connection.

The piping for the condensate drain and external trap can be completed after the unit is in place. See Fig. 15.

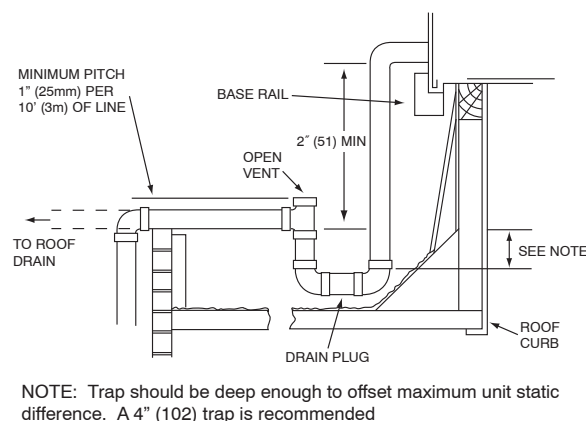


Fig. 15 - Condensate Drain Piping Details

C08022

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 ($\frac{3}{4}$ -in.).

Step 10 — 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, connect the source leads to compressor contactor C and indoor fan contactor IFC pressure lugs with unit field power leads.

Field power wires will be connected line-side pressure lugs on the power terminal block or at factory-installed option non-fused disconnect or HACR.

Field power wires are connected to the unit at line-side pressure lugs on compressor contactor C and indoor fan contactor IFC (see wiring diagram label for control box component arrangement), or at factory-installed option non-fused disconnect switch or HACR or electric heat single point box. Max wire size is #4ga AWG (copper only) per pole on contactors, #4ga AWG (copper only) or 1/0 AWG (copper only) per pole on optional disconnect (max wire size depends on the disconnect size supplied with unit), 1/0 AWG (copper only) on optional HACR and 4/0 AWG (copper only) per pole on terminal or fuse block on units with single point box. See Fig. 17 and unit label diagram for field power wiring connections.

NOTE: TEST LEADS - Unit may be equipped with short leads (pigtails) on the field line connection points on contactor C or optional disconnect switch or HACR. These leads are for factory run-test purposes only; remove and discard before connecting field power wires to unit connection points. Make field power connections directly to line connection pressure lugs only.

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

The factory-installed optional non-fused disconnect (NFD) switch or HACR is located in a weatherproof enclosure located under the main control box. The manual switch handle and shaft are shipped in the disconnect or HACR enclosure. Assemble the shaft and handle to the switch at this point. Discard the factory test leads (see Fig. 17).

Connect field power supply conductors to LINE side terminals when the switch enclosure cover is removed to attach the handle.

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. 16.)

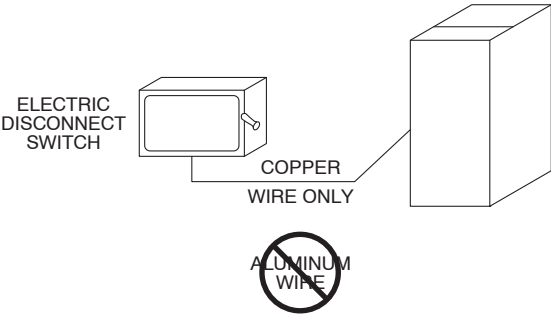
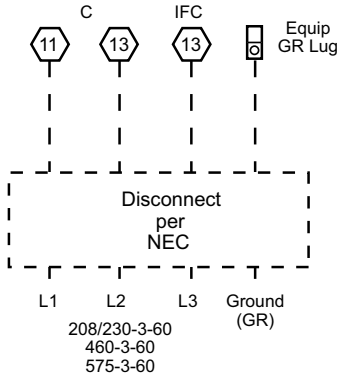


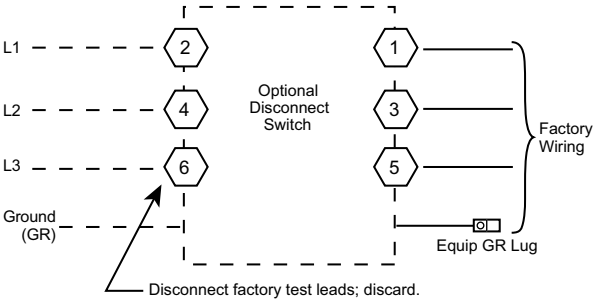
Fig. 16 - Disconnect Switch and Unit

A93033

Units Without Single Point Box, Disconnect or HACR Option



Units With Disconnect or HACR Option



Units With Electric Heat Option with Single Point Box and Without Disconnect or HACR Option

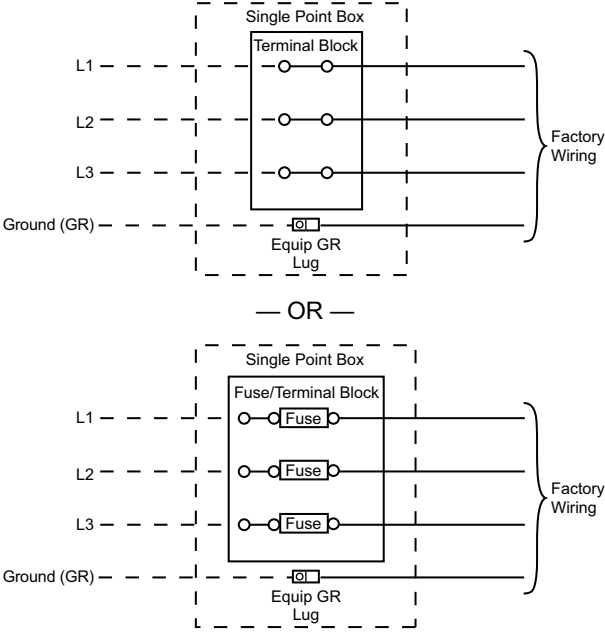
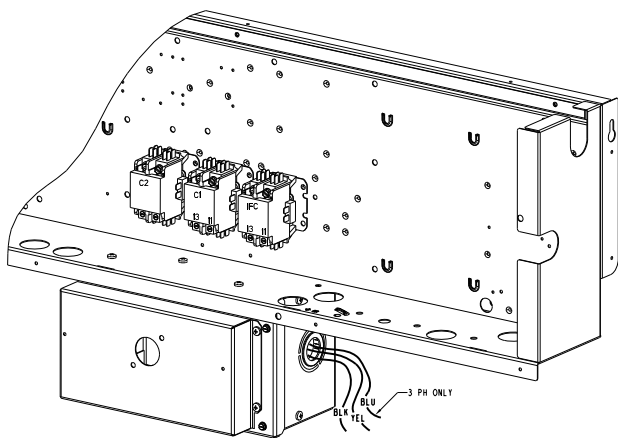


Fig. 17 - Power Wiring Connections

C12310

50HC

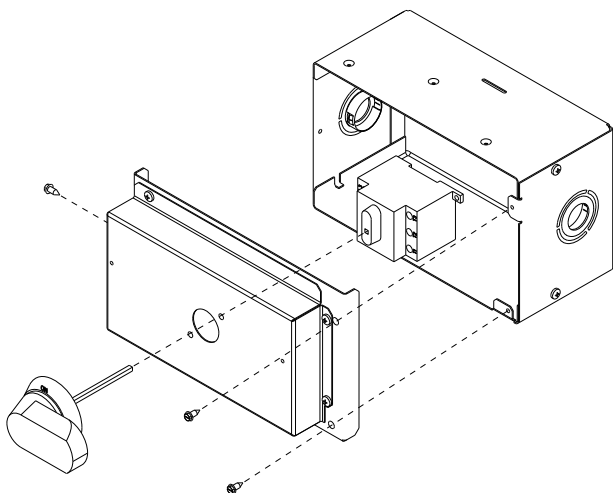


C12284

Fig. 18 - Location of Non-Fused Disconnect Enclosure

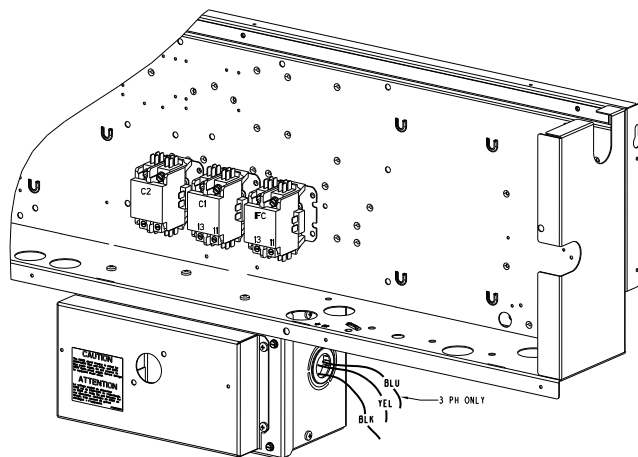
To field install the NFD shaft and handle:

1. Remove the unit front panel (see Fig. 2 or Fig. 3).
2. Remove (3) hex screws on the NFD enclosure - (2) on the face of the cover and (1) on the left side cover.
3. Remove the front cover of the NFD enclosure.
4. Make sure the NFD shipped from the factory is at OFF position (the arrow on the black handle knob is at OFF).
5. Insert the shaft with the cross pin on the top of the shaft in the horizontal position.
6. Measure from the tip of the shaft to the top surface of the black pointer; the measurement should be 3.75 - 3.88 in. (95 - 99 mm).
7. Tighten the locking screw to secure the shaft to the NFD.
8. Turn the handle to the OFF position with red arrow pointing at OFF.
9. Install the handle on to the painted cover horizontally with the red arrow pointing to the left.
10. Secure the handle to the painted cover with (2) screws and lock washers supplied.
11. Engaging the shaft into the handle socket, re-install (3) hex screws on the NFD enclosure.
12. Re-install the unit front panel.



C12279

Fig. 19 - Handle and Shaft Assembly for NFD

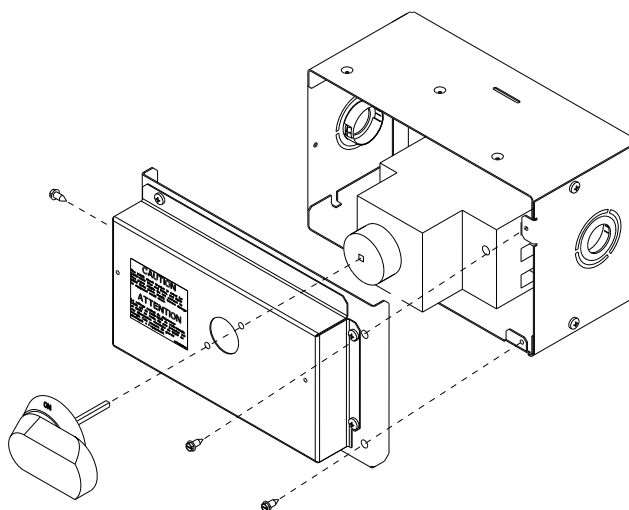


C12285

Fig. 20 - Location of HACR Enclosure

To field install the HACR shaft and handle:

1. Remove the unit front panel (see Fig. 2 or Fig. 3).
2. Remove (3) hex screws on the HACR enclosure - (2) on the face of the cover and (1) on the left side cover.
3. Remove the front cover of the HACR enclosure.
4. Make sure the HACR shipped from the factory is at OFF position (the white arrow pointing at OFF).
5. Insert the shaft all the way with the cross pin on the top of the shaft in the horizontal position.
6. Tighten the locking screw to secure the shaft to the HACR.
7. Turn the handle to the OFF position with red arrow pointing at OFF.
8. Install the handle on to the painted cover horizontally with the red arrow pointing to the left.
9. Secure the handle to the painted cover with (2) screws and lock washers supplied.
10. Engaging the shaft into the handle socket, re-install (3) hex screws on the HACR enclosure.
11. Re-install the unit front panel.



C12281

Fig. 21 - Handle and Shaft Assembly for HACR

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.

All Units -

All field wiring must comply with NEC and all local codes. Size wire based on MCA (Minimum Circuit Amps) on the unit informative plate. See Fig. 17 and unit label diagram for power wiring connections to the unit power terminal block and equipment ground. Maximum wire size is #4ga AWG (copper only) per pole on contactors, #4ga AWG (copper only) or 1/0 AWG (copper only) per pole on optional disconnect (max wire size depends on the disconnect size supplied with unit), 1/0 AWG (copper only) on optional HACR and 4/0 AWG (copper only) per pole on terminal or fuse block on units with single point box. See Fig. 17 and unit label diagram for field power wiring connections.

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 MOC (Maximum Over-current Protection) device size. All field wiring must comply with NEC and local requirements.

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

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.

Voltage to compressor terminals during operation must be within voltage range indicated on unit nameplate. See Tables 10 - 13. 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 10, 11 and 13, Note 2 (see page 48) to determine the percent of voltage imbalance. 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.

NOTE: Check all factory and field electrical connections for tightness.

Convenience Outlets —

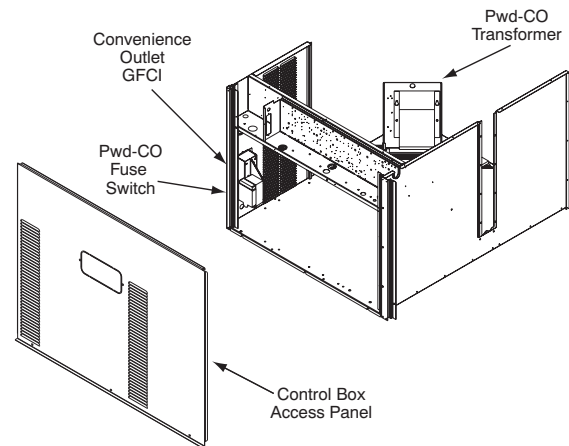
⚠ WARNING

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 50HC models: Non-powered and unit-powered. Both types provide a 125-volt GFCI (ground-fault circuit-interrupter) duplex receptacle rated at 15-A behind a hinged waterproof access cover, located on the end panel of the unit. See Fig. 22.



C08128

Fig. 22 - 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 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).

50HC

Mount the weatherproof cover to the backing plate as shown in Fig. 23. 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.

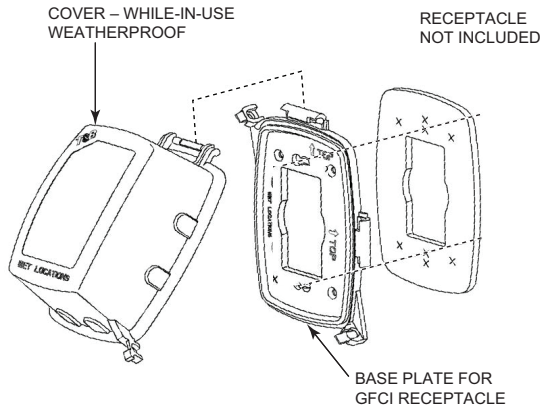
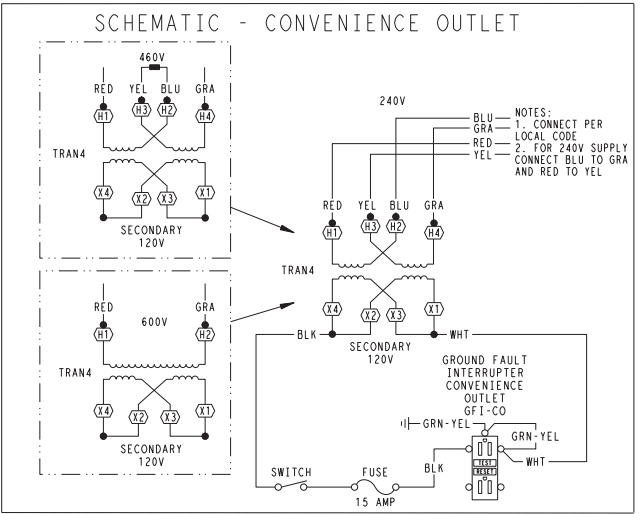


Fig. 23 - Weatherproof Cover Installation

Non-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. 22.

The primary leads to the convenience outlet transformer are not factory-connected. Selection of primary power source is a customer-option. If local codes permit, the transformer primary leads can be connected at the line-side terminals on the unit-mounted non-fused disconnect or HACR breaker switch; this will provide service power to the unit when the unit disconnect switch or HACR switch is open. Other connection methods will result in the convenience outlet circuit being de-energized when the unit disconnect or HACR switch is open. See Fig. 24.



C082B3

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 L2: Splice BLU + YEL L3: GRA	H1 H2 + H3 H4
575	600	L1: RED L2: GRA	H1 H2

Fig. 24 - Powered Convenience Outlet Wiring

Duty Cycle: the unit-powered convenience outlet has a duty cycle limitation. The transformer is intended to provide power on an intermittent basis for service tools, lamps, etc; it is not intended to provide 15-amper loading for continuous duty loads (such as electric heaters for overnight use). Observe a 50% limit on circuit loading above 8-amper (i.e., limit loads exceeding 8-amper to 30 minutes of operation every hour).

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.

Fuse on power type: The factory fuse is a Bussman “Fusetron” T-15, non-renewable screw-in (Edison base) type plug fuse.

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, ERV), 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.

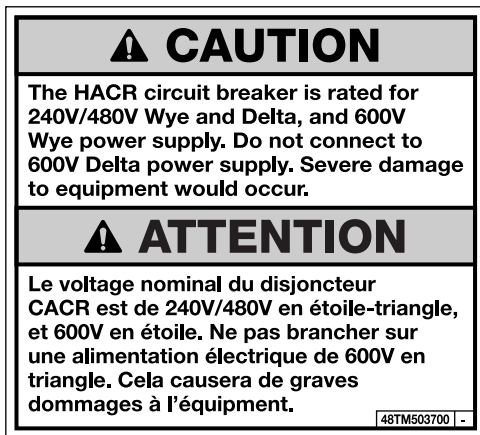
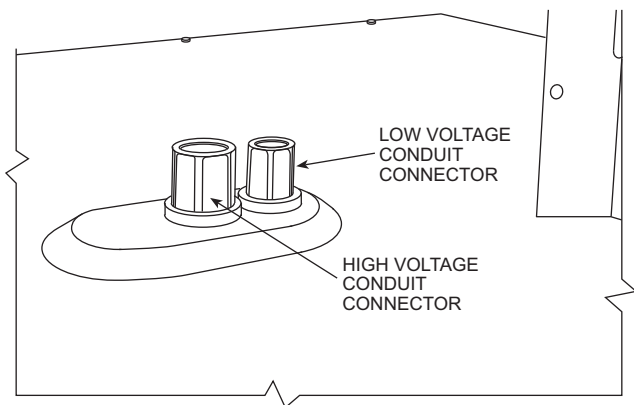


Fig. 25 - HACR Caution Label

C12105

Factory-Option Thru-Base Connections —

This service connection kit consists of a $\frac{1}{2}$ -in electrical bulkhead connector and a $1\frac{1}{4}$ -in electrical bulkhead connector, all factory-installed in the embossed (raised) section of the unit basepan in the condenser section. The $\frac{1}{2}$ -in bulkhead connector enables the low-voltage control wires to pass through the basepan. The $1\frac{1}{4}$ -in electrical bulkhead connector allows the high-voltage power wires to pass through the basepan. See Fig. 26.



C08637

Fig. 26 - Thru-Base Connection Fittings

Check tightness of connector lock nuts before connecting electrical conduits.

Field-supplied and field-installed liquidtight conduit connectors and conduit may be attached to the connectors on the basepan. Pull correctly rated high voltage and low voltage through appropriate conduits. Connect the power conduit to the internal disconnect (if unit is so equipped) or to the external disconnect (through unit side panel). A hole must be field cut in the main control box bottom on the left side so the 24-v control connections can be made. Connect the control power conduit to the unit control box at this hole.

Units without Thru-Base Connections —

1. Install power wiring conduit through side panel openings. Install conduit between disconnect and control box.
2. Install power lines to terminal connections as shown in Fig. 17.

Field Control Wiring —

The 50HC unit requires an external temperature control device. This device can be a thermostat (field-supplied) or a PremierLink controller (available as factory-installed option or as field-installed accessory, for use on a Carrier Comfort Network or as a stand alone control) or the RTU Open Controller for Building Management Systems using non-CCN protocols (RTU Open is available as a factory-installed option only).

Thermostat —

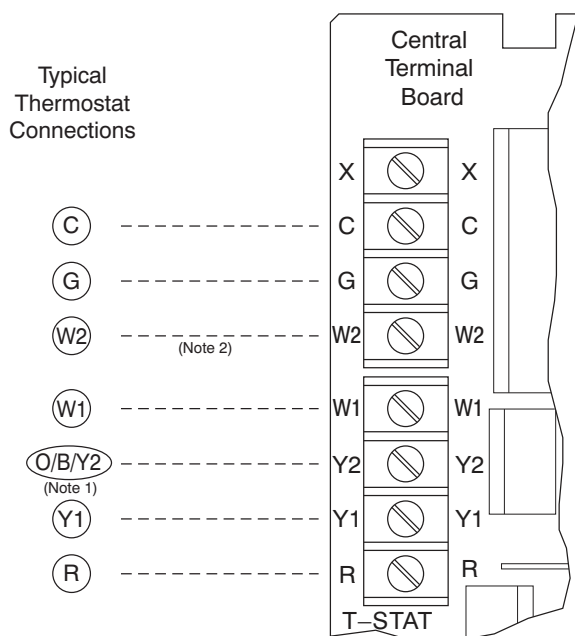
Select a Carrier-approved accessory thermostat. When electric heat is installed in the 50HC unit, the thermostat must be capable of energizing the G terminal (to energize the Indoor Fan Contactor) whenever there is a space call for heat (energizing the W1 terminal). The accessory thermostats listed on the unit price pages can provide this signal but they are not configured to enable this signal as shipped.

Install the accessory thermostat according to installation instructions included with the accessory.

Locate the thermostat accessory on a solid wall in the conditioned space to sense average temperature in accordance with the thermostat installation instructions.

If the thermostat contains a logic circuit requiring 24-v power, use a thermostat cable or equivalent single leads of different colors with minimum of seven leads. If the thermostat does not require a 24-v source (no "C" connection required), use a thermostat cable or equivalent with minimum of six leads. Check the thermostat installation instructions for additional features which might require additional conductors in the cable.

For wire runs up to 50 ft. (15 m), use no. 18 AWG (American Wire Gage) insulated wire (35°C minimum). For 50 to 75 ft. (15 to 23 m), use no. 16 AWG insulated wire (35°C minimum). For over 75 ft. (23 m), use no. 14 AWG insulated wire (35°C minimum). All wire sizes larger than no. 18 AWG cannot be directly connected to the thermostat and will require a junction box and splice at the thermostat.



Note 1: Typical multi-function marking. Follow manufacturer's configuration instructions to select Y2.

Note 2: W2 connection not required on units with single-stage heating.

--- Field Wiring

C09351

Fig. 27 - Typical Low-Voltage Control Connections

Unit without Thru-Base Connection Kit —

Pass the thermostat control wires through the hole provided in the end panel (see item "D" in the view labeled "LEFT" in Fig. 2 and Fig. 3; then feed the wires through the raceway built into the corner post to the control box. Pull the wires over to the terminal strip on the upper-left corner of the Central Terminal Board. (CTB) See Fig. 28.

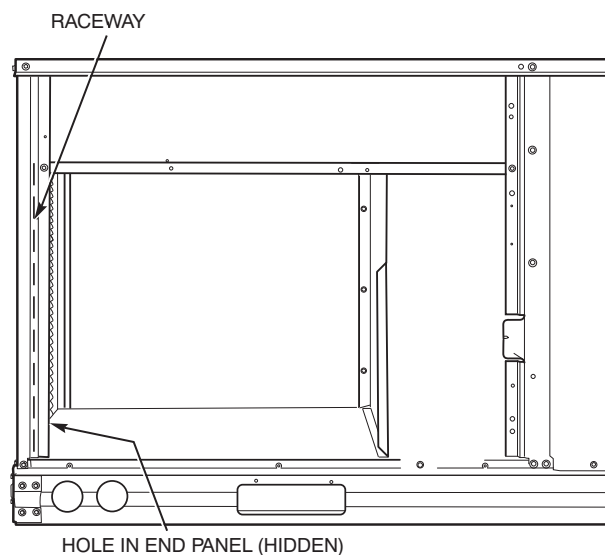
NOTE: If thru-the-bottom connections accessory is used, refer to the accessory installation instructions for information on routing power and control wiring.

Heat Anticipator Settings —

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

Electric Heaters

50HC units may be equipped with factory or field-installed electric heaters. The heaters are modular in design, with heater frames holding open coil resistance wires strung through ceramic insulators, line-break limit switches and a control contactor. One or two heater modules may be used in a unit.



C08027

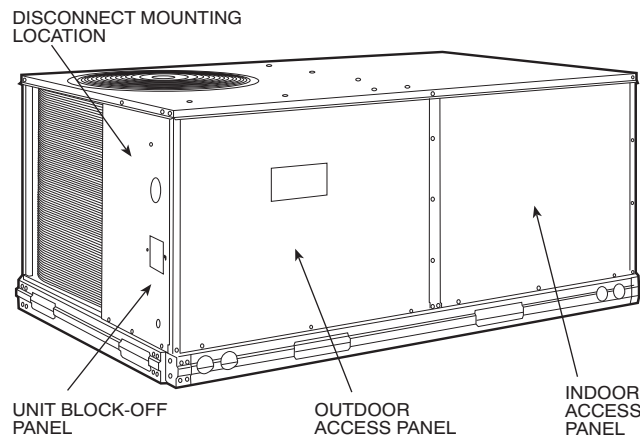
Fig. 28 - Field Control Wiring Raceway

Heater modules are installed in the compartment below the indoor (supply) fan outlet. Access is through the indoor access panel. Heater modules slide into the compartment on tracks along the bottom of the heater opening. See Fig. 29, Fig. 30 and Fig. 31.

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

Unit heaters are marked with Heater Model Numbers. But heaters are ordered as and shipped in cartons marked with a corresponding heater Sales Package part number. See Table 2 for correlation between heater Model Number and Sales Package part number.

NOTE: The value in position 9 of the part number differs between the sales package part number (value is 1) and a bare heater model number (value is 0).

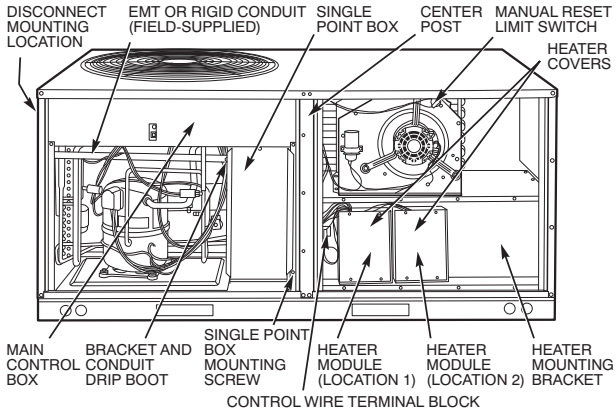


C08133

Fig. 29 - Typical Access Panel Location

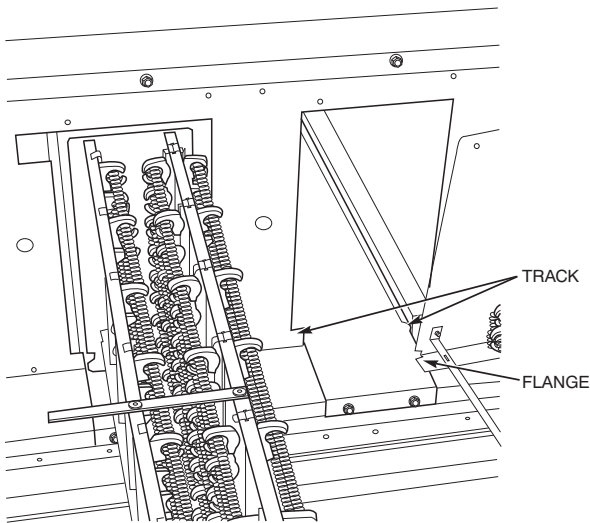
Table 2 – Heater Model Number

Bare Heater Model Number	C	R	H	E	A	T	E	R	0	0	1	A	0	0
Heater Sales Package PNO Includes: Bare Heater Carton and packing materials Installation sheet	C	R	H	E	A	T	E	R	1	0	1	A	0	0



C08134

Fig. 30 - Typical Component Location



C08135

Fig. 31 - Typical Module Installation

Single Point Boxes and Supplementary Fuses —

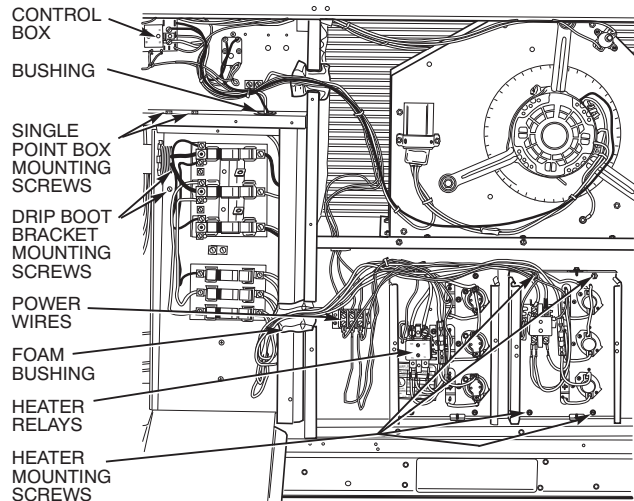
When the unit MOCB device value exceeds 60-A, unit-mounted supplementary fuses are required for each heater circuit. These fuses are included in accessory Single Point Boxes, with power distribution and fuse blocks. The single point box will be installed directly under the unit control box, just to the left of the partition separating the indoor section (with electric heaters) from the outdoor section. The Single Point Box has a hinged access cover. See Fig. 32. The Single Point Box also includes a set of power taps and pigtailed to complete the wiring between the Single Point Box and the unit's main

control box terminals. Refer to the accessory heater and Single Point Box installation instructions for details on tap connections on field installed electric heat accessory.

All fuses on 50HC units are 60-A. (Note that all heaters are qualified for use with a 60-A fuse, regardless of actual heater ampacity, so only 60-A fuses are necessary.)

Single Point Boxes without Fuses —

Unit heater applications not requiring supplemental fuses require a special Single Point Box without any fuses. The accessory Single Point Boxes contain a set of power taps and pigtailed to complete the wiring between the Single Point Box and the unit's main control box terminals. Refer to accessory heater and Single Point Box installation instructions for details on tap connections on field installed electric heat accessory.



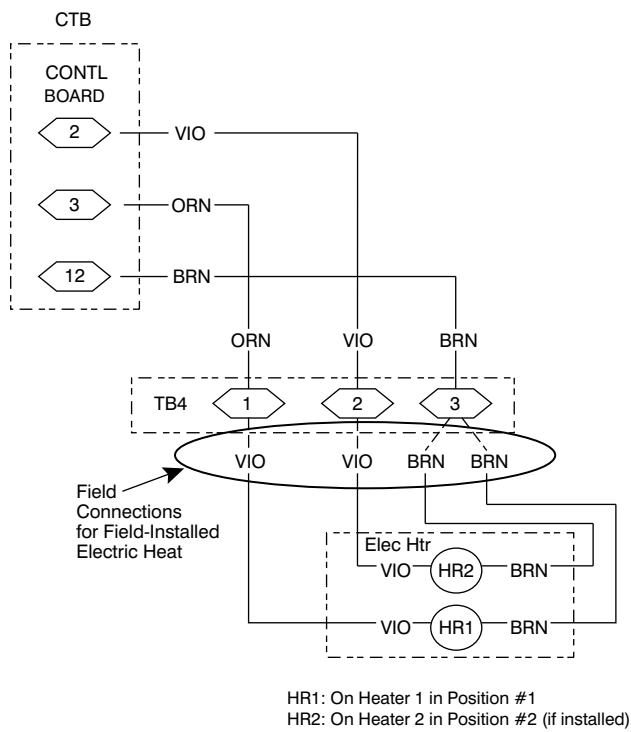
C08136

Fig. 32 - Typical Single Point Installation

Low-Voltage Control Connections —

Pull the low-voltage control leads from the heater module(s) - VIO and BRN (two of each if two modules are installed; identify for Module #1) - to the 4-pole terminal board TB4 located on the heater bulkhead to the left of Heater #1. Connect the VIO lead from Heater #1 to terminal TB4-1. For 2 stage heating, connect the VIO lead from Heater #2 to terminal TB4-2. For 1 stage heating with 2 heater modules connect the VIO lead from both Heater #1 and #2 to terminal TB4-1. Connect both BRN leads to terminal TB4-3. See Fig. 33.

50HC



C12106

Fig. 33 - Optional or Accessory Electric Heater Control Connections (2-Stage heating Shown)

Humidi-MiZer® Control Connections

Humidi-MiZer – Space RH Controller —

NOTE: The Humidi-MiZer is a factory installed option which is only available for units equipped with belt-drive motors.

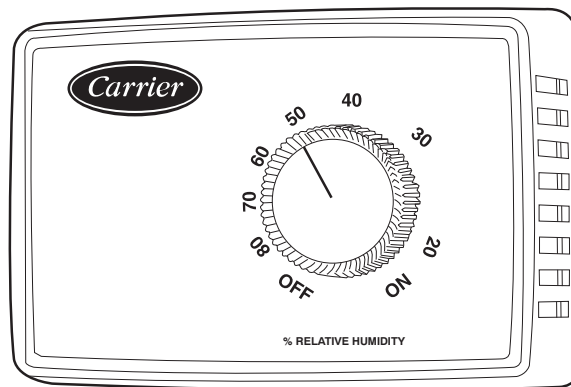
The Humidi-MiZer dehumidification system requires a field-supplied and -installed space relative humidity control device. This device may be a separate humidistat control (contact closes on rise in space RH above control setpoint) or a combination thermostat-humidistat control device such as Carrier's EDGE® Pro Thermidistat with isolated contact set for dehumidification control. The humidistat is normally used in applications where a temperature control is already provided (units with PermierLink™ control).

To connect the Carrier humidistat (HL38MG029):

1. Route the humidistat 2-conductor cable (field-supplied) through the hole provided in the unit corner post.
2. Feed wires through the raceway built into the corner post (see Fig. 28) to the 24-v barrier located on the left side of the control box. The raceway provides the UL-required clearance between high-voltage and low-voltage wiring.
3. Use wire nuts to connect humidistat cable to the leads in the low-voltage wiring (as shown in Fig. 36), connecting PKN to PNK and PNK/BLK to PNK/BLK.

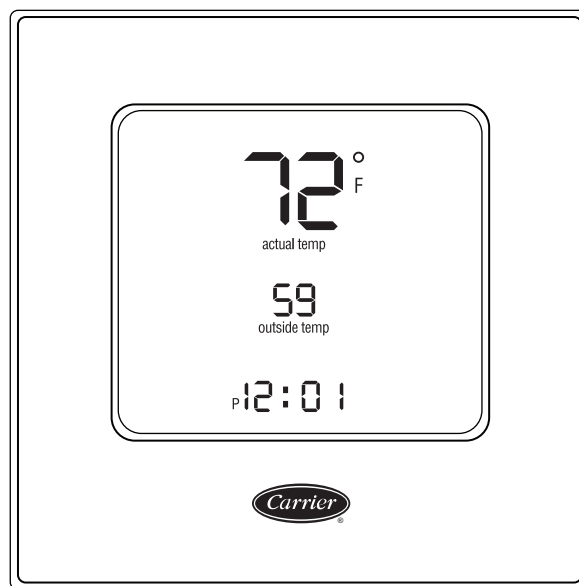
To connect the Thermidistat device (33CS2PPRH-01):

1. Route the Thermidistat multi-conductor thermostat cable (field-supplied) through the hole provided in the unit corner post.
2. Feed wires through the raceway built into the corner post (see Fig. 28) to the 24-v barrier located on the left side of the control box. The raceway provides the UL-required clearance between high-voltage and low-voltage wiring.
3. The Thermidistat has dry contacts at terminals D1 and D2 for dehumidification operation (see Fig. 37). The dry contacts must be wired between CTB terminal R and the PNK/BLK lead to the LTLO switch with field-supplied wire nuts. Refer to the installation instructions included with the Carrier Edge Thermidistat device (Form 33CS-65SI or latest) for more information.



C09295

Fig. 34 - Accessory Field-Installed Humidistat



C09296

Fig. 35 - EDGE Pro Thermidistat

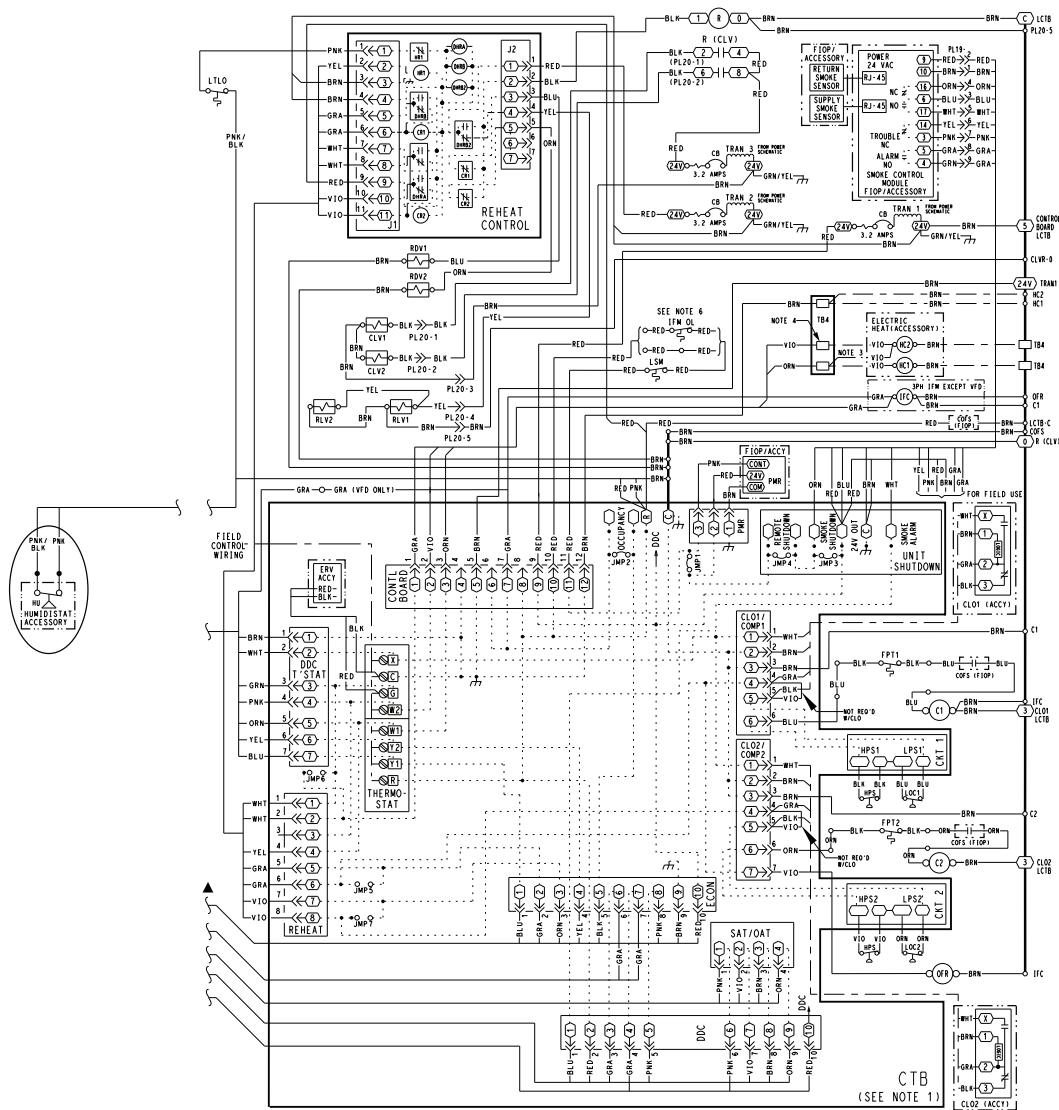
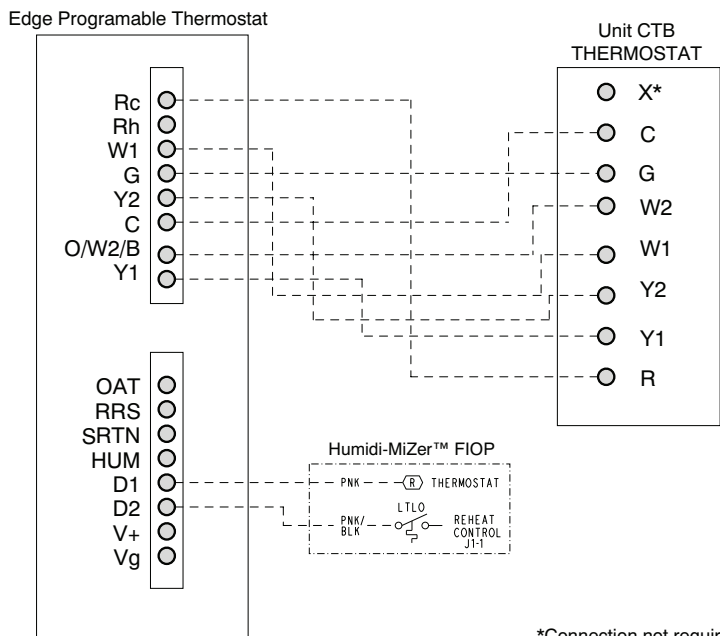


Fig. 36 - Typical Humidi-MiZer® Adaptive Dehumidification System Humidistat Wiring

C13074



*Connection not required.

Fig. 37 - Typical Rooftop Unit with Humidi-MiZer Adaptive Dehumidification System with EDGE Pro Thermidistat Device

C13066

Low Ambient Control (Factory Option)

If the unit comes with Electro-Mechanical (EM) control, then no adjustment is necessary.

If the unit comes with PremierLink™ or RTU Open control option, then refer to its installation control manual for details on adjusting “Cooling Lock-Out” setting and configure for your specific job requirements.

Staged Air Volume (SAV™) with Variable Frequency Drive (Factory Option)

For details on operating 50HC 2 stage cooling units equipped with the factory installed Staged Air Volume option, refer to the *Variable Frequency Drive (VFD) installation, Setup & Troubleshooting Supplement* (Catalog No. VFD-01SI, or later).

EconoMi\$er X - Ultra Low Leak Economizer (Factory Option)

For details on operating 50HC 2 stage cooling units equipped with a factory installed EconoMi\$er X, refer to the *EconoMi\$er X Installation, Setup & Troubleshooting Supplement* (Catalog No. LLECON-02SI, or later).

ComfortLink (Factory Option)

For details on operating 50HC units equipped with the factory installed *ComfortLink* option, refer to *Controls, Start-Up, Operation and Troubleshooting for 48/50HC 04-28 Single Package Rooftop Unit with ComfortLink Controls* (Catalog No. 48-50HC-C02T, or later).

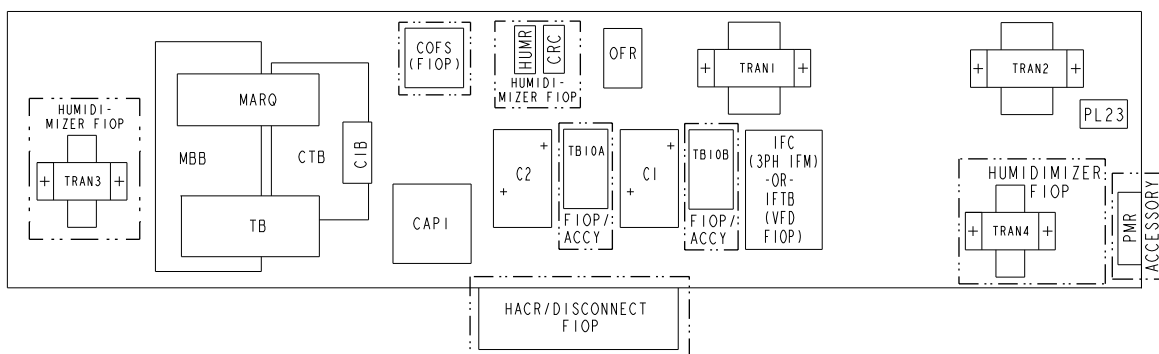


Fig. 38 - 50HC Control Box Component Locations with *ComfortLink*

C12311

50HC 08_09 208/230V, 460V, 575V
COMFORTLINK CONTROL

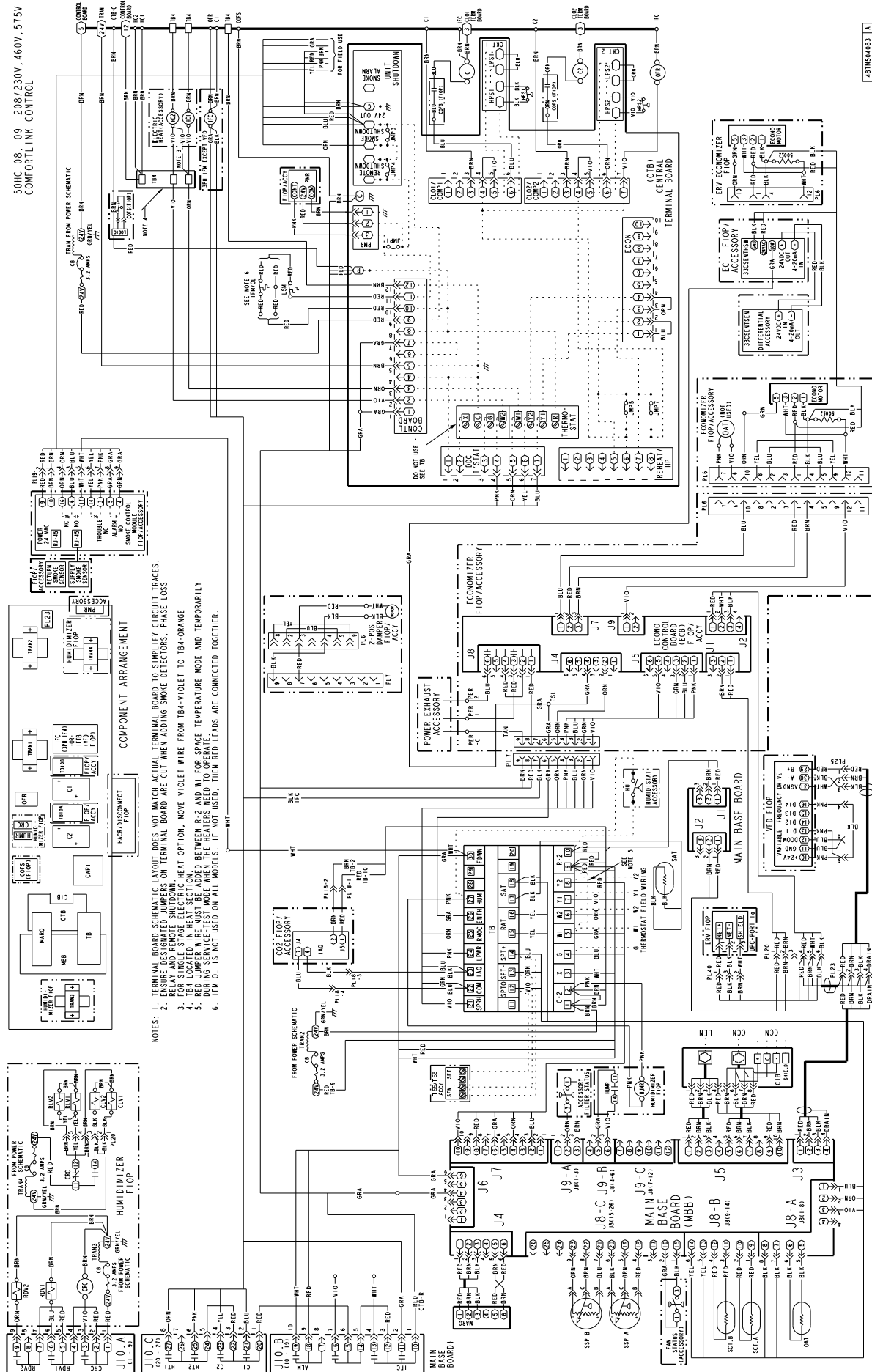


Fig. 39 - Typical ComfortLink Control Wiring Diagram (50HC*08/09 shown)

PremierLink™ (Factory-Option)

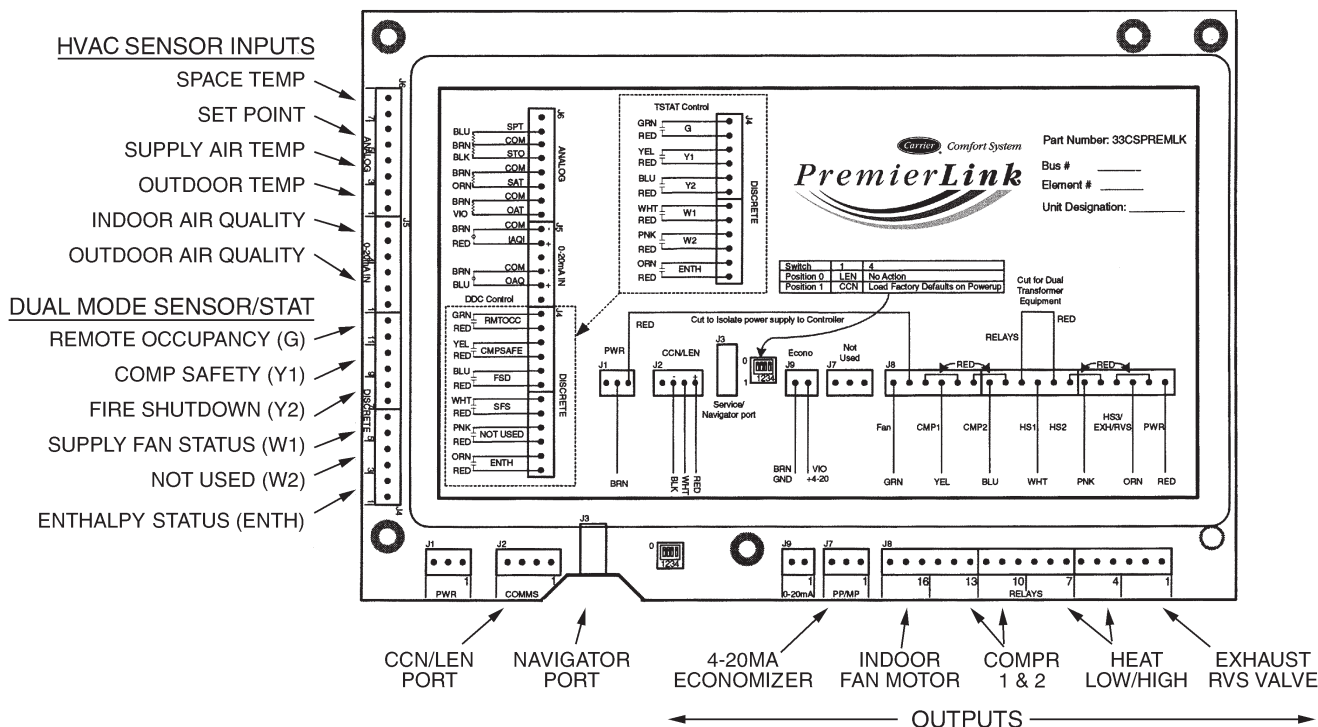


Fig. 41 - PremierLink Controller

C08199

The PremierLink controller (see Fig. 41) is compatible with Carrier Comfort Network® (CCN) devices. This control is designed to allow users the access and ability to change factory-defined settings, thus expanding the function of the standard unit control board. CCN service access tools include System Pilot (TM), Touch Pilot (TM) and Service Tool. (Standard tier display tools Navigator™ and Scrolling Marquee are not suitable for use with latest PremierLink controller (Version 2.x).)

The PremierLink control is factory-mounted in the 50HC unit's main control box to the left of the Control Terminal Board (CTB). Factory wiring is completed through harnesses connected to the CTB thermostat. Field connections are made at a 16-pole terminal block (TB1) located on the bottom shelf of the unit control box in front

of the PremierLink controller. The factory-installed PremierLink control includes the supply-air temperature (SAT) sensor. The outdoor air temperature (OAT) sensor is included in the FIOP/accessory EconoMi\$er™ 2 package.

The PremierLink controller requires the use of a Carrier electronic thermostat or a CCN connection for time broadcast to initiate its internal timeclock. This is necessary for broadcast of time of day functions (occupied/unoccupied).

NOTE: PremierLink controller is shipped in Sensor mode. To be used with a thermostat, the PremierLink controller must be configured to Thermostat mode. Refer to PremierLink Configuration instructions for Operating Mode.

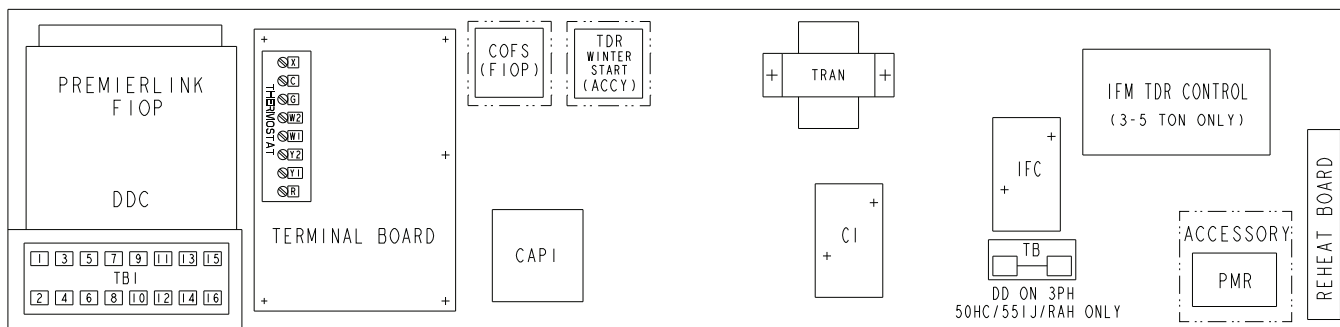
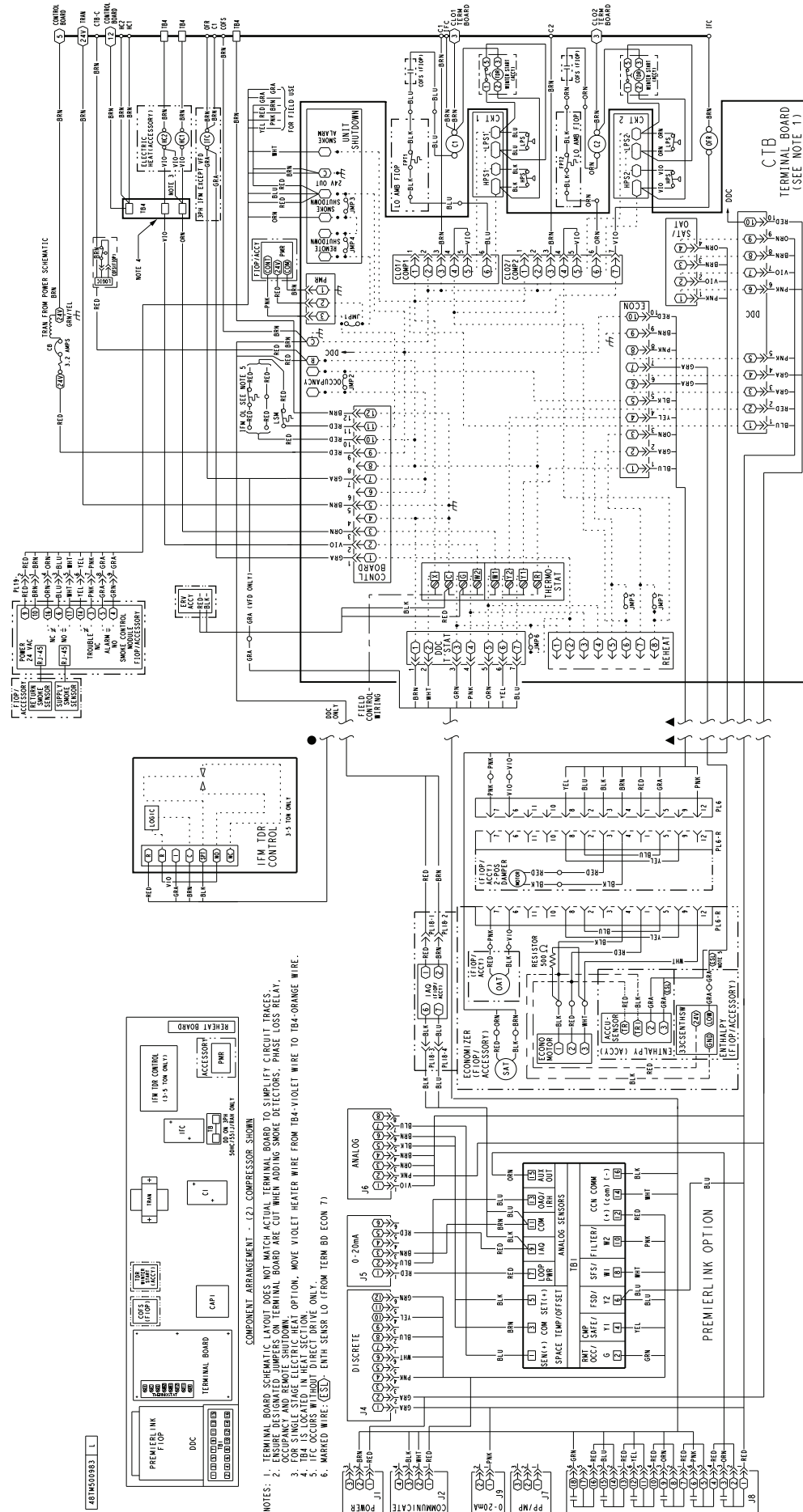
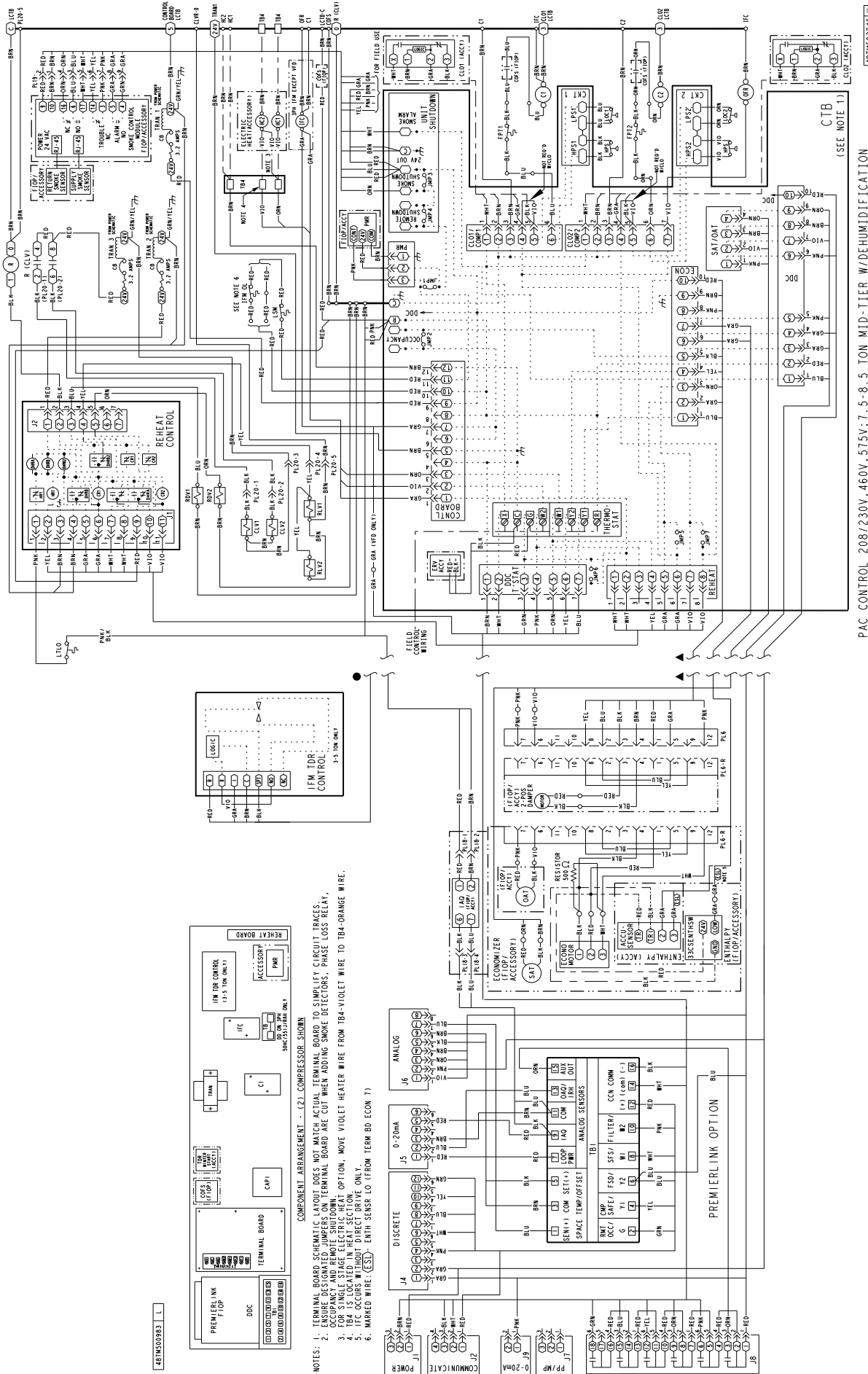


Fig. 42 - 50HC Control Box Component Locations with PremierLink

C13077

PAC CONTROL 208/230V 460V, 575V DUAL COMPRESSOR
 7.5-10TON PAC (2)COMPR T1
 7.5-8.5TON PAC (2)COMPR T2





PAC CONTROL 208/230V, 460V, 575V; 7.5-8.5 TON MID-TIER W/DEHUMIDIFICATION

481W50324E 1

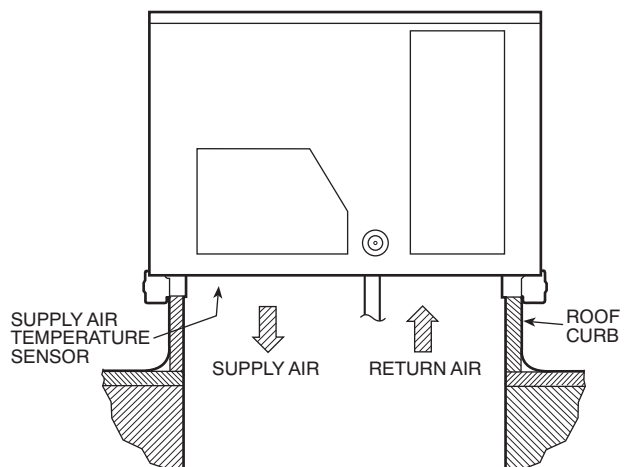
(SEE NOTE 1)

Fig. 44 - PremierLink Wiring Schematic with Humidi-MiZer®

Supply Air Temperature (SAT) Sensor —

On FIOP-equipped 50HC unit, the unit is supplied with a supply-air temperature (SAT) sensor (33ZCSENSAT). This sensor is a tubular probe type, approx 6-inches (152 mm) in length. It is a nominal 10-k ohm thermistor.

The SAT is factory-wired. The SAT probe is wire-tied to the supply-air opening (on the horizontal opening end) in its shipping position. Remove the sensor for installation. Re-position the sensor in the flange of the supply-air opening or in the supply air duct (as required by local codes). Drill or punch a 1/2-in. hole in the flange or duct. Use two field-supplied, self-drilling screws to secure the sensor probe in a horizontal orientation. See Fig. 45.



C08200

Fig. 45 - Typical Mounting Location for Supply Air Temperature (SAT) Sensor on Small Rooftop Units

NOTE: Refer to Form 33CS-67SI (or later) for complete PremierLink configuration, operating sequences and troubleshooting information. Have a copy of this manual available at unit start-up.

NOTE: The sensor must be mounted in the discharge airstream downstream of the cooling coil and any heating devices. Be sure the probe tip does not come in contact with any of the unit's heater surfaces.

Outdoor Air Temperature (OAT) Sensor —

The OAT is factory-mounted in the EconoMi\$er2 (FIOP or accessory). It is a nominal 10k ohm thermistor attached to an eyelet mounting ring.

EconoMi\$er2 —

The PremierLink control is used with EconoMi\$er2 (option or accessory) for outdoor air management. The damper position is controlled directly by the PremierLink control; EconoMi\$er2 has no internal logic device.

Outdoor air management functions can be enhanced with field-installation of these accessory control devices:

- Enthalpy control (outdoor air or differential sensors)
- Space CO₂ sensor
- Outdoor air CO₂ sensor

Refer to Table 3 for accessory part numbers.

Field Connections

Field connections for accessory sensor and input devices are made at the 16-pole terminal block (TB1) located on the control box bottom shelf in front of the PremierLink control (See Fig. 43 and Fig. 44). Some input devices also require a 24-vac signal source; connect at CTB terminal R at "THERMOSTAT" connection strip for this signal source. See connections figures on following pages for field connection locations (and for continued connections at the PremierLink board inputs).

Table 4 provides a summary of field connections for units equipped with Space Sensor. Table 5 provides a summary of field connections for units equipped with Space Thermostat.

Table 3 – PremierLink Sensor Usage

APPLICATION	OUTDOOR AIR TEMPERATURE SENSOR	RETURN AIR TEMPERATURE SENSOR	OUTDOOR AIR ENTHALPY SENSOR	RETURN AIR ENTHALPY SENSOR
Differential Dry Bulb Temperature with PremierLink (PremierLink requires 4–20 mA Actuator)	Included – CRTEMPSN001A00	Required – 33ZCT55SPT or equivalent	–	–
Single Enthalpy with PremierLink (PremierLink requires 4–20mA Actuator)	Included – Not Used	–	Requires – 33CSENTHSW	–
Differential Enthalpy with PremierLink (PremierLink requires 4–20mA Actuator)	Included – Not Used	–	Requires – 33CSENTHSW	Requires – 33CSENSEN

NOTES:

CO₂ Sensors (Optional):

- 33ZCSENCO2 – Room sensor (adjustable). Aspirator box is required for duct mounting of the sensor.
- 33ZCASPCO2 – Aspirator box used for duct-mounted CO₂ room sensor.
- 33ZCT55CO2 – Space temperature and CO₂ room sensor with override.
- 33ZCT56CO2 – Space temperature and CO₂ room sensor with override and setpoint.

Table 4 – Space Sensor Mode

TB1 TERMINAL	FIELD CONNECTION	INPUT SIGNAL
1	T55 – SEN/T56 – SEN	Analog (10k thermistor)
2	RMT OCC	Discrete, 24VAC
3	T55 – SEN/T56 – SEN	Analog (10k thermistor)
4	CMPSAFE	Discrete, 24VAC
5	T56 – SET	Analog (10k thermistor)
6	FSD	Discrete, 24VAC
7	LOOP – PWR	Analog, 24VDC
8	SPS	Discrete, 24VAC
9	IAQ – SEN	Analog, 4 – 20mA
10	FILTER	Discrete, 24VAC
11	IAQ – COM/OAQ – COM/RH – COM	Analog, 4 – 20mA
12	CCN + (RED)	Digital, , 5VDC
13	OAQ – SEN/RH – SEN	Analog, 4 – 20mA
14	CCN Gnd (WHT)	Digital, 5VDC
15	AUX OUT(Power Exhaust)	(Output) Discrete 24VAC
16	CCN – (BLK)	Digital, 5VDC

LEGEND:

T55	– Space Temperature Sensor	FSD	– Fire Shutdown
T56	– Space Temperature Sensor	IAQ	– Indoor Air Quality (CO ₂)
CCN	– Carrier Comfort Network (communication bus)	OAQ	– Outdoor Air Quality (CO ₂)
CMPSAFE	– Compressor Safety	RH	– Relative Humidity
FILTER	– Dirty Filter Switch	SFS	– Supply Fan Status

Table 5 – Thermostat Mode

TB1 TERMINAL	FIELD CONNECTION	INPUT SIGNAL
1	RAT SEN	Analog (10k thermistor)
2	G	Discrete, 24VAC
3	RAT SEN	Analog (10k thermistor)
4	Y1	Discrete, 24VAC
5		
6	Y2	Discrete, 24VAC
7	LOOP – PWR	Analog, 24VDC
8	W1	Discrete, 24VAC
9	IAQ – SEN	Analog, 4 – 20mA
10	W2	Discrete, 24VAC
11	IAQ – COM/OAQ – COM/RH – COM	Analog, 4 – 20mA
12	CCN + (RED)	Digital, 5VDC
13	OAQ – SEN/RH – SEN	Analog, 4 – 20mA
14	CCN Gnd (WHT)	Digital, 5VDC
15	AUX OUT (Power Exhaust)	(Output) Discrete 24VAC
16	CCN – (BLK)	Digital, 5VDC

LEGEND:

CCN	– Carrier Comfort Network (communication bus)	RH	– Relative Humidity
G	– Thermostat Fan	W1	– Thermostat Heat Stage 1
IAQ	– Indoor Air Quality (CO ₂)	W2	– Thermostat Heat Stage 2
OAQ	– Outdoor Air Quality (CO ₂)	Y1	– Thermostat Cool Stage 1
RAT	– Return Air Temperature	Y2	– Thermostat Cool Stage 2

Space Sensors —

The PremierLink controller is factory-shipped configured for Space Sensor Mode. A Carrier T-55 or T-56 space sensor must be used. T-55 space temperature sensor provides a signal of space temperature to the PremierLink control. T-56 provides same space temperature signal plus it allows for adjustment of space temperature setpoints from the face of the sensor by the occupants.

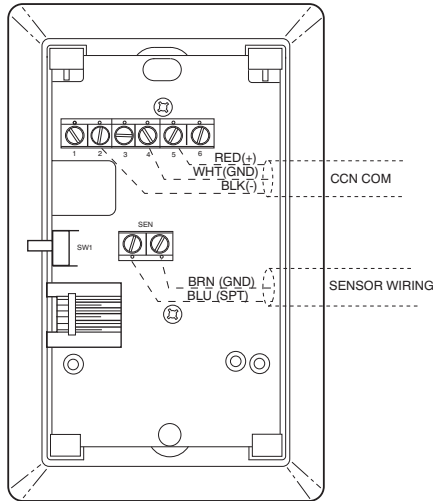


Fig. 46 - T-55 Space Temperature Sensor Wiring

Connect T-55: See Fig. 46 for typical T-55 internal connections. Connect the T-55 SEN terminals to TB1 terminals 1 and 3 (see Fig. 47).

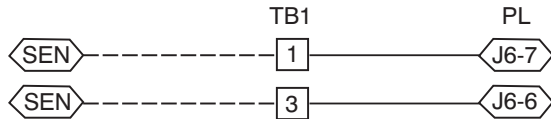


Fig. 47 - PremierLink T-55 Sensor

Connect T-56: See Fig. 48 for T-56 internal connections. Install a jumper between SEN and SET terminals as illustrated. Connect T-56 terminals to TB1 terminals 1, 3 and 5 (see Fig. 49).

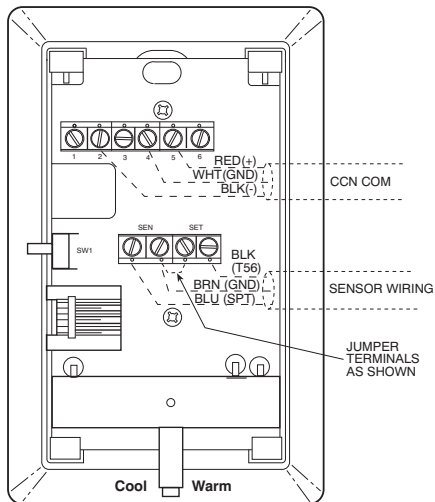


Fig. 48 - T-56 Internal Connections

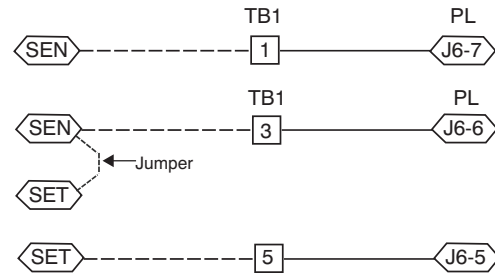


Fig. 49 - PremierLink T-56 Sensor

Connect Thermostat —

A 7-wire thermostat connection requires a 24-v power source and a common connection. Use the R and C terminals on the CTB's THERMOSTAT connection strip for these. Connect the thermostat's Y1, Y2, W1, W2 and G terminals to PremierLink TB1 as shown in Fig. 50.

If the 50HC unit is equipped with factory-installed smoke detector(s), disconnect the factory BLU lead at TB1-6 (Y2) before connecting the thermostat. Identify the BLU lead originating at CTB-DDC-1; disconnect at TB1-6 and tape off. Confirm that the second BLU lead at TB1-6 remains connected to PremierLink J4-8.

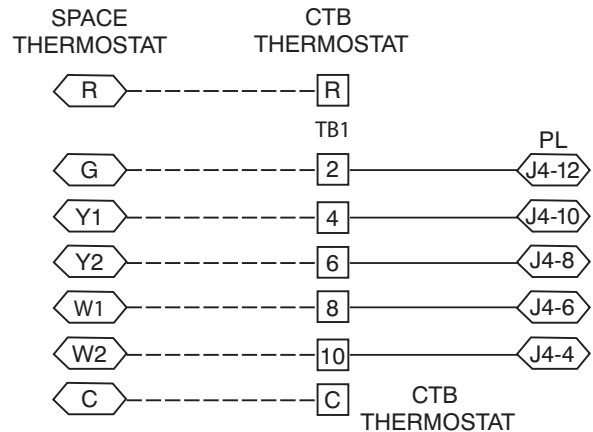


Fig. 50 - Space Thermostat Connections

If the 50HC unit has an economizer system and free-cooling operation is required, a sensor representing Return Air Temperature must also be connected (field-supplied and installed). This sensor may be a T-55 Space Sensor (see Fig. 46) installed in the space or in the return duct, or it may be sensor PNO 33ZCSENSAT, installed in the return duct. Connect this sensor to TB1-1 and TB1-3 per Fig. 47.

Configure the Unit for Thermostat Mode —

Connect to the CCN bus using a CCN service tool and navigate to PremierLink Configuration screen for Operating Mode. Default setting is Sensor Mode (value 1). Change the value to 0 to reconfigure the controller for Thermostat Mode.

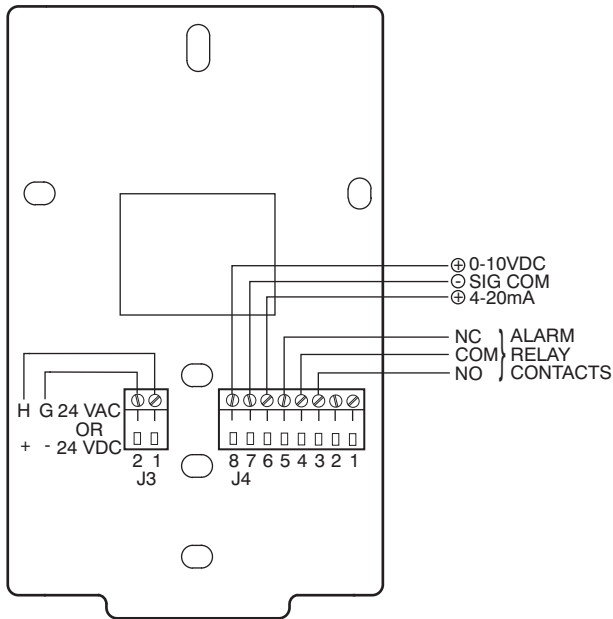
When the PremierLink is configured for Thermostat Mode, these functions are not available: Fire Shutdown (FSD), Remote Occupied (RMT OCC), Compressor Safety (CMPSAFE), Supply Fan Status (SFS), and Filter Pressure Switch (FILTER).

Economizer Controls

Indoor Air Quality (CO₂) Sensor —

The indoor air quality sensor accessory monitors space carbon dioxide (CO₂) levels. This information is used to monitor IAQ levels. Several types of sensors are available, for wall mounting in the space or in return duct, with and without LCD display, and in combination with space temperature sensors. Sensors use infrared technology to measure the levels of CO₂ present in the space air.

The CO₂ sensors are all factory set for a range of 0 to 2000 ppm and a linear mA output of 4 to 20. Refer to the instructions supplied with the CO₂ sensor for electrical requirements and terminal locations. See Fig. 51 for typical CO₂ sensor wiring schematic.



C08635

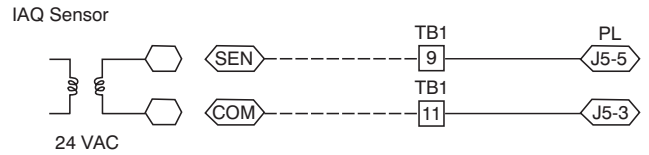
Fig. 51 - Indoor/Outdoor Air Quality (CO₂) Sensor (33ZCSENC02) - Typical Wiring Diagram

To accurately monitor the quality of the air in the conditioned air space, locate the sensor near a return-air grille (if present) so it senses the concentration of CO₂ leaving the space. The sensor should be mounted in a location to avoid direct breath contact.

Do not mount the IAQ sensor in drafty areas such as near supply ducts, open windows, fans, or over heat sources. Allow at least 3 ft (0.9 m) between the sensor and any corner. Avoid mounting the sensor where it is influenced by the supply air; the sensor gives inaccurate readings if the supply air is blown directly onto the sensor or if the supply air does not have a chance to mix with the room air before it is drawn into the return airstream.

Wiring the Indoor Air Quality Sensor: For each sensor, use two 2-conductor 18 AWG (American Wire Gauge) twisted-pair cables (unshielded) to connect the separate isolated 24 vac power source to the sensor and to connect the sensor to the control board terminals.

To connect the sensor to the control, identify the positive (4 to 20 mA) and ground (SIG COM) terminals on the sensor. See Fig. 51. Connect the 4-20 mA terminal to terminal TB1-9 and connect the SIG COM terminal to terminal TB1-11. See Fig. 52.



C08636

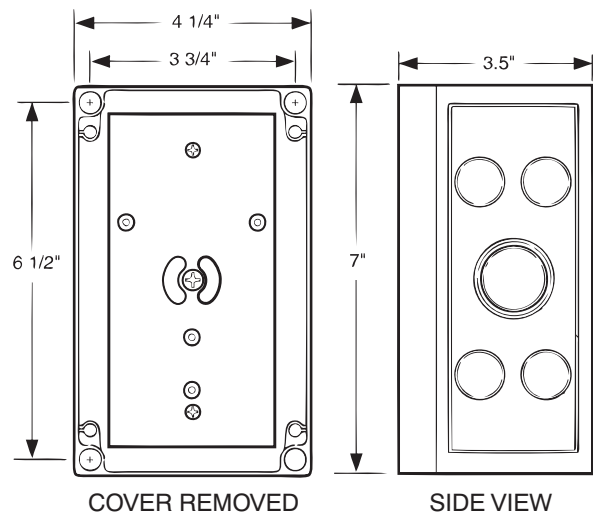
Fig. 52 - Indoor CO₂ Sensor (33ZCSENC02) Connections

Refer to Form 33CS-67SI, PremierLink Installation, Start-up, and Configuration Instructions, for detailed configuration information

Outdoor Air Quality Sensor

(PNO 33ZCSENC02 plus weatherproof enclosure) —

The outdoor air CO₂ sensor is designed to monitor carbon dioxide (CO₂) levels in the outside ventilation air and interface with the ventilation damper in an HVAC system. The OAQ sensor is packaged with an outdoor cover. See Fig. 53. The outdoor air CO₂ sensor must be located in the economizer outside air hood.



C07135

Fig. 53 - Outdoor Air Quality Sensor Cover

Wiring the Outdoor Air CO₂ Sensor: A dedicated power supply is required for this sensor. A two-wire cable is required to wire the dedicated power supply for the sensor. The two wires should be connected to the power supply and terminals 1 and 2.

To connect the sensor to the control, identify the positive (4 to 20 mA) and ground (SIG COM) terminals on the OAQ sensor. See Fig. 51. Connect the 4 to 20 mA terminal to the TB1-13 terminal of the 50HC. Connect the SIG COM terminal to the TB1-11 terminal of the 50HC. See Fig. 54.

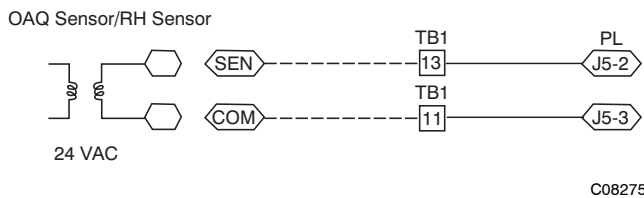


Fig. 54 - Outdoor CO₂ Sensor Connections

Space Relative Humidity Sensor or Humidistat Connections —

Space Relative Humidity Sensor connections: The accessory space humidity sensor (33ZCSENSRH-01) is installed on an interior wall to measure the relative humidity of the air within the occupied space.

The use of a standard 2 X 4 inch electrical box to accommodate the wiring is recommended for installation. The sensor can be mounted directly on the wall, if acceptable by local codes.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in permanent damage to the sensor.

DO NOT clean or touch the sensing element with chemical solvents as they can permanently damage the sensor.

⚠ CAUTION

UNIT PERFORMANCE HAZARD

Failure to follow this caution will result in inaccurate sensor readings.

DO NOT mount the sensor in drafty areas such as near heating or air-conditioning ducts, open windows, fans, or over heat sources such as baseboard heaters, radiators, or wall-mounted dimmers. Sensors mounted in those areas will produce inaccurate readings.

If the sensor is installed directly on a wall service, install the humidity sensor using 2 screws and 2 hollow wall anchors (field supplied). Do not over tighten screws. See Fig. 55.

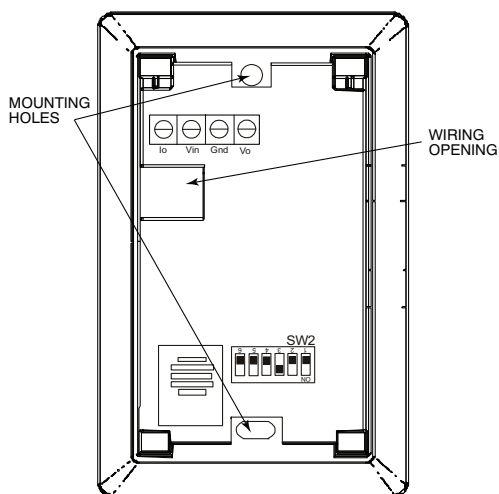
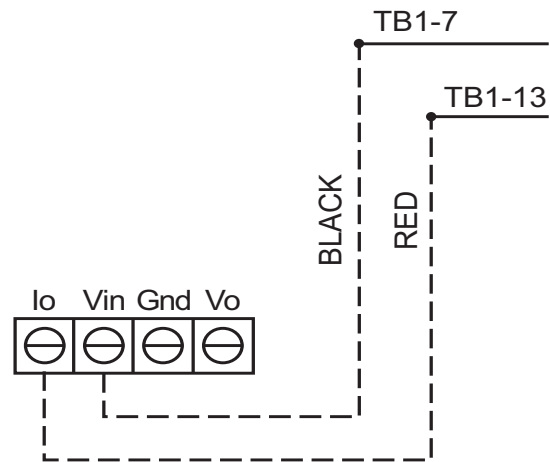


Fig. 55 - Space Relative Humidity Sensor Installation

The sensor must be mounted vertically on the wall. The Carrier logo should be orientated correctly when the sensor is properly mounted.

Avoid corner locations. Allow at least 4 ft between the sensor and any corner. Airflow near corners tends to be reduced, resulting in erratic sensor readings. The sensor should be vertically mounted approximately 5 ft up from the floor, beside the space temperature sensor.

For wiring distances up to 500 feet, use a 3-conductor, 18 or 20 AWG cable. ACCN communication cable can be used, although the shield is not required. The shield must be removed from the sensor end of the cable if this cable is used. See Fig. 56 for wiring details.



C11180

Fig. 56 - Space Relative Humidity Sensor Connection

The power for the sensor is provided by the PremierLink control on terminal J5-4 (+33 to +35vdc).

To wire the sensor:

1. At the sensor, remove 4 inches from the jacket from the cable. Strip ¼ inch of insulation from each conductor. Route the cable through the wire clearance opening in the center of the sensor. See Fig. 55.
2. Connect a field-supplied BLACK wire to the sensor screw terminal marked Vin.
3. Connect a field-supplied RED wire into the sensor screw terminal marked Io.
4. Connect the field-supplied RED wire from the sensor to TB1-13.
5. Connect the field-supplied BLACK wire from the sensor to TB1-7.

Smoke Detector/Fire Shutdown (FSD) —

This function is available only when PremierLink is configured for (Space) Sensor Mode. The unit is factory-wired for PremierLink FSD operation when PremierLink is factory-installed.

On 50HC units equipped with factory-installed Smoke Detector(s), the smoke detector controller implements the unit shutdown through its NC contact set connected to the unit's CTB input. The FSD function is initiated via the smoke detector's Alarm NO contact set. The PremierLink communicates the smoke detector's tripped status to the CCN building control. See Fig. 43 and Fig. 44, the PremierLink wiring schematics.

Filter Status Switch —

This function is available only when PremierLink is configured for (Space) Sensor Mode.

PremierLink control can monitor return filter status in two ways: By monitoring a field-supplied/installed filter pressure switch or via supply fan runtime hours.

Using switch input: Install the dirty filter pressure switch according to switch manufacturer's instructions, to measure pressure drop across the unit's return filters. Connect one side of the switch's NO contact set to CTB's THERMOSTAT-R terminal. Connect the other side of the NO contact set to TB1-10. Setpoint for Dirty Filter is set at the switch. See Fig. 57.

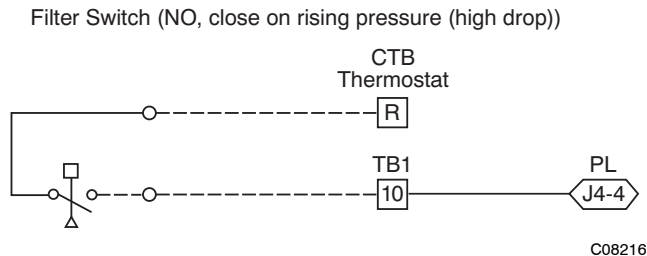


Fig. 57 - PremierLink Filter Switch Connection

When the filter switch's NO contact set closes as filter pressure drop increases (indicating dirt-laden filters), the input signal to PremierLink causes the filter status point to read "DIRTY".

Using Filter Timer Hours: Refer to Form 33CS-67SI for instructions on using the PremierLink Configuration screens and on unit alarm sequence.

Supply Fan Status Switch —

The PremierLink control can monitor supply fan operation through a field-supplied/installed differential pressure switch. This sequence will prevent (or interrupt) operation of unit cooling, heating and economizer functions until the pressure switch contacts are closed indicating proper supply fan operation.

Install the differential pressure switch in the supply fan section according to switch manufacturer's instructions. Arrange the switch contact to be open on no flow and to close as pressure rises indicating fan operation.

Connect one side of the switch's NO contact set to CTB's THERMOSTAT-R terminal. Connect the other side of the NO contact set to TB1-8. Setpoint for Supply Fan Status is set at the switch. See Fig. 58.

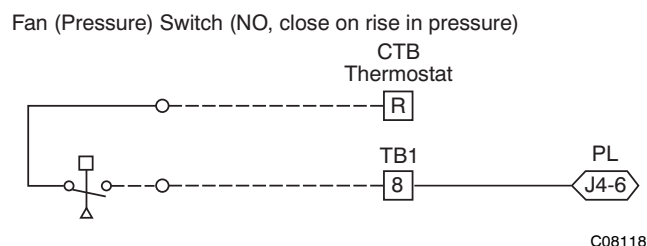


Fig. 58 - PremierLink Wiring Fan Pressure Switch Connection

Remote Occupied Switch —

The PremierLink control permits a remote timeclock to override the control's on-board occupancy schedule and place the unit into Occupied mode. This function may also provide a "Door Switch" time delay function that will terminate cooling and heating functions after a 2-20 minute delay.

Connect one side of the NO contact set on the timeclock to CTB's THERMOSTAT-R terminal. Connect the other side of the timeclock contact to the unit's TB1-2 terminal (see Fig. 59).

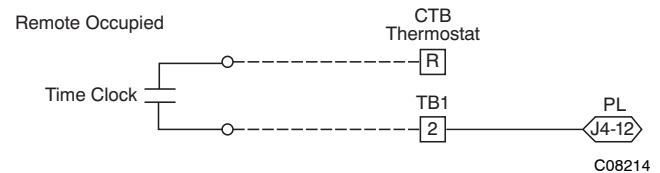


Fig. 59 - PremierLink Wiring Remote Occupied

Refer to Form 33CS-67SI for additional information on configuring the PremierLink control for Door Switch timer function.

Power Exhaust (output) —

Connect the accessory Power Exhaust contactor coils(s) per Fig. 60.

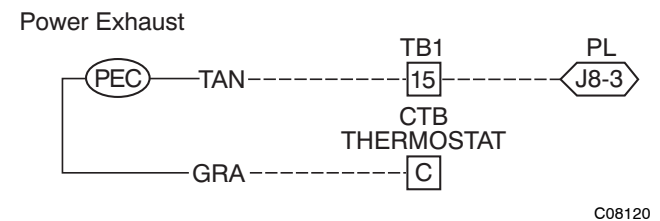


Fig. 60 - PremierLink Power Exhaust Output Connection

NOTE: The Power Exhaust and Humidi-MiZer® options can not be used with PremierLink at the same time as both options require connection at TB1-15 (AUX OUT).

CCN Communication Bus —

The PremierLink controller connects to the bus in a daisy chain arrangement. Negative pins on each component must be connected to respective negative pins, and likewise, positive pins on each component must be connected to respective positive pins. The controller signal pins must be wired to the signal ground pins. Wiring connections for CCN must be made at the 3-pin plug.

At any baud (9600, 19200, 38400 baud), the number of controllers is limited to 239 devices maximum. Bus length may not exceed 4000 ft, with no more than 60 total devices on any 1000-ft section. Optically isolated RS-485 repeaters are required every 1000 ft.

NOTE: Carrier device default is 9600 band.

Communications Bus Wire Specifications: The CCN Communication Bus wiring is field-supplied and field-installed. It consists of shielded 3-conductor cable with drain (ground) wire. The cable selected must be identical to the CCN Communication Bus wire used for the entire network.

See Table 6 for recommended cable.

Table 6 – Recommended Cables

MANUFACTURER	CABLE PART NO.
Alpha	2413 or 5463
American	A22503
Belden	8772
Columbia	02525

NOTE: Conductors and drain wire must be at least 20 AWG, stranded, and tinned copper. Individual conductors must be insulated with PVC, PVC/nylon, vinyl, Teflon, or polyethylene. An aluminum/polyester 100% foil shield and an outer jacket of PVC, PVC/nylon, chrome vinyl, or Teflon with a minimum operating temperature range of -20°C to 60°C is required. Do not run communication wire in the same conduit as or next to any AC voltage wiring.

The communication bus shields must be tied together at each system element. If the communication bus is entirely within one building, the resulting continuous shield must be connected to ground at only one single point. If the communication bus cable exits from one building and enters another building, the shields must be connected to the grounds at a lightning suppressor in each building (one point only).

Connecting CCN bus:

NOTE: When connecting the communication bus cable, a color code system for the entire network is recommended to simplify installation and checkout. See Table 7 for the recommended color code.

Table 7 – Color Code Recommendations

SIGNAL TYPE	CCN BUS WIRE COLOR	CCN PLUG PIN NUMBER
+	Red	1
Ground	White	2
-	Black	3

Connect the CCN (+) lead (typically RED) to the unit's TB1-12 terminal. Connect the CCN (ground) lead (typically WHT) to the unit's TB1-14 terminal. Connect the CCN (-) lead (typically BLK) to the unit's TB1-16 terminal. See Fig. 61.

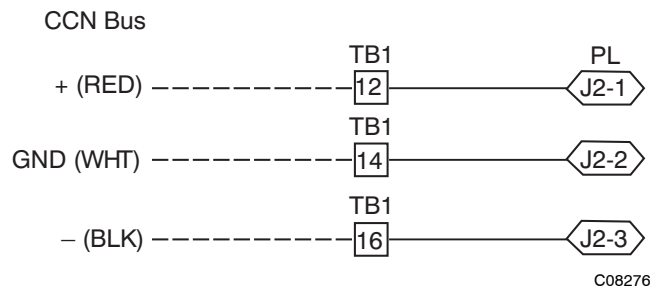


Fig. 61 - PremierLink CCN Bus Connections

RTU Open Control System

The RTU Open control is factory-mounted in the 48DC*D unit's main control box, to the left of the CTB. See Fig. 63. Factory wiring is completed through harnesses connected to the CTB. Field connections for RTU Open sensors will be made at the Phoenix connectors on the RTU Open board. The factory-installed RTU Open control includes the supply-air temperature (SAT) sensor. The outdoor air temperature (OAT) sensor is included in the FIOP/accessory EconoMi\$er2 package.

The RTU Open controller is an integrated component of the Carrier rooftop unit. Its internal application programming provides optimum performance and energy efficiency. RTU Open enables the unit to run in 100% stand-alone control mode, Carrier's I-Vu Open network, or a Third Party Building Automation System (BAS). On-board DIP switches allow you to select your protocol (and baud rate) of choice among the four most popular protocols in use today: BACnet, Modbus, Johnson N2 and LonWorks. (See Fig. 62.)

Refer to Table 8, RTU Open Controller Inputs and Outputs for locations of all connections to the RTU Open board.

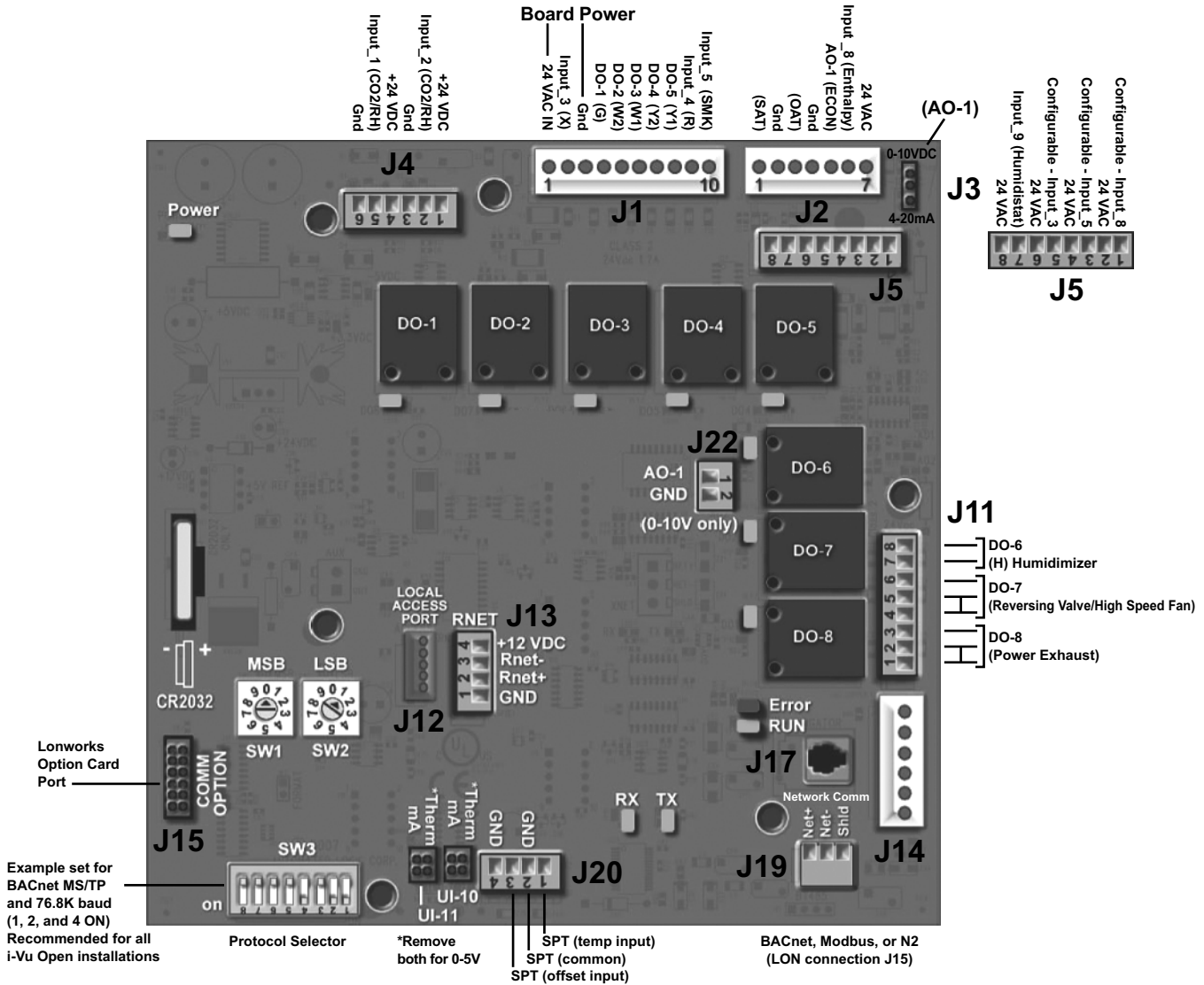


Fig. 62 - RTU Open Multi-Protocol Control Board

C12751

PAC CONTROL 208/230V, 460V, 575V DUAL COMPRESSOR
 7.5-10TON PAC (2)COMPR T1
 7.5-8.5TON PAC (2)COMPR T2

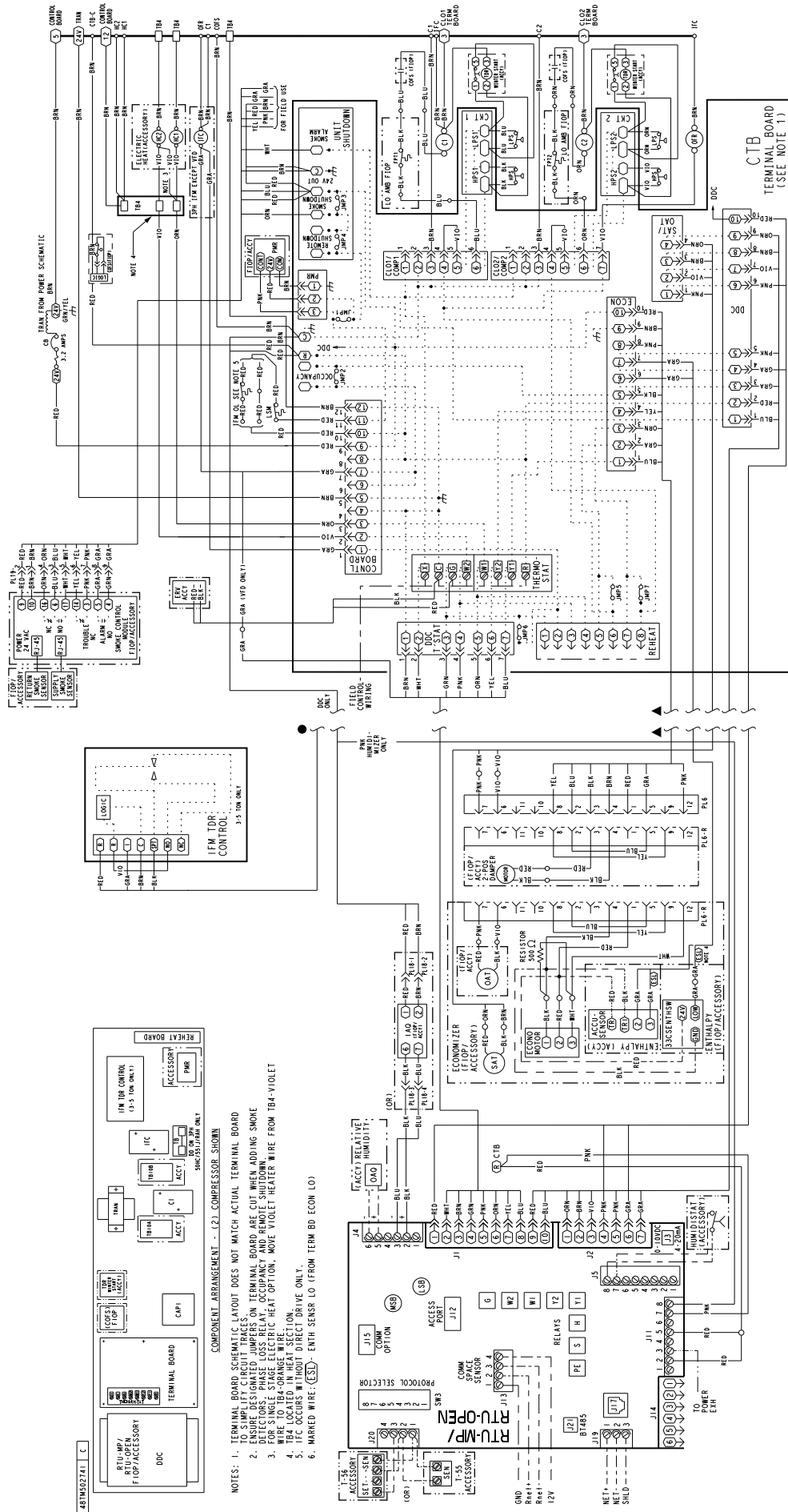


Fig. 63 - RTU Open System Control Wiring Diagram

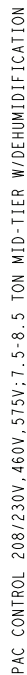


Fig. 64 - RTU Open System Control Wiring Diagram with Humidi-MiZer®

Table 8 – RTU Open Controller Inputs and Outputs

POINT NAME	BACnet OBJECT NAME	TYPE OF I/O	CONNECTION PIN NUMBER(S)
DEDICATED INPUTS			
Space Temp / Zone Temp	zone_temp	AI (10K Thermistor)	J20-1 & 2
Supply Air Temperature	sa_temp	AI (10K Thermistor)	J2-1 & 2
Outdoor Air Temperature	oa_temp	AI (10K Thermistor)	J2-3 & 4
Space Temperature Offset Pot	stpt_adj_offset	AI (100K Potentiometer)	J20-3 & 4
Safety Chain Feedback	safety_status	DI (24 VAC)	J1-9
Compressor Safety Status	comp_status	DI (24 VAC)	J1-2
Fire Shutdown Status	firedown_status	DI (24 VAC)	J1-10
Enthalpy Status	enthalpy_status	DI (24 VAC)	J2-6 & 7
Humidistat Input Status	humstat_status	DI (24 VAC)	J5-7 & 8
Zone Temperature	n/a	n/a	J13-1, 2, 3, 4
CONFIGURABLE INPUTS			
Indoor Air CO2	iaq	AI (4-20 ma)	J4-2 & 3 or J4-5 & 6
Outdoor Air CO2	oaq	AI (4-20 ma)	
Space Relative Humidity	space_rh	AI (4-20 ma)	
Supply Fan Status*	sfan_status	DI (24 VAC)	J5-1 or J5-3 or J5-5
Filter Status*	filter_status	DI (24 VAC)	
Door Contact Input*	door_contact_status	DI (24 VAC)	
Occupancy Contact*	occ_contact_status	DI (24 VAC)	
OUTPUTS			
Economizer Output	econ_output	AO (4-20ma)	J2-5
Supply Fan Relay State	sfan	DO Relay (24VAC , 1A)	J1-4
Compressor 1 Relay State	comp_1	DO Relay (24VAC , 1A)	J1-8
Compressor 2 Relay State	comp_2	DO Relay (24VAC , 1A)	J1-7
Heat Stage 1 Relay State	heat_1	DO Relay (24VAC , 1A)	J1-6
Heat Stage 2 Relay State	heat_2	DO Relay (24VAC , 1A)	J1-5
Power Exhaust Relay State	pexh	DO Relay (24VAC , 1A)	J11-1 & 3
Humidimizer Relay State	dehum	DO Relay (24VAC, 1A)	J11-7, 8

LEGEND

AI – Analog Input
AO – Analog Output
DI – Discrete Input
DO – Discrete Output

* These inputs (if installed) take the place of the default input on the specific channel according to schematic.
 Parallel pins J5–1 = J2–6, J5–3 = J1–10, J5–5 = J1–2 are used for field–installation.

The RTU Open controller requires the use of a Carrier space sensor. A standard thermostat cannot be used with the RTU Open system.

Supply Air Temperature (SAT) Sensor —

On FIOP-equipped 50HC unit, the unit is supplied with a supply-air temperature (SAT) sensor (33ZCSENSAT). This sensor is a tubular probe type, approx 6-inches (152 mm) in length. It is a nominal 10-k ohm thermistor.

The SAT is factory-wired. The SAT probe is wire-tied to the supply-air opening (on the horizontal opening end) in its shipping position. Remove the sensor for installation. Re-position the sensor in the flange of the supply-air opening or in the supply air duct (as required by local codes). Drill or punch a 1/2-in. hole in the flange or duct. Use two field-supplied, self-drilling screws to secure the sensor probe in a horizontal orientation. See Fig. 45.

Outdoor Air Temperature (OAT) Sensor —

The OAT is factory-mounted in the EconoMiSer2 (FIOP or accessory). It is a nominal 10k ohm thermistor attached to an eyelet mounting ring.

EconoMiSer2 —

The RTU Open control is used with EconoMiSer2 (option or accessory) for outdoor air management. The damper position is controlled directly by the RTU Open control; EconoMiSer2 has no internal logic device.

Outdoor air management functions can be enhanced with field-installation of these accessory control devices:

- Enthalpy control (outdoor air or differential sensors)
- Space CO₂ sensor
- Outdoor air CO₂ sensor

Field Connections

Field connections for accessory sensors and input devices are made the RTU Open, at plugs J1, J2, J4, J5, J11 and J20. All field control wiring that connects to the RTU Open must be routed through the raceway built into the corner post as shown in Fig. 28. The raceway provides the UL required clearance between high- and low-voltage wiring. Pass the control wires through the hole provided in the corner post, then feed the wires thorough the raceway to the RTU Open. Connect to the wires to the removable Phoenix connectors and then reconnect the connectors to the board.

Space Temperature (SPT) Sensors —

There are two types of SPT sensors available from Carrier, resistive input non-communicating (T55, T56, and T59) and Rnet communicating (SPS, SPPL, SPP, and SPPF) sensors. Each type has a variety of options consisting of: timed override button, set point adjustment, a LCD screen, and communication tie in. Space temperature can be also be written to from a building network or zoning system. However, it is still recommended that return air duct sensor be installed to allow stand-alone operation for back-up. Refer to the configuration section for details on controller configurations associated with space sensors.

- 33ZCT55SPT, space temperature sensor with override button
- 33ZCT56SPT, space temperature sensor with override button and setpoint adjustment
- 33ZCT59SPT, space temperature sensor with LCD (liquid crystal display) screen, override button, and setpoint adjustment

Use 20 gauge wire to connect the sensor to the controller. The wire is suitable for distances of up to 500 ft. Use a three-conductor shielded cable for the sensor and setpoint adjustment connections. If the setpoint adjustment (slidebar) is not required, then an unshielded, 18 or 20 gauge, two-conductor, twisted pair cable may be used.

Connect T-55: See Fig. 46 for typical T-55 internal connections. Connect the T-55 SEN terminals to RTU Open J20-1 and J20-2. See Fig. 65.

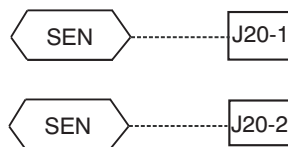


Fig. 65 - RTU Open T-55 Sensor Connections

Connect T-56: See Fig. 48 for T-56 internal connections. Install a jumper between SEN and SET terminals as illustrated. Connect T-56 terminals to RTU Open J20-1, J20-2 and J20-3 per Fig. 66.

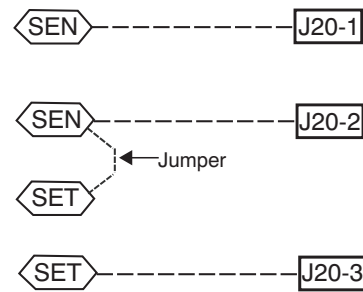
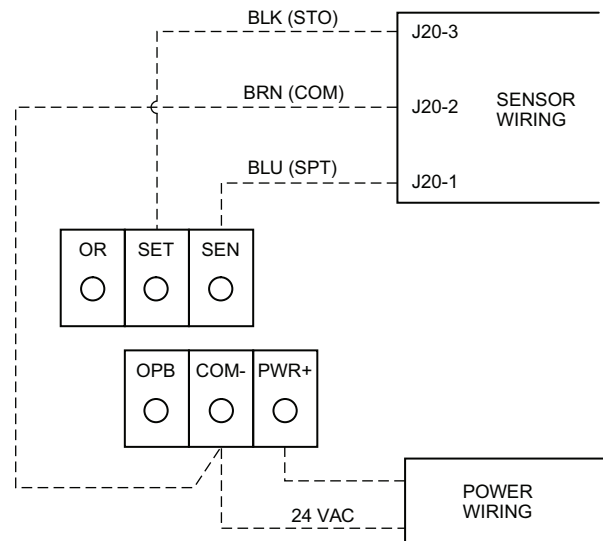


Fig. 66 - RTU Open T-56 Sensor Connections

Connect T-59: The T-59 space sensor requires a separate, isolated power supply of 24 VAC. See Fig. 67 for internal connections at the T-59. Connect the SEN terminal (BLU) to RTU Open J20-1. Connect the COM terminal (BRN) to J20-2. Connect the SET terminal (STO or BLK) to J20-3.



NOTE: Must use a separate isolated transformer.

Fig. 67 - Space Temperature Sensor Typical Wiring (33ZCT59SPT)

Indoor Air Quality (CO₂) Sensor —

The indoor air quality sensor accessory monitors space carbon dioxide (CO₂) levels. This information is used to monitor IAQ levels. Several types of sensors are available, for wall mounting in the space or in return duct, with and without LCD display, and in combination with space temperature sensors. Sensors use infrared technology to measure the levels of CO₂ present in the space air.

The CO₂ sensors are all factory set for a range of 0 to 2000 ppm and a linear mA output of 4 to 20. Refer to the instructions supplied with the CO₂ sensor for electrical requirements and terminal locations. See Fig. 51 for typical CO₂ sensor wiring schematic.

To accurately monitor the quality of the air in the conditioned air space, locate the sensor near a return-air grille (if present) so it senses the concentration of CO₂ leaving the space. The sensor should be mounted in a location to avoid direct breath contact.

Do not mount the IAQ sensor in drafty areas such as near supply ducts, open windows, fans, or over heat sources. Allow at least 3 ft (0.9 m) between the sensor and any corner. Avoid mounting the sensor where it is influenced by the supply air; the sensor gives inaccurate readings if the supply air is blown directly onto the sensor or if the supply air does not have a chance to mix with the room air before it is drawn into the return airstream.

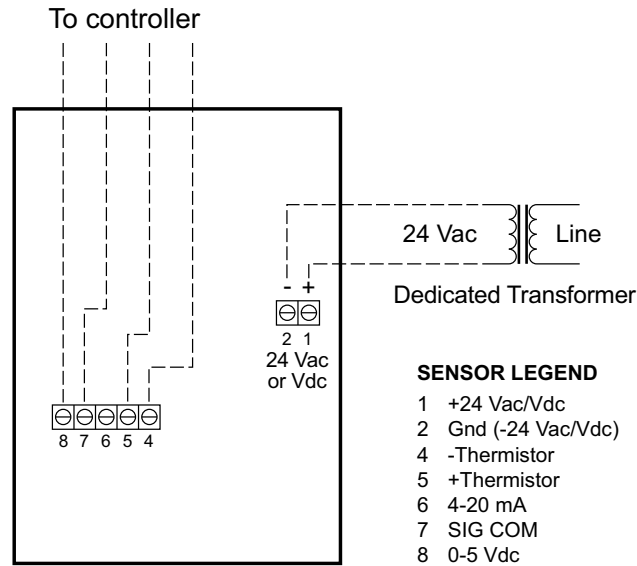


Fig. 68 - Indoor/Outdoor Air Quality (CO₂) Sensor (33ZCSPTCO2-01 or 33ZCSPTCO2LCD-01) Typical Wiring Diagram

Wiring the Indoor Air Quality Sensor: For each sensor, use two 2-conductor 18 AWG (American Wire Gage) twisted-pair cables (unshielded) to connect the separate isolated 24 vac power source to the sensor and to connect the sensor to the control board terminals.

To connect the sensor to the control, identify the positive (4 to 20 mA) and ground (SIG COM) terminals on the sensor. See Fig. 68. Connect the 4-20 mA terminal to RTU Open J4-2 and connect the SIG COM terminal to RTU Open J4-3. See Fig. 69.

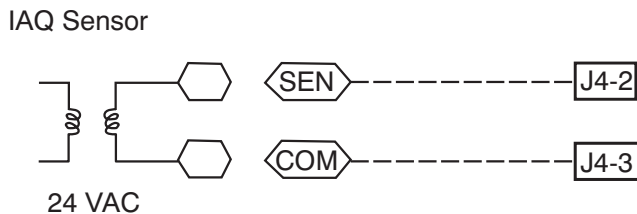


Fig. 69 - RTU Open / Indoor CO₂ Sensor (33ZCSPTCO2-01 or 33ZCSPTCO2LCD-01) Connections

Outdoor Air Quality Sensor (PNO 33ZCSPTCO2-01 or 33ZCSPTCO2LCD-01 plus weatherproof enclosure —

The outdoor air CO₂ sensor is designed to monitor carbon dioxide (CO₂) levels in the outside ventilation air and interface with the ventilation damper in an HVAC system.

The OAQ sensor is packaged with an outdoor cover. See Fig. 53. The outdoor air CO₂ sensor must be located in the economizer outside air hood.

Wiring the Outdoor Air CO₂ Sensor: A dedicated power supply is required for this sensor. A two-wire cable is required to wire the dedicated power supply for the sensor. The two wires should be connected to the power supply and terminals 1 and 2.

To connect the sensor to the control, identify the positive (4 to 20 mA) and ground (SIG COM) terminals on the OAQ sensor. See Fig. 68. Connect the 4 to 20 mA terminal to RTU Open J4-5. Connect the SIG COM terminal to RTU Open J4-6.

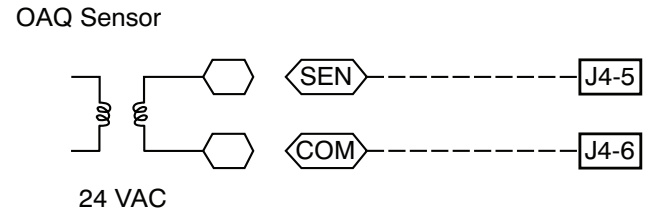


Fig. 70 - RTU Open / Outdoor CO₂ Sensor (33ZCSPTCO2-01 or 33ZCSPTCO2LCD-01) Connections

Space Relative Humidity Sensor or Humidistat —

Humidi-MiZer® Control Wiring: In units equipped with the Humidi-MiZer option there are two loose wires loose in the control box (one PNK and one PNK/BLK) used to control the dehumidification function of the unit. These wires are meant to be tied to a space humidistat or thermidstat on an electromechanical unit. On RTU Open equipped units these wires must be connected to J11-7 & 8 to allow the Open board to operate the dehumidification function for the unit. Disconnect the J11 Phoenix style connector from the board and use the plug screws to secure the wires as follows: secure the PNK/BLK wires at pin 7 and the PNK wires at pin 8, and then reconnect the plug to the board at J11.

Relative Humidity Sensors (Space or Duct Mounted): The accessory space humidity sensor (33ZCSENSRH-01) or duct humidity sensor (33ZCSENDRH-01) is used to measure the relative humidity of air within the space or return air duct. The RH reading is used to control the Humidi-MiZer option of the rooftop unit. For wiring distances up to 500 ft (152 m), use a 3-conductor, 18 or 20 AWG shielded cable. The shield must be removed from the sensor end of the cable and grounded at the unit end. The current loop power for sensor is provided by the RTU Open controller as 24vdc. Refer to the instructions supplied with the RH sensor for the electrical requirements and terminal locations. RTU Open configurations must be changed after adding an RH sensor. See Fig. 71 and 72 for typical RH sensor wiring.

- J4-1 or J4-4 = 24vdc loop power
- J4-2 or J4-5 = 4-20mA signal input

NOTE: The factory default for dehumidification control is normally open humidistat.

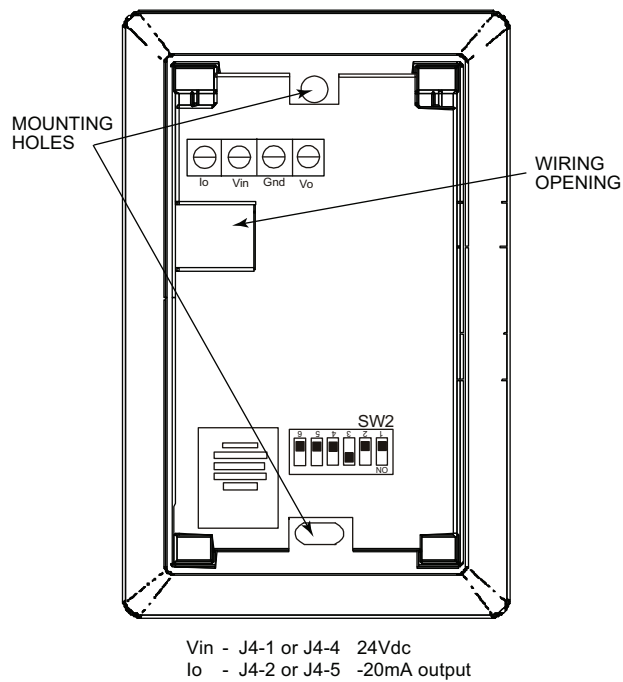


Fig. 71 - Space Relative Humidity Sensor Typical Wiring

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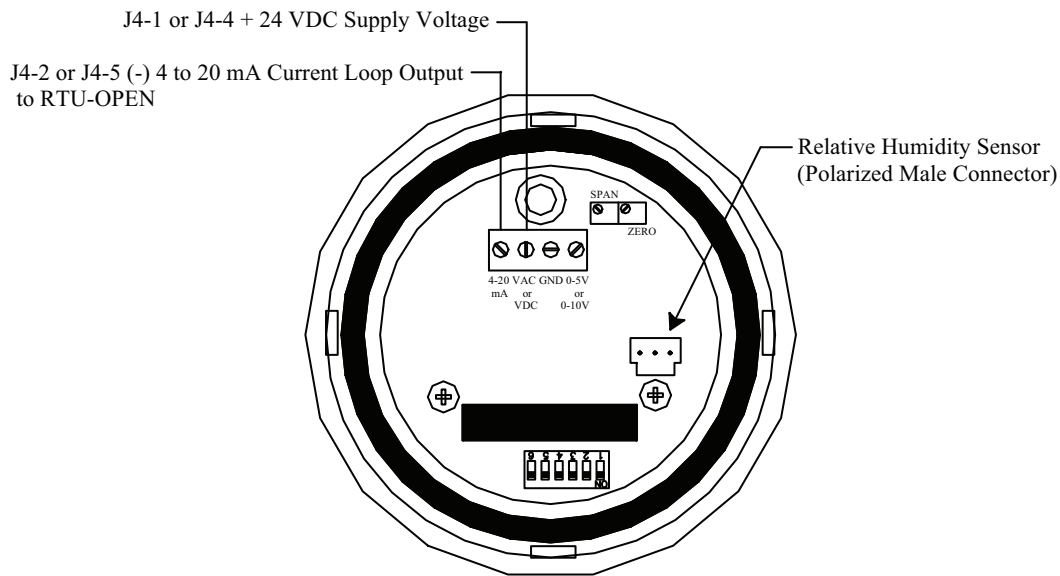


Fig. 72 - Duct Relative Humidity Sensor Typical Wiring

C10839

Humidistat: The accessory humidistat provides the RTU Open insight to the relative humidity in the space. The humidistat reads the RH level in the space and compares it to its setpoint to operate a dry contact. The humidistat is a dedicated input on the configurable input 9 and tells the RTU Open when the RH level is HIGH or LOW. The normal condition for humidity is LOW. A normally open humidistat is the factory default control for the Humidi-MiZer[®] option.

To wire in the field:

- J5-8 = 24 VAC source for dry contact
- J5-7 = Signal input

Smoke Detector/Fire Shutdown (FSD) —

On 50HC units equipped with factory-installed Smoke Detector(s), the smoke detector controller implements the unit shutdown through its NC contact set connected to the unit's CTB input. The FSD function is initiated via the smoke detector's Alarm NO contact set. The RTU Open controller communicates the smoke detector's tripped status to the BAS building control. See Fig. 63 or Fig. 64 (RTU Open System Control wiring schematics).

The Fire Shutdown Switch configuration, **MENU→Config→Inputs→input 5**, identifies the normally open status of this input when there is no fire alarm.

Connecting Discrete Inputs —

Filter Status: The filter status accessory is a field-installed accessory. This accessory detects plugged filters. When installing this accessory, the unit must be configured for filter status by setting **MENU→Config→Inputs→input 3, 5, 8, or 9** to Filter Status and normally open (N/O) or normally closed (N/C). Input 8 or 9 is recommended for easy of installation. Refer to Fig. 62 and Fig. 63 or Fig. 64 for wire terminations at J5.

Fan Status: The fan status accessory is a field-installed accessory. This accessory detects when the indoor fan is blowing air. When installing this accessory, the unit must be configured for fan status by setting **MENU→Config→Inputs→input 3, 5, 8, or 9** to Fan Status and normally open (N/O) or normally closed (N/C). Input 8 or 9 is recommended for easy of installation. Refer to Fig. 62 and Fig. 63 or Fig. 64 for wire terminations at J5.

Remote Occupancy: The remote occupancy accessory is a field-installed accessory. This accessory overrides the unoccupied mode and puts the unit in occupied mode. When installing this accessory, the unit must be configured for remote occupancy by setting **MENU→Config→Inputs→input 3, 5, 8, or 9** to Remote Occupancy and normally open (N/O) or normally closed (N/C).

Also set **MENU→Schedules→occupancy source** to DI on/off. Input 8 or 9 is recommended for easy of installation. Refer to Fig. 62 and Table 8 for wire terminations at J5.

Power Exhaust (output): The relay used by the RTU Open board to control power exhaust is a dry contact which means it does not have 24vac. This 24vac must be

connected to the relay to allow it to operate the power exhaust relay in the PE accessory. A 24vac source must be provided to J11-2 on the RTU Open control board. This can be provided by the unit's transformer from various sources. The "R" terminal on the unit's low voltage terminal board (LVTB) is a logical source. Refer to Fig. 62 and Fig. 63 or Fig. 64 for wire terminations at J11.

Communication Wiring - Protocols

General —

Protocols are the communication languages spoken by control devices. The main purpose of a protocol is to communicate information in the most efficient method possible. Different protocols exist to provide different kinds of information for different applications. In the BAS application, many different protocols are used, depending on manufacturer. Protocols do not change the function of a controller; just make the front end user different.

The RTU Open can be set to communicate on four different protocols: BACnet, Modbus, N2, and LonWorks. Switch 3 (SW3) on the board is used to set protocol and baud rate. Switches 1 and 2 (SW1 and SW2) are used to set the board's network address. See Fig. 73 and 74 for protocol switch settings and address switches. The 3rd party connection to the RTU Open is through plug J19. See Fig. 75 for wiring.

NOTE: Power must be cycled after changing the SW1-3 switch settings.

Refer to the *RTU Open Controller Integration Guide* (Catalog No. 11-808-428-01) for more detailed information on protocols, 3rd party wiring, and networking.

SW3 Protocol Selection

PROTOCOL	DS8	DS7	DS6	DS5	DS4	DS3	DS2	DS1
BACnet MS/TP (Master)	Unused	OFF	OFF	OFF	ON	OFF	Select Baud	Select Baud
Modbus (Slave)	Unused	OFF	OFF	ON	ON	OFF	Select Baud	Select Baud
N2 (Slave)	Unused	OFF	OFF	OFF	ON	ON	OFF	OFF
LonWorks	Unused	ON	ON	OFF	ON	OFF	OFF	OFF

NOTE:

DS = Dip Switch

BACnet MS/TP SW3 example shown

Baud Rate Selections

BAUD RATE	DS2	DS1
9600	OFF	OFF
19,200	ON	OFF
38,400	OFF	ON
76,800	ON	ON

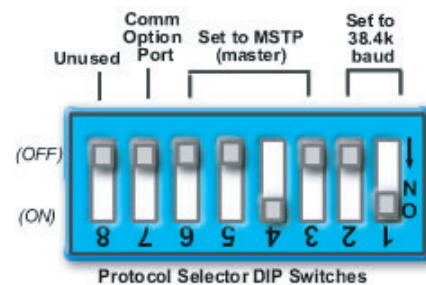


Fig. 73 - RTU Open SW3 Dip Switch Settings

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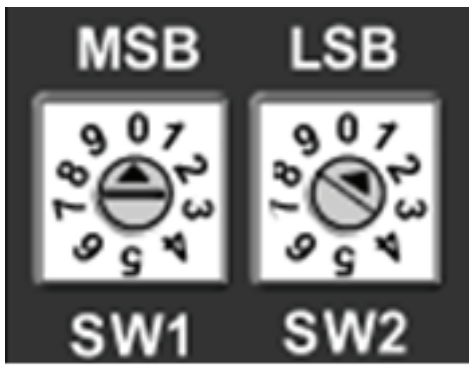


Fig. 74 - RTU Open Address Switches

C10815

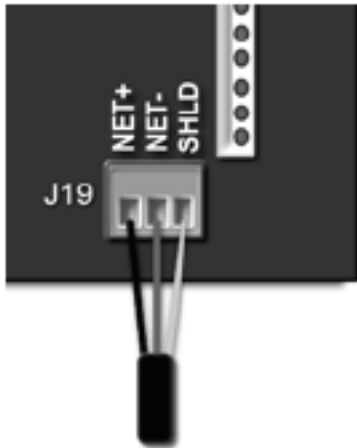


Fig. 75 - Network Wiring

C10816

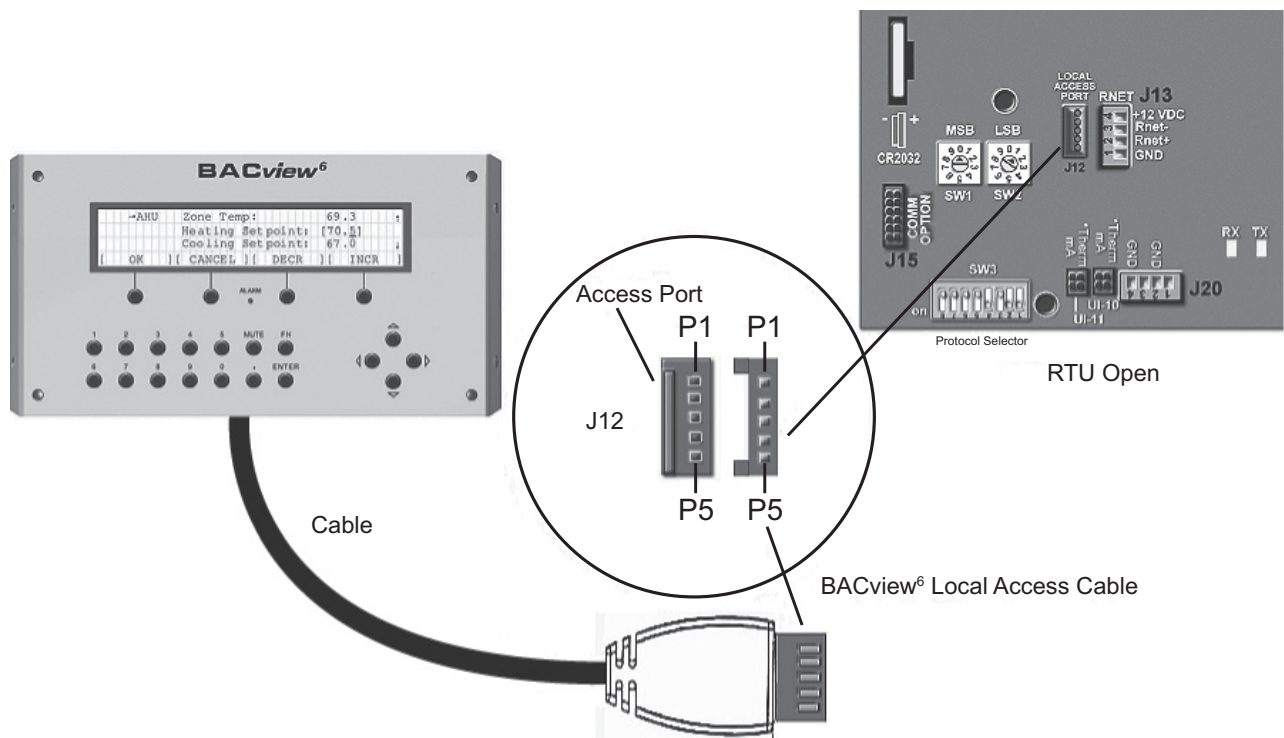


Fig. 76 - BACview⁶ Handheld Connections

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Local Access

BACview⁶ Handheld: The BACview⁶ is a keypad/display interface used to connect to the RTU Open to access the control information, read sensor values, and test the RTU, see Fig. 76. This is an accessory interface that does not come with the RTU Open controller and can only be used at the unit. Connect the BACview⁶ to the RTU Open J12 local access port. There are two password protected levels in the display (User and Admin). The user password is defaulted to 0000 but can be changed. The Admin password is 1111 and cannot be changed. There is a 10 minute auto logout if a screen is idle. See Form 48-50HCTQ-02T (or later), Appendix A for navigation and screen content.

Virtual BACview: Virtual BACview is a freeware computer program that functions as the BACview⁶ Handheld. The USB Link interface (USB-L) is required to connect a computer to the RTU Open board. The link cable connects a USB port to the J12 local access port. This program functions and operates identical to the handheld.

RTU Open Troubleshooting —

Communication LEDs: The LEDs indicate if the controller is speaking to the devices on the network. The LEDs should reflect communication traffic based on the baud rate set. The higher the baud rate the more solid the LEDs will appear. See Table 9.

NOTE: Refer to Catalog No. 48-50HCTQ-02T (or later) for complete configuration of RTU Open, operating sequences and troubleshooting information. Refer to *RTU Open Controller Integration Guide* (Catalog No. 11-808-428-01) for details on configuration and troubleshooting of connected networks. Have a copy of these manuals available at unit start-up.

Table 9 – LEDs
The LEDs on the RTU Open show the status of certain functions

If this LED is on...	Status is...
Power	RTU Open has power
Rx	RTU Open is receiving data from the network segment
Tx	RTU Open is transmitting data over the network segment
DO#	The digital output is active

The **Run** and **Error** LEDs indicate control module and network status

If Run LED shows...	And Error LED shows...	Status is...
2 flashes per second	Off	Normal
2 flashes per second	2 flashes, alternating with Run LED	Five minute auto–restart delay after system error
2 flashes per second	3 flashes, then off	Control module has just been formatted
2 flashes per second	4 flashes, then pause	Two or more devices on this network have the same ARC156 network address
2 flashes per second	On	Exec halted after frequent system errors or control programs halted
5 flashes per second	On	Exec start–up aborted, Boot is running
5 flashes per second	Off	Firmware transfer in progress, Boot is running
7 flashes per second	7 flashes per second, alternating with Run LED	Ten second recovery period after brownout
14 flashes per second	14 flashes per second, alternating with Run LED	Brownout
On	On	Failure. Try the following solutions: • Turn RTU Open off, then on. • Format RTU Open. • Download memory to RTU Open. • Replace RTU Open.

Outdoor Air Enthalpy Control (PNO 33CSENTHSW)

The enthalpy control (33CSENTHSW) is available as a field-installed accessory to be used with the EconoMi\$er2 damper system. The outdoor air enthalpy sensor is part of the enthalpy control. (The separate field-installed accessory return air enthalpy sensor (33CSENTSEN) is required for differential enthalpy control. See Fig. 77.)

Locate the enthalpy control in the economizer next to the Actuator Motor. Locate two GRA leads in the factory harness and connect the gray lead labeled “ESL” to the terminal labeled “LOW”. See Fig. 77. Connect the enthalpy control power input terminals to economizer actuator power leads RED (connect to 24V) and BLK (connect to GND).

The outdoor enthalpy changeover setpoint is set at the enthalpy controller.

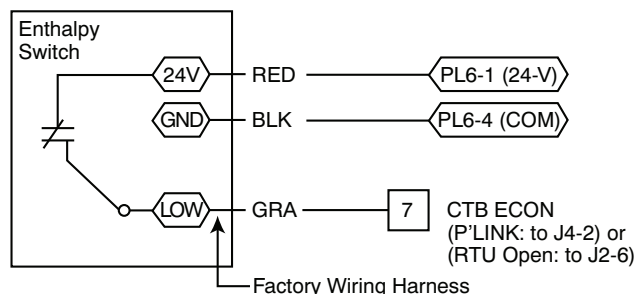


Fig. 77 - Enthalpy Switch (33CSENTHSW) Connections

Differential Enthalpy Control —

Differential enthalpy control is provided by sensing and comparing the outside air and return air enthalpy conditions. Install the outdoor air enthalpy control as described above. Add and install a return air enthalpy sensor.

Return Air Enthalpy Sensor —

Mount the return-air enthalpy sensor (33CSENTSEN) in the return-air section of the economizer. The return air sensor is wired to the enthalpy controller (33CSENTHSW). See Fig. 78.

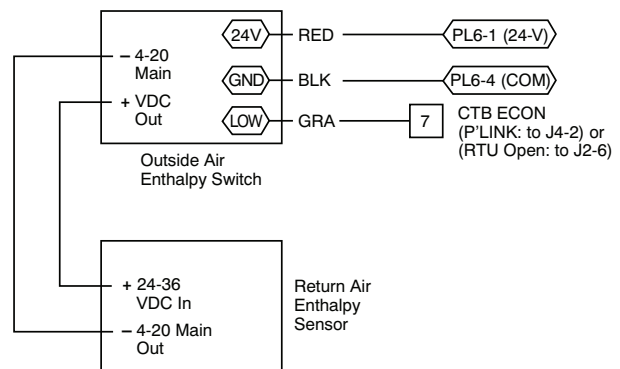


Fig. 78 - Outside and Return Air Enthalpy Sensor Wiring

C11161

C11160

To wire the return air enthalpy sensor, perform the following:

1. Use a 2-conductor, 18 or 20 AWG, twisted pair cable to connect the return air enthalpy sensor to the enthalpy controller.
2. Connect the field-supplied RED wire to (+) spade connector on the return air enthalpy sensor and the (+) terminal on the enthalpy controller. Connect the BLK wire to (-) spade connector on the return air enthalpy sensor and the (-) terminal on the enthalpy controller.

Smoke Detectors

Smoke detectors are available as factory-installed options on 50HC 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. All components necessary for operation are factory-provided and mounted. The unit is factory-configured for immediate smoke detector shutdown operation; additional wiring or modifications to unit terminal board may be necessary to complete the unit and smoke detector configuration to meet project requirements.

Units equipped with factory-optional Return Air smoke detectors require a relocation of the sensor module at unit installation. See Fig. 79 for the as shipped location.

Completing Installation of Return Air Smoke Sensor:

1. Unscrew the two screws holding the Return Air Smoke Detector assembly. See Fig. 80, Step 1. Save the screws.
2. Turn the assembly 90 and then rotate end to end. Make sure that the elbow fitting is pointing down. See Fig. 80, Step 2.
3. Screw the sensor and detector plate into its operating position using screws from Step 1. See Fig. 80, Step 3.
4. Connect the flexible tube on the sampling inlet to the sampling tube on the basepan.

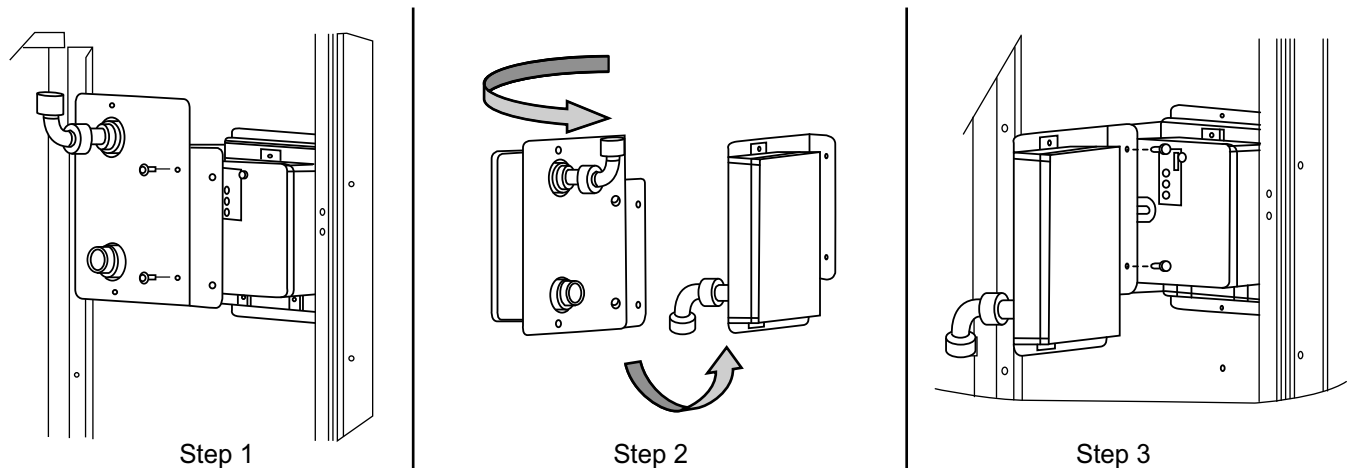
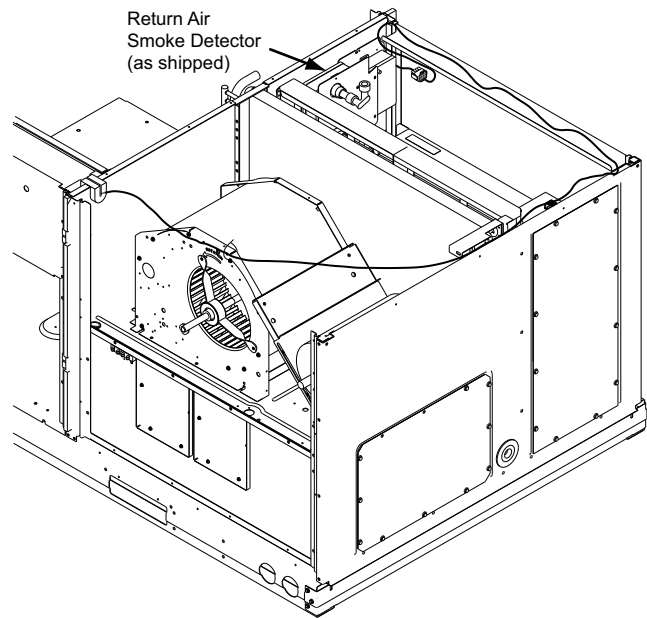


Fig. 80 - Completing Installation of Return Air Smoke Sensor



C12282

Fig. 79 - Return Air Smoke Detector, Shipping Position

Additional Application Data —

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

50HC

C12283

ELECTRICAL DATA FOR UNITS PRODUCED ON OR AFTER JULY 30, 2012

NOTE: Check the serial number of unit to verify production date.

To confirm the date of manufacture, locate the unit nameplate and check the first four digits of the Serial Number. If the number listed in the first 4 digits of the Serial Number is 3112 or higher, the unit was produced on or after July 30, 2012.

Position:	1	2	3	4	5	6	7	8	9	10
Example:	3	1	1	2	U	1	2	3	4	5

Week of manufacture
(fiscal calendar)

Sequence number

Year of manufacture
("12" = 2012)

Manufacturing location

C12562A

Legend and Notes for Tables 10 — 17

LEGEND:

BRKR	–	Circuit breaker
CO	–	Convenient outlet
DISC	–	Disconnect
FLA	–	Full load amps
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.

$$(AB) 227 - 224 = 3 \text{ v}$$

$$(BC) 231 - 227 = 4 \text{ v}$$

$$(AC) 227 - 226 = 1 \text{ v}$$

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{4}{227} \\ &= 1.76\% \end{aligned}$$

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.

Table 10 – Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced On or After July 30, 2012

UNIT	NO M, V-Ph-HZ	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
		CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ PE. (pwrd fr/unit)			NO PE.			w/ PE. (pwrd fr/unit)						
					MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	
STD		NONE	—	—	32/32	50/50	31/31	165	36/36	50/50	36/35	169	37/36	41/41	50/50	41/41	174			
		264A	4.9/6.5	13.6/15.6	32/32	50/50	31/31	165/165	36/36	50/50	36/35	169/169	37/36	41/41	50/50	41/41	174/174			
		117A	7.8/10.4	21.7/25.0	34/38	50/50	31/34	165/165	39/43	50/50	36/39	169/169	37/40	45/49	50/50	41/44	174/174			
		110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	165/165	53/59	60/60	49/54	169/169	50/55	59/65	60/70	54/60	174/174			
		117A+117A	15.8/21.0	43.8/50.5	62/70	70/70	56/64	165/165	66/74	70/80	61/68	169/169	62/69	72/80	80/90	66/74	174/174			
		110A+117A	19.9/26.5	55.2/63.8	76/86	80/90	69/79	165/165	81/91	90/100	74/83	169/169	75/85	87/97	90/100	79/89	174/174			
MED	208/230-3-60	NONE	—	—	36/36	50/50	35/35	201	39/39	50/50	39/39	205	40/40	44/44	60/60	45/45	210			
		264A	4.9/6.5	13.6/15.6	36/36	50/50	35/35	201/201	39/39	50/50	39/39	205/205	40/40	44/44	60/60	45/45	210/210			
		117A	7.8/10.4	21.7/25.0	38/42	50/50	35/38	201/201	43/47	50/50	39/43	205/205	40/44	49/53	60/60	45/48	210/210			
		110A	12.0/16.0	33.4/38.5	53/59	60/60	48/54	201/201	57/64	60/70	52/58	205/205	59/65	63/70	70/70	58/64	210/210			
		117A+117A	15.8/21.0	43.8/50.5	66/74	70/80	60/68	201/201	70/79	80/80	64/72	205/205	72/80	76/85	80/90	70/78	210/210			
		110A+117A	19.9/26.5	55.2/63.8	80/91	80/100	73/83	201/201	85/95	90/100	78/87	205/205	86/97	91/101	100/110	83/93	210/210			
HIGH		NONE	—	—	41/40	50/50	41/40	217	45/44	60/60	45/44	221	46/45	49/49	60/60	51/50	226			
		264A	4.9/6.5	13.6/15.6	41/40	50/50	41/40	217/217	45/44	60/60	45/44	221/221	46/45	49/49	60/60	51/50	226/226			
		117A	7.8/10.4	21.7/25.0	45/48	50/50	41/43	217/217	49/52	60/60	45/48	221/221	46/49	55/58	60/60	51/53	226/226			
		110A	12.0/16.0	33.4/38.5	59/64	60/70	54/59	217/217	64/69	70/70	58/63	221/221	65/70	70/75	70/80	64/69	226/226			
		117A+117A	15.8/21.0	43.8/50.5	72/79	80/80	66/73	217/217	77/84	80/90	70/77	221/221	78/85	83/90	90/90	76/83	226/226			
		110A+117A	19.9/26.5	55.2/63.8	86/96	90/100	79/88	217/217	91/101	100/110	83/92	221/221	92/102	97/107	100/110	89/98	226/226			
STD		NONE	—	—	17	25	16	84	18	25	18	86	19	21	25	20	88			
		265A	6.0	7.2	17	25	16	84	18	25	18	86	19	21	25	20	88			
		266A	11.5	13.8	21	25	19	84	23	25	21	86	24	26	30	23	88			
		267A	14.0	16.8	25	25	22	84	27	30	24	86	27	30	30	27	88			
		268A	23.0	27.7	38	40	35	84	40	45	37	86	41	43	45	39	88			
		269A	25.5	30.7	42	45	38	84	44	50	40	86	45	47	50	43	88			
MED	460-3-60	NONE	—	—	18	25	18	102	20	25	20	104	21	22	30	22	106			
		265A	6.0	7.2	18	25	18	102	20	25	20	104	21	22	30	22	106			
		266A	11.5	13.8	23	25	21	102	25	25	23	104	26	28	30	25	106			
		267A	14.0	16.8	27	30	24	102	29	30	26	104	29	32	35	29	106			
		268A	23.0	27.7	40	40	37	102	43	45	39	104	43	45	45	41	106			
		269A	25.5	30.7	44	45	40	102	46	50	42	104	47	49	50	45	106			
HIGH		NONE	—	—	21	25	20	110	22	30	22	112	23	25	30	25	114			
		265A	6.0	7.2	21	25	20	110	22	30	22	112	23	25	30	25	114			
		266A	11.5	13.8	26	30	23	110	28	30	25	112	28	31	35	28	114			
		267A	14.0	16.8	29	30	27	110	32	35	29	112	32	34	35	31	114			
		268A	23.0	27.7	43	45	39	110	45	45	41	112	46	48	50	44	114			
		269A	25.5	30.7	47	50	43	110	49	50	45	112	50	52	60	47	114			
STD	575-3-60	NONE	—	—	13	15	12	61	16	20	16	65	14	18	20	18	67			
		118A	17.0	20.4	28	30	25	61	33	35	30	65	30	32	35	32	67			
		298A	25.7	25.8	35	35	32	61	39	40	36	65	37	42	45	38	67			
		NONE	—	—	14	20	13	76	18	20	17	80	15	19	25	19	82			
		118A	17.0	20.4	29	30	27	76	34	35	31	80	32	36	40	33	82			
		298A	25.7	25.8	36	40	33	76	41	45	37	80	35	43	45	39	82			
HIGH		NONE	—	—	17	20	16	90	20	25	21	94	18	22	25	23	96			
		118A	17.0	20.4	33	35	30	90	38	40	34	94	32	36	40	36	96			
		298A	25.7	25.8	40	40	36	90	44	45	40	94	42	47	50	42	96			
		NONE	—	—	17	20	16	90	20	25	21	94	18	22	25	23	96			
		118A	17.0	20.4	33	35	30	90	38	40	34	94	32	36	40	36	96			
		298A	25.7	25.8	40	40	36	90	44	45	40	94	42	47	50	42	96			

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 10 Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced On or After July 30, 2012 (cont)

UNIT	NO M-V-Ph-HZ	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ PE. (pwrd fr/unit)			NO PE.			w/ PE. (pwrd fr/unit)		
					MCA	FUSE or BRKR	DISC. SIZE	MCA	FUSE or BRKR	DISC. SIZE	MCA	FUSE or BRKR	DISC. SIZE	MCA	FUSE or BRKR	DISC. SIZE
							FLA	LRA					FLA	LRA		FLA
50HC+D08	STD	NONE	—	—	39/39	50/50	41/40	208	43/43	50/50	45/45	212	44/44	46/46	213	48/48
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/40	208/208	43/43	50/50	45/45	212/212	44/44	46/46	213/213	48/48
		110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	208/208	53/59	60/60	49/54	212/212	55/61	60/70	50/55	59/65
		111A	18.6/24.8	51.7/59.7	72/81	80/90	65/74	208/208	76/86	80/90	70/79	212/212	78/87	80/90	71/80	82/92
		112A	24.0/32.0	66.7/77.0	90/103	90/110	83/94	208/208	95/108	100/110	87/99	212/212	96/109	100/110	88/100	93/104
208/230-3-60	MED	112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	208/208	122/139	125/150	112/127	212/212	123/140	125/150	213/213	128/145
		NONE	—	—	41/41	50/50	43/42	229	45/45	50/50	47/47	233	46/46	50/50	48/48	50/49
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/42	229/229	45/45	50/50	47/47	233/233	46/46	50/50	48/48	50/51
		110A	12.0/16.0	33.4/38.5	51/57	60/60	46/52	229/229	56/62	60/70	51/56	233/233	57/63	60/70	52/58	62/68
		111A	18.6/24.8	51.7/59.7	74/83	80/90	67/76	229/229	78/88	80/90	72/81	233/233	80/89	80/90	73/82	84/94
460-3-60	HIGH	112A	24.0/32.0	66.7/77.0	92/105	100/110	85/96	229/229	97/110	100/110	89/101	233/233	98/111	100/125	110/125	103/116
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	229/229	124/141	125/150	114/129	233/233	126/142	150/150	234/234	130/147
		NONE	—	—	45	50	47	258	48	60	51	262	49	60	52	53
		117A	7.8/10.4	21.7/25.0	45/45	50/50	47/47	258/258	48/50	60/60	51/51	262/262	49/51	60/60	52/52	53/56
		110A	12.0/16.0	33.4/38.5	55/62	60/70	51/56	258/258	60/67	60/70	55/61	262/262	61/68	70/70	56/62	66/73
575-3-60	STD	111A	18.6/24.8	51.7/59.7	78/88	80/90	72/81	258/258	83/93	90/100	76/85	262/262	84/94	90/100	77/86	89/99
		112A	24.0/32.0	66.7/77.0	97/110	100/110	89/101	258/258	102/115	110/125	93/105	262/262	103/116	110/125	94/106	108/121
		112A+116A	41.7	50.2	124/141	125/150	114/129	258/258	129/146	150/150	118/134	262/262	130/147	150/150	263/263	135/152
		NONE	—	—	18	20	19	104	20	25	21	106	20	25	21	22
		116A	13.9	16.7	24	25	22	104	27	30	24	106	27	30	25	29
575-3-60	MED	113A	16.5	19.8	28	30	26	104	31	35	28	106	31	35	29	34
		114A	27.8	33.4	45	45	41	104	48	50	43	106	48	50	44	50
		115A	33.0	39.7	53	60	49	104	55	51	51	106	56	60	51	58
		114A+116A	41.7	50.2	66	70	61	104	69	70	63	106	69	70	63	71
		NONE	—	—	19	25	20	114	21	25	22	116	21	25	22	23
575-3-60	HIGH	116A	13.9	16.7	26	30	23	114	28	30	25	116	28	30	26	31
		113A	16.5	19.8	29	30	27	114	32	35	29	116	32	35	29	34
		114A	27.8	33.4	46	50	42	114	49	50	44	116	49	50	45	51
		115A	33.0	39.7	54	60	50	114	57	60	52	116	57	60	52	59
		114A+116A	41.7	50.2	67	70	62	114	70	70	64	116	70	70	64	72
575-3-60	STD	NONE	—	—	21	25	22	129	23	25	24	131	23	25	24	25
		116A	13.9	16.7	28	30	25	129	30	30	27	131	31	35	28	33
		113A	16.5	19.8	32	35	29	129	34	35	31	131	35	35	31	33
		114A	27.8	33.4	49	50	45	129	51	60	47	131	52	60	47	54
		115A	33.0	39.7	57	60	52	129	59	60	54	131	59	60	54	62
575-3-60	MED	114A+116A	41.7	50.2	70	70	64	129	72	80	66	131	73	80	66	75
		NONE	—	—	13	15	13	77	17	20	17	81	14	15	15	18
		118A	17.0	20.4	28	30	25	77	33	35	30	81	30	30	27	35
		119A	34.0	40.9	54	60	49	77	58	60	53	81	56	60	51	60
		NONE	—	—	13	15	13	81	17	20	18	85	15	20	15	19
575-3-60	HIGH	118A	17.0	20.4	28	30	26	81	33	35	31	85	31	35	28	33
		119A	34.0	40.9	54	60	49	81	59	60	54	85	56	60	51	61
		NONE	—	—	14	15	14	92	18	20	19	96	16	20	16	19
		118A	17.0	20.4	29	30	27	92	34	35	31	96	32	35	29	36
		119A	34.0	40.9	55	60	50	92	60	60	55	96	57	60	52	62

See "Legend and Notes for Tables 10 — 17" on page 48.

able 10 Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced On or After July 30, 2012 (cont)

Table 10 Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.										
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)							
					MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA		
50HC*D11	STD	NONE	—	—	51/50	60/60	53/53	284	54/54	60/60	57/57	288	55/55	60/60	59/58	289	59/59	70/70	63/63	293	
		117A	7.8/10.4	21.7/25.0	51/50	60/60	53/53	284/284	54/54	60/60	57/57	288/288	288/288	55/55	60/60	289/289	59/59	70/70	63/63	293/293	
		110A	12.0/16.0	33.4/38.5	51/57	60/60	53/53	284/284	56/62	60/70	57/57	288/288	288/288	57/63	60/70	289/289	62/68	70/70	63/63	293/293	
		112A	24.0/32.0	66.7/77.0	92/105	100/110	85/96	284/284	97/110	100/110	89/101	288/288	288/288	98/111	100/125	90/102	289/289	103/116	110/125	95/106	293/293
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	284/284	124/141	125/150	114/129	288/288	288/288	126/142	150/150	115/131	289/289	130/147	150/150	119/135	293/293
	112A+110A	37.6/50.0	104.2/120.3	139/129	150/150	128/146	284/284	144/134	150/150	132/150	288/288	288/288	145/135	150/150	133/152	289/289	150/140	150/150	138/156	293/293	
	NONE	—	—	54	60	57	313	58	70	62	317	317	59	70	63	318	63	70	67	322	
	117A	7.8/10.4	21.7/25.0	54/54	60/60	57/57	313/313	58/58	70/70	62/62	317/317	317/317	59/59	70/70	63/63	318/318	63/63	70/70	67/67	322/322	
	110A	12.0/16.0	33.4/38.5	55/62	60/70	57/57	313/313	60/67	70/70	62/62	317/317	317/317	61/68	70/70	63/63	318/318	66/73	70/80	67/67	322/322	
	112A	24.0/32.0	66.7/77.0	97/110	100/110	89/101	313/313	102/115	110/125	93/105	317/317	317/317	103/116	110/125	94/106	318/318	108/121	110/125	99/111	322/322	
208/230-3-60	MED	112A+117A	31.8/42.4	88.4/102.0	124/141	125/150	114/129	313/313	129/146	150/150	118/134	317/317	130/147	150/150	119/135	318/318	135/152	150/175	124/139	322/322	
		112A+110A	37.6/50.0	104.2/120.3	144/134	150/150	132/151	313/313	149/139	150/150	136/155	317/317	150/140	150/150	138/156	318/318	155/145	175/175	142/160	322/322	
		NONE	—	—	57/56	70/60	61/60	315	61/60	70/70	65/64	319	62/61	70/70	66/65	320	66/65	80/80	71/70	324	
		117A	7.8/10.4	21.7/25.0	57/56	70/60	61/60	315/315	61/60	70/70	65/64	319/319	62/61	70/70	66/65	320/320	66/65	80/80	71/70	324/324	
		110A	12.0/16.0	33.4/38.5	59/64	70/70	61/60	315/315	64/69	70/70	65/64	319/319	65/70	70/70	66/65	320/320	70/75	80/80	71/70	324/324	
	112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	315/315	106/117	110/125	97/108	319/319	107/119	110/125	98/109	320/320	112/123	125/125	102/113	324/324		
	112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	315/315	133/149	150/150	122/136	319/319	134/150	150/150	123/137	320/320	139/155	150/175	127/142	324/324		
	112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	315/315	152/141	175/175	140/157	319/319	154/143	175/175	141/158	320/320	158/147	175/175	145/163	324/324		
	NONE	—	—	23	25	24	136	25	30	26	138	25	30	27	138	27	30	29	140		
	116A	13.9	16.7	26	30	24	136	28	30	26	138	28	30	27	138	31	35	29	140		
113A	16.5	19.8	29	30	27	136	32	35	29	138	32	35	29	138	34	35	31	140			
460-3-60	STD	115A	33.0	39.7	54	60	50	136	57	60	52	138	57	60	52	138	59	60	54	140	
		114A+116A	41.7	50.2	67	70	62	136	70	70	64	138	70	70	64	138	72	80	66	140	
		115A+113A	50.0	60.1	65	70	73	136	67	70	75	138	68	70	76	138	70	80	78	140	
		NONE	—	—	25	30	26	151	27	30	28	153	27	30	29	153	29	35	31	155	
		116A	13.9	16.7	28	30	26	151	30	30	28	153	31	35	29	153	33	35	31	155	
	113A	16.5	19.8	32	35	29	151	34	35	31	153	35	35	31	153	37	40	33	155		
	115A	33.0	39.7	57	60	52	151	59	60	54	153	59	60	54	153	62	70	56	155		
	114A+116A	41.7	50.2	70	70	64	151	72	80	66	153	73	80	66	153	75	80	68	155		
	115A+113A	50.0	60.1	67	80	75	151	69	80	77	153	70	80	78	153	72	80	80	155		
	NONE	—	—	26	30	28	152	28	30	30	154	28	30	30	154	30	35	32	156		
116A	13.9	16.7	29	30	28	152	32	35	30	154	32	35	30	154	34	35	32	156			
575-3-60	HIGH	113A	16.5	19.8	33	35	30	152	35	35	32	154	36	40	33	154	38	40	35	156	
		115A	33.0	39.7	58	60	53	152	60	60	55	154	61	70	56	154	63	70	58	156	
		114A+116A	41.7	50.2	71	80	65	152	73	80	67	154	74	80	68	154	76	80	70	156	
		115A+113A	50.0	60.1	69	80	76	152	71	80	79	154	71	80	79	154	74	80	81	156	
		NONE	—	—	18	20	18	95	21	25	23	99	19	25	20	97	23	25	24	101	
	118A	17.0	20.4	28	30	26	95	33	35	30	99	31	35	28	97	35	35	32	101		
	119A	34.0	40.9	54	60	49	95	59	60	54	99	56	60	51	97	61	70	56	101		
	118A+119A	51.0	61.3	64	70	73	95	69	80	77	99	66	70	75	97	71	80	79	101		
	NONE	—	—	18	20	19	106	22	25	23	110	20	25	21	108	24	25	25	112		
	118A	17.0	20.4	29	30	27	106	34	35	31	110	32	35	29	108	36	40	33	112		
119A	34.0	40.9	55	60	50	106	60	60	55	110	57	60	52	108	62	70	57	112			
118A+119A	51.0	61.3	65	70	74	106	70	80	78	110	67	70	76	108	72	80	80	112			
HIGH	NONE	—	—	21	25	22	120	25	30	27	124	23	25	24	122	27	30	29	126		
	118A	17.0	20.4	33	35	30	120	38	40	34	124	35	35	32	122	40	40	36	126		
	119A	34.0	40.9	59	60	53	120	63	70	58	124	61	70	55	122	65	70	60	126		
118A+119A	51.0	61.3	69	80	77	120	74	80	81	124	71	80	79	122	76	80	83	126			

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 10 Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER**A00	Nom (kW)	FLA	NO PE.			w/ P.E. (pwrdr fr/unit)			NO PE.			w/ P.E. (pwrdr fr/unit)		
					FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE
						FLA	LRA					FLA	LRA			
NO M, V-PH-HZ	STD	NONE	—	—	49/49	53/53	309	313	60/60	56/56	313	54/54	60/60	58/58	70/70	62/61
		117A	7.8/10.4	21.7/25.0	49/49	53/53	309/309	313/313	60/60	56/56	313/313	54/54	60/60	58/58	70/70	62/61
		110A	12.0/16.0	33.4/38.5	51/57	56/62	309/309	313/313	60/70	56/56	313/313	54/54	60/70	62/68	70/70	62/62
		112A	24.0/32.0	66.7/77.0	92/105	85/96	309/309	313/313	100/110	89/101	313/313	98/111	100/125	103/116	110/125	95/106
		112A+117A	31.8/42.4	88.4/102.0	120/136	110/125	309/309	313/313	125/150	114/129	313/313	126/142	150/150	130/147	150/150	119/135
208-230-3-60	MED	112A+110A	37.6/50.0	104.2/120.3	139/129	128/146	309/309	313/313	150/150	144/134	313/313	145/135	150/150	150/140	150/150	138/156
		NONE	—	—	53	56	338	342	70	60	342	58	70	62	70	66
		117A	7.8/10.4	21.7/25.0	53/53	56/56	338/338	342/342	70/70	60/60	342/342	58/58	70/70	62/62	70/70	66/66
		110A	12.0/16.0	33.4/38.5	55/62	56/62	338/338	342/342	70/70	60/61	342/342	61/61	70/70	66/73	70/80	66/66
		112A	24.0/32.0	66.7/77.0	97/110	89/101	338/338	342/342	110/125	93/105	342/342	103/116	110/125	108/121	110/125	99/111
460-3-60	HIGH	112A+117A	31.8/42.4	88.4/102.0	124/141	114/129	338/338	342/342	150/150	118/134	342/342	130/147	150/150	135/152	150/175	124/139
		112A+110A	37.6/50.0	104.2/120.3	144/134	132/151	338/338	342/342	150/150	136/155	342/342	150/140	150/150	155/145	175/175	142/160
		NONE	—	—	56/55	59/58	340	344	70/70	64/63	344	61/60	70/70	65/64	80/70	69/68
		117A	7.8/10.4	21.7/25.0	56/55	59/58	340/340	344/344	70/70	64/63	344/344	61/60	70/70	65/64	80/70	69/68
		110A	12.0/16.0	33.4/38.5	59/64	59/59	340/340	344/344	70/70	64/63	344/344	65/70	70/70	65/64	80/80	69/69
50HC*D12	STD	112A	24.0/32.0	66.7/77.0	101/113	92/103	340/340	344/344	110/125	97/108	344/344	107/119	110/125	112/123	125/125	102/113
		112A+117A	31.8/42.4	88.4/102.0	128/144	117/132	340/340	344/344	150/150	122/136	344/344	134/150	150/150	139/155	150/175	127/142
		112A+110A	37.6/50.0	104.2/120.3	148/137	135/153	340/340	344/344	175/175	140/157	344/344	154/143	175/175	158/147	175/175	145/163
		NONE	—	—	24	25	148	150	30	27	150	26	30	28	30	30
		116A	13.9	16.7	26	27	148	165	30	29	165	28	30	30	35	32
50HC*D12	MED	113A	16.5	19.8	29	27	148	165	30	29	165	31	35	33	35	32
		115A	33.0	39.7	57	52	163	165	60	54	165	59	80	62	70	56
		114A+116A	41.7	50.2	70	64	163	165	80	66	165	73	80	75	80	68
		115A+113A	50.0	60.1	67	75	163	165	80	77	165	70	80	72	80	80
		NONE	—	—	27	29	163	166	30	29	166	29	35	31	35	33
575-3-60	HIGH	116A	13.9	16.7	29	29	164	166	35	31	166	29	35	31	35	33
		113A	16.5	19.8	33	30	164	166	35	32	166	36	40	38	40	35
		115A	33.0	39.7	58	53	164	166	60	55	166	61	70	63	70	58
		114A+116A	41.7	50.2	71	65	164	166	80	67	166	74	80	76	80	70
		115A+113A	50.0	60.1	69	76	164	166	80	79	166	71	80	74	80	81
575-3-60	STD	NONE	—	—	18	18	105	109	25	23	109	19	25	23	25	25
		118A	17.0	20.4	28	26	105	109	35	30	109	31	35	35	35	32
		119A	34.0	40.9	54	49	105	109	60	54	109	56	60	61	70	56
		118A+119A	51.0	61.3	64	73	105	109	80	77	109	66	70	71	80	79
		NONE	—	—	19	19	116	120	25	24	120	20	25	24	30	26
575-3-60	MED	118A	17.0	20.4	29	27	116	120	35	31	120	32	35	36	40	33
		119A	34.0	40.9	55	50	116	120	60	55	120	57	60	62	70	57
		118A+119A	51.0	61.3	65	74	116	120	80	78	120	67	70	72	80	80
		NONE	—	—	21	22	130	134	25	27	134	23	25	27	30	29
		118A	17.0	20.4	33	30	130	134	35	34	134	35	35	40	40	36
575-3-60	HIGH	119A	34.0	40.9	59	53	130	134	60	58	134	61	70	65	70	60
		118A+119A	51.0	61.3	69	77	130	134	80	81	134	71	80	76	80	83

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 11 – Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced On or After July 30, 2012

UNIT	NO M. V-Ph-HZ	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		IFM TYPE	CRHEATER***A00	Nom (kW)	FLA	NO PE.				w/ PE. (pwrd fr/unit)				NO PE.				w/ PE. (pwrd fr/unit)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
						MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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See "Legend and Notes for Tables 10 — 17" on page 48.

Table 11 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ PE. (pwrdd fr/unit)			NO PE.			w/ PE. (pwrdd fr/unit)						
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA				
50HC*D08	STD	NONE	—	—	39/39	50/50	41/40	208	43/43	50/50	45/45	212	44/44	50/50	46/46	213	48/48	60/60	51/50	217
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/40	208/208	43/43	50/50	45/45	212/212	44/44	50/50	46/46	213/213	49/49	60/60	51/50	217/217
		110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	208/208	59/59	60/60	49/54	212/212	51/51	70/70	50/55	213/213	65/65	70/70	54/60	217/217
		111A	18.6/24.8	51.7/59.7	81/81	90/90	65/74	208/208	86/86	90/90	70/79	212/212	87/87	90/90	71/80	213/213	92/92	100/100	75/84	217/217
		112A	24.0/32.0	66.7/77.0	103/103	110/110	83/94	208/208	108/108	110/110	87/99	212/212	109/109	110/110	88/100	213/213	114/114	125/125	93/104	217/217
	112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	208/208	139/139	150/150	112/127	212/212	140/140	150/150	113/128	213/213	145/145	150/150	118/133	217/217	
	MED	NONE	—	—	41/41	50/50	43/42	229	45/45	50/50	47/47	233	46/46	50/50	48/48	234	50/50	60/60	53/52	238
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/42	229/229	45/45	50/50	47/47	233/233	46/46	50/50	48/48	234/234	51/51	60/60	53/52	238/238
		110A	12.0/16.0	33.4/38.5	57/57	60/60	46/52	229/229	62/62	70/70	51/56	233/233	63/63	70/70	52/58	234/234	68/68	70/70	56/62	238/238
		111A	18.6/24.8	51.7/59.7	83/83	90/90	67/76	229/229	88/88	90/90	72/81	233/233	89/89	90/90	73/82	234/234	94/94	100/100	77/86	238/238
112A		24.0/32.0	66.7/77.0	105/105	110/110	85/96	229/229	110/110	110/110	89/101	233/233	111/111	125/125	90/102	234/234	116/116	125/125	95/106	238/238	
112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125	229/229	141/141	150/150	114/129	233/233	142/142	150/150	115/131	234/234	147/147	150/150	119/135	238/238		
50HC*D08	HIGH	NONE	—	—	45	50	47	258	48	60	51	262	49	60	52	263	53	60	57	267
		117A	7.8/10.4	21.7/25.0	45/45	50/50	47/47	258/258	50/50	60/60	51/51	262/262	51/51	60/60	52/52	263/263	56/56	60/60	57/57	267/267
		110A	12.0/16.0	33.4/38.5	62/62	70/70	51/56	258/258	67/67	70/70	55/61	262/262	68/68	70/70	56/62	263/263	73/73	80/80	60/66	267/267
		111A	18.6/24.8	51.7/59.7	88/88	90/90	72/81	258/258	93/93	100/100	76/85	262/262	94/94	100/100	77/86	263/263	99/99	100/100	82/91	267/267
		112A	24.0/32.0	66.7/77.0	110/110	110/110	89/101	258/258	115/115	125/125	93/105	262/262	116/116	125/125	94/106	263/263	121/121	125/125	99/111	267/267
	112A+117A	31.8/42.4	88.4/102.0	141/141	150/150	114/129	258/258	146/146	150/150	118/134	262/262	147/147	150/150	119/135	263/263	152/152	175/175	124/139	267/267	
	STD	NONE	—	—	18	20	19	104	20	25	21	106	20	25	21	106	22	25	23	108
		116A	13.9	16.7	24	25	22	104	27	30	24	106	27	30	25	106	29	30	27	108
		113A	16.5	19.8	28	30	26	104	31	35	28	106	31	35	28	106	33	35	30	108
		114A	27.8	33.4	45	45	41	104	48	50	43	106	48	50	44	106	50	50	46	108
115A		33.0	39.7	53	60	49	104	55	60	51	106	56	60	51	106	58	60	53	108	
114A+116A	41.7	50.2	66	70	61	104	69	70	63	106	69	70	63	106	71	80	65	108		
460-3-60	MED	NONE	—	—	19	25	20	114	21	25	22	116	21	25	22	116	23	25	24	118
		116A	13.9	16.7	26	30	23	114	28	30	25	116	28	30	26	116	31	35	28	118
		113A	16.5	19.8	29	30	27	114	32	35	29	116	32	35	29	116	34	35	31	118
		114A	27.8	33.4	46	50	42	114	49	50	44	116	49	50	45	116	51	60	47	118
		115A	33.0	39.7	54	60	50	114	57	60	52	116	57	60	52	116	59	60	54	118
	114A+116A	41.7	50.2	67	70	62	114	70	70	64	116	70	70	64	116	72	80	66	118	
	STD	NONE	—	—	21	25	20	129	23	25	24	131	23	25	24	131	25	30	27	133
		116A	13.9	16.7	28	30	25	129	30	30	27	131	31	35	28	131	33	35	30	133
		113A	16.5	19.8	32	35	29	129	34	35	31	131	35	35	31	131	37	40	33	133
		114A	27.8	33.4	49	50	45	129	51	60	47	131	52	60	47	131	54	60	49	133
115A		33.0	39.7	57	60	52	129	59	60	54	131	59	60	54	131	62	70	56	133	
114A+116A	41.7	50.2	70	70	64	129	72	80	66	131	73	80	66	131	75	80	68	133		
575-3-60	STD	NONE	—	—	13	15	13	77	17	20	17	81	14	15	15	79	18	20	19	83
		118A	17.0	20.4	28	30	25	77	33	35	30	81	30	30	27	79	35	35	32	83
		119A	34.0	40.9	54	60	49	77	58	60	53	81	56	60	51	79	60	70	55	83
		NONE	—	—	13	15	13	81	17	20	18	85	15	20	15	83	19	20	20	87
		118A	17.0	20.4	28	30	26	81	33	35	30	85	31	35	28	83	35	35	32	87
	119A	34.0	40.9	54	60	49	81	59	60	54	85	56	60	51	83	61	70	56	87	
	MED	NONE	—	—	14	15	14	92	18	20	19	96	16	20	16	94	19	25	21	98
		118A	17.0	20.4	29	30	27	92	34	35	31	96	32	35	29	94	36	40	33	98
		119A	34.0	40.9	55	60	50	92	60	60	55	96	57	60	52	94	62	70	57	98
		NONE	—	—	13	15	13	77	17	20	17	81	14	15	15	79	18	20	19	83
118A		17.0	20.4	28	30	25	77	33	35	30	81	30	30	27	79	35	35	32	83	

See "Legend and Notes for Tables 10 — 17" on page 48.

50HC

Table 11 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced On or After July 30, 2012 (cont)

UNIT	NO M. V.-Ph-HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
			CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ PE. (pwrd fr/unit)			NO PE.			w/ PE. (pwrd fr/unit)		
						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
50HC+D09	208/230-3-60	STD	NONE	—	—	39/39	50/50	41/41	208	43/43	50/50	45/45	212	44/44	48/48	60/60	51/50
			117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	208/208	43/43	50/50	45/45	212/212	44/44	49/49	60/60	51/50
			110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	208/208	59/59	60/60	49/54	212/212	61/61	65/65	70/70	54/60
			111A	18.6/24.8	51.7/59.7	81/81	90/90	66/74	208/208	86/86	90/90	70/79	212/212	87/87	92/92	100/100	75/84
			112A	24.0/32.0	66.7/77.0	103/103	110/110	83/94	208/208	108/108	110/110	87/99	212/212	109/109	114/114	125/125	93/104
50HC+D09	208/230-3-60	MED	112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	208/208	139/139	150/150	112/127	212/212	140/140	145/145	150/150	118/133
			NONE	—	—	41/41	50/50	43/43	229	45/45	50/50	47/47	233	46/46	50/50	60/60	53/63
			117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	229/229	45/45	50/50	47/47	233/233	46/46	50/50	60/60	53/63
			110A	12.0/16.0	33.4/38.5	57/57	60/60	46/52	229/229	62/62	70/70	51/56	233/233	63/63	70/70	80/80	56/62
			111A	18.6/24.8	51.7/59.7	83/83	90/90	67/76	229/229	88/88	90/90	72/81	233/233	89/89	94/94	100/100	77/86
50HC+D09	208/230-3-60	HIGH	112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96	229/229	110/110	110/110	89/101	233/233	111/111	116/116	125/125	95/106
			112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125	229/229	141/141	150/150	114/129	233/233	142/142	147/147	150/150	119/135
			NONE	—	—	45	50	47	258	49	60	52	262	50	53	60	57
			117A	7.8/10.4	21.7/25.0	45/45	50/50	47/47	258/258	50/50	60/60	52/52	262/262	51/51	56/56	60/60	57/57
			110A	12.0/16.0	33.4/38.5	62/62	70/70	51/56	258/258	67/67	70/70	55/61	262/262	68/68	73/73	80/80	60/66
50HC+D09	460-3-60	STD	111A	18.6/24.8	51.7/59.7	88/88	90/90	72/81	258/258	93/93	100/100	76/85	262/262	94/94	99/99	100/100	82/91
			112A	24.0/32.0	66.7/77.0	110/110	110/110	89/101	258/258	115/115	125/125	93/105	262/262	116/116	121/121	125/125	99/111
			112A+117A	31.8/42.4	88.4/102.0	141/141	150/150	114/129	258/258	146/146	150/150	118/134	262/262	147/147	152/152	175/175	124/139
			NONE	—	—	19	20	19	104	20	25	21	106	21	23	25	24
			116A	13.9	16.7	24	25	22	104	27	30	24	106	27	29	30	27
50HC+D09	460-3-60	MED	113A	16.5	19.8	28	30	26	104	31	35	28	106	31	33	35	30
			114A	27.8	33.4	45	45	41	104	48	50	43	106	48	50	50	46
			115A	33.0	39.7	53	60	49	104	55	60	51	106	56	58	60	53
			114A+116A	41.7	50.2	66	70	61	104	69	70	63	106	69	71	80	65
			NONE	—	—	19	25	20	114	21	25	22	116	22	23	25	25
50HC+D09	460-3-60	HIGH	116A	13.9	16.7	26	30	23	114	28	30	25	116	28	31	35	28
			113A	16.5	19.8	29	30	27	114	32	35	29	116	32	34	35	31
			114A	27.8	33.4	46	50	42	114	49	50	44	116	49	51	60	47
			115A	33.0	39.7	54	60	50	114	57	60	52	116	57	59	60	54
			114A+116A	41.7	50.2	67	70	62	114	70	70	64	116	70	72	80	66
50HC+D09	460-3-60	STD	NONE	—	—	21	25	22	129	23	25	24	131	24	25	30	27
			116A	13.9	16.7	28	30	25	129	30	30	27	131	31	33	35	30
			113A	16.5	19.8	32	35	29	129	34	35	31	131	35	37	40	33
			114A	27.8	33.4	49	50	45	129	51	60	47	131	52	54	60	49
			115A	33.0	39.7	57	60	52	129	59	60	54	131	59	62	70	56
50HC+D09	460-3-60	HIGH	114A+116A	41.7	50.2	70	70	64	129	72	80	66	131	73	75	80	68
			NONE	—	—	14	15	14	77	18	20	19	81	16	20	25	21
			118A	17.0	20.4	28	30	25	77	33	35	30	81	30	35	35	32
			119A	34.0	40.9	54	60	49	77	58	60	53	81	56	60	70	55
			NONE	—	—	14	20	15	81	18	20	19	85	16	20	25	21
50HC+D09	575-3-60	MED	118A	17.0	20.4	28	30	26	81	33	35	30	85	31	35	35	32
			119A	34.0	40.9	54	60	49	81	59	60	54	85	56	61	70	56
			NONE	—	—	15	20	16	92	19	20	20	96	17	21	25	22
			118A	17.0	20.4	29	30	27	92	34	35	31	96	32	36	40	33
			119A	34.0	40.9	55	60	50	92	60	60	55	96	57	62	70	57

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 11 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ PE. (pwrd fr/unit)			NO PE.			w/ PE. (pwrd fr/unit)		
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA
NO M. V-Ph-HZ	STD	NONE	—	—	51/51	60/60	53/53 284	54/54	60/60	57/57 288	55/55	60/60	59/58 289	59/59	70/70	63/63 293
		117A	7.8/10.4	21.7/25.0	51/51	60/60	53/53 284/284	54/54	60/60	57/57 288/288	55/55	60/60	59/58 289/289	59/59	70/70	63/63 293/293
208/230-3-60	MED	110A	12.0/16.0	33.4/38.5	57/57	60/60	53/53 284/284	62/62	70/70	57/57 288/288	63/63	70/70	59/58 289/289	68/68	70/70	63/63 293/293
		112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96 284/284	110/110	110/110	89/101 288/288	111/111	125/125	90/102 289/289	116/116	125/125	95/106 293/293
		112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125 284/284	141/141	150/150	114/129 288/288	142/142	150/150	115/131 289/289	147/147	150/150	119/135 293/293
		112A+110A	37.8/50.0	104.2/120.3	139/139	150/150	128/146 284/284	144/144	150/150	132/150 288/288	145/145	150/150	133/152 289/289	150/150	150/150	138/156 293/293
		NONE	—	—	54	60	57 313	58	70	62 317	59/59	70/70	63 318	63	70	67 322
		117A	7.8/10.4	21.7/25.0	54/54	60/60	57/57 313/313	58/58	70/70	62/62 317/317	59/59	70/70	63/63 318/318	63/63	70/70	67/67 322/322
		110A	12.0/16.0	33.4/38.5	62/62	70/70	57/57 313/313	67/67	70/70	62/62 317/317	68/68	70/70	63/63 318/318	73/73	80/80	67/67 322/322
		112A	24.0/32.0	66.7/77.0	110/110	110/110	89/101 313/313	115/115	125/125	93/105 317/317	116/116	125/125	94/106 318/318	121/121	125/125	99/111 322/322
		112A+117A	31.8/42.4	88.4/102.0	141/141	150/150	114/129 313/313	146/146	150/150	118/134 317/317	147/147	150/150	119/135 318/318	152/152	175/175	124/139 322/322
		112A+110A	37.8/50.0	104.2/120.3	144/144	150/150	132/151 313/313	149/149	150/150	136/155 317/317	150/150	150/150	138/156 318/318	155/155	175/175	142/139 322/322
		NONE	—	—	57/57	70/70	61/60 315	61/61	70/70	65/64 319	62/62	70/70	66/65 320	66/66	80/80	71/70 324
		117A	7.8/10.4	21.7/25.0	57/57	70/70	61/60 315/315	61/61	70/70	65/64 319/319	62/62	70/70	66/65 320/320	66/66	80/80	71/70 324/324
		110A	12.0/16.0	33.4/38.5	64/64	70/70	61/60 315/315	69/69	70/70	65/64 319/319	70/70	80/70	66/65 320/320	75/75	80/80	71/70 324/324
		112A	24.0/32.0	66.7/77.0	113/113	125/125	92/103 315/315	117/117	125/125	97/108 319/319	119/119	125/125	98/109 320/320	123/123	125/125	102/113 324/324
		112A+117A	31.8/42.4	88.4/102.0	144/144	150/150	117/132 315/315	149/149	150/150	122/136 319/319	150/150	150/150	123/137 320/320	155/155	175/175	127/142 324/324
		112A+110A	37.8/50.0	104.2/120.3	148/148	150/150	135/153 315/315	152/152	175/175	140/157 319/319	154/154	175/175	141/158 320/320	158/158	175/175	145/163 324/324
50HC+D11	STD	NONE	—	—	23	25	24 136	25	30	26 138	25	30	27 138	27	30	29 140
		116A	13.9	16.7	26	30	24 136	28	30	26 138	28	30	27 138	31	35	29 140
		113A	16.5	19.8	29	30	27 136	32	35	29 138	32	35	29 138	34	35	31 140
		115A	33.0	39.7	54	60	50 136	57	60	52 138	57	60	52 138	59	60	54 140
		114A+116A	41.7	50.2	67	70	62 136	70	70	64 138	70	70	64 138	72	80	66 140
		115A+113A	50.0	60.1	65	70	73 136	67	70	75 138	68	70	76 138	70	80	78 140
		NONE	—	—	25	30	26 151	27	30	28 153	27	30	29 153	29	35	31 155
		116A	13.9	16.7	28	30	26 151	30	30	28 153	31	35	29 153	33	35	31 155
		113A	16.5	19.8	32	35	29 151	34	35	31 153	35	35	31 153	37	40	33 155
		115A	33.0	39.7	57	60	52 151	59	60	54 153	59	60	54 153	62	70	56 155
		114A+116A	41.7	50.2	70	70	64 151	72	70	66 153	73	80	66 153	75	80	68 155
		115A+113A	50.0	60.1	67	80	75 151	69	80	77 153	70	80	78 153	72	80	80 155
		NONE	—	—	26	30	28 152	28	30	30 154	28	30	30 154	30	35	32 156
		116A	13.9	16.7	29	30	28 152	32	35	30 154	32	35	30 154	34	35	32 156
		113A	16.5	19.8	33	35	30 152	35	35	32 154	36	40	35 154	38	40	35 156
		115A	33.0	39.7	58	60	53 152	60	60	55 154	61	70	56 154	63	70	58 156
		114A+116A	41.7	50.2	71	80	65 152	73	80	67 154	74	80	68 154	76	80	70 156
		115A+113A	50.0	60.1	69	80	76 152	71	80	79 154	71	80	79 154	74	80	81 156
		NONE	—	—	18	20	18 95	21	25	23 99	19	25	20 97	23	25	24 101
		118A	17.0	20.4	28	30	26 95	33	35	30 99	31	35	28 97	35	35	32 101
		119A	34.0	40.9	54	60	49 95	59	60	54 99	56	60	51 97	61	70	56 101
		118A+119A	51.0	61.3	64	70	73 95	69	80	77 99	66	70	75 97	71	80	79 101
		NONE	—	—	18	20	19 106	22	25	23 110	20	25	21 108	24	25	25 112
		118A	17.0	20.4	29	30	27 106	34	35	31 110	32	35	29 108	36	40	33 112
		119A	34.0	40.9	55	60	50 106	60	60	55 110	57	60	52 108	62	70	57 112
		118A+119A	51.0	61.3	65	70	74 106	70	80	78 110	67	70	76 108	72	80	80 112
		NONE	—	—	21	25	22 120	25	30	27 124	23	25	24 122	27	30	29 126
		118A	17.0	20.4	33	35	30 120	38	40	34 124	35	35	32 122	40	40	36 126
		119A	34.0	40.9	59	60	53 120	63	70	58 124	61	70	55 122	65	70	60 126
		118A+119A	51.0	61.3	69	80	77 120	74	80	81 124	71	80	79 122	76	80	83 126

See "Legend and Notes for Tables 10—17" on page 48.



Table 11 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO PE.					w/ PE. (pwrd fr/unit)					NO PE.					w/ PE. (pwrd fr/unit)				
					MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE					
50HC*D12	STD	NONE	—	—	49/49	60/60	52/51	309	53/53	60/60	56/56	313	54/54	60/60	57/57	314	58/58	70/70	62/61	318				
					49/49	60/60	52/51	309/309	53/53	60/60	56/56	313/313	54/54	60/60	57/57	314/314	58/58	70/70	62/61	318/318				
					57/57	60/60	52/52	309/309	62/62	70/70	56/56	313/313	63/63	70/70	57/58	314/314	68/68	70/70	62/62	318/318				
					105/105	110/110	85/96	309/309	110/110	110/110	89/101	313/313	111/111	125/125	90/102	314/314	116/116	125/125	95/106	318/318				
					136/136	150/150	110/125	309/309	141/141	150/150	114/129	313/313	142/142	150/150	115/131	314/314	147/147	150/150	119/135	318/318				
					139/139	150/150	128/146	309/309	144/144	150/150	132/150	313/313	145/145	150/150	133/152	314/314	150/150	138/156	318/318					
50HC*D12	MED	NONE	—	—	53	60	56	338	57	70	60	342	58	70	61	343	62	70	66	347				
					53/53	60/60	56/56	338/338	57/57	70/70	60/60	342/342	58/58	70/70	61/61	343/343	62/62	70/70	66/66	347/347				
					62/62	70/70	56/56	338/338	67/67	70/70	60/61	342/342	68/68	70/70	61/62	343/343	73/73	80/80	66/66	347/347				
					110/110	110/110	89/101	338/338	115/115	125/125	93/105	342/342	116/116	125/125	94/106	343/343	121/121	125/125	99/111	347/347				
					141/141	150/150	114/129	338/338	146/146	150/150	118/134	342/342	147/147	150/150	119/135	343/343	152/152	175/175	124/139	347/347				
					144/144	150/150	132/151	338/338	149/149	150/150	136/155	342/342	150/150	150/150	138/156	343/343	155/155	175/175	142/160	347/347				
50HC*D12	HIGH	NONE	—	—	56/56	60/60	59/58	340	60/60	70/70	64/63	344	61/61	70/70	65/64	345	65/65	80/80	69/68	349				
					56/56	60/60	59/58	340/340	60/60	70/70	64/63	344/344	61/61	70/70	65/64	345/345	65/65	80/80	69/68	349/349				
					64/64	70/70	59/59	340/340	69/69	70/70	64/63	344/344	70/70	80/70	65/64	345/345	75/75	80/80	69/69	349/349				
					113/113	125/125	92/103	340/340	117/117	125/125	97/108	344/344	119/119	125/125	98/109	345/345	123/123	125/125	102/113	349/349				
					144/144	150/150	117/132	340/340	149/149	150/150	122/136	344/344	150/150	150/150	123/137	345/345	155/155	175/175	127/142	349/349				
					148/148	150/150	135/153	340/340	152/152	175/175	140/157	344/344	154/154	175/175	141/158	345/345	158/158	175/175	145/163	349/349				
460-3-60	STD	NONE	—	—	24	30	25	148	26	30	27	150	26	30	28	150	28	30	30	152				
					26	30	25	148	28	30	27	150	30	30	28	150	31	35	30	152				
					29	30	27	148	32	35	29	150	32	35	29	150	34	35	31	152				
					54	60	50	148	57	60	52	150	57	60	52	150	59	60	54	152				
					67	70	62	148	70	70	64	150	70	70	64	150	72	80	66	152				
					65	70	73	148	67	70	75	150	68	70	76	150	70	80	78	152				
460-3-60	MED	NONE	—	—	26	30	27	163	28	30	29	165	28	30	30	165	30	35	32	167				
					28	30	27	163	30	30	29	165	31	35	30	165	33	35	32	167				
					32	35	29	163	34	35	31	165	35	35	31	165	37	40	33	167				
					57	60	52	163	59	60	54	165	59	60	54	165	62	70	56	167				
					70	70	64	163	72	80	66	165	73	80	66	165	75	80	68	167				
					67	80	75	163	69	80	77	165	70	80	78	165	72	80	80	167				
460-3-60	HIGH	NONE	—	—	27	30	29	164	29	35	31	166	29	35	31	166	31	35	33	168				
					29	30	29	164	32	35	31	166	32	35	31	166	34	35	33	168				
					33	35	30	164	35	35	32	166	36	40	33	166	38	40	35	168				
					58	60	53	164	60	60	55	166	61	70	56	166	63	70	58	168				
					71	80	65	164	73	80	67	166	74	80	68	166	76	80	70	168				
					69	80	76	164	71	80	79	166	71	80	79	166	74	80	81	168				
575-3-60	STD	NONE	—	—	18	20	18	105	22	25	23	109	19	25	20	107	23	25	25	111				
					28	30	26	105	33	35	30	109	31	35	28	107	35	35	32	111				
					54	60	49	105	59	60	54	109	56	60	51	107	61	70	56	111				
					64	70	73	105	69	80	77	109	66	70	75	107	71	80	79	111				
					19	20	19	116	22	25	24	120	20	25	21	118	24	30	26	122				
					29	30	27	116	34	35	31	120	32	35	29	118	36	40	33	122				
575-3-60	MED	NONE	—	—	55	60	50	116	60	60	55	120	57	60	52	118	62	70	57	122				
					65	70	74	116	70	80	78	120	67	70	76	118	72	80	80	122				
					21	25	22	130	25	30	27	134	23	25	24	132	27	30	29	136				
					33	35	30	130	38	40	34	134	35	35	32	132	40	40	36	136				
					59	60	53	130	63	70	58	134	61	70	55	132	65	70	60	136				
					69	80	77	130	74	80	81	134	71	80	79	132	76	80	83	136				

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 12 – Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012

UNIT	NO M.V.-Ph-HZ	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ PE. (pwrdr fr/unit)			NO PE.			w/ PE. (pwrdr fr/unit)		
					MCA	FUSE or HACR BRKR	DISC. SIZE	MCA	FUSE or HACR BRKR	DISC. SIZE	MCA	FUSE or HACR BRKR	DISC. SIZE	MCA	FUSE or HACR BRKR	DISC. SIZE
							FLA	LRA					FLA	LRA		FLA
50HC+D08	STD	NONE	—	—	40/40	50/50	41/41	195	44/43	50/50	46/46	199	45/44	50/50	47/47	200
		117A	7.8/10.4	21.7/25.0	40/40	50/50	41/41	195/195	44/43	50/50	46/46	199/199	45/45	50/50	47/47	200/200
		110A	12.0/16.0	33.4/38.5	49/56	60/60	45/51	195/195	54/60	60/60	49/55	199/199	55/62	60/70	51/56	200/200
		111A	18.8/24.8	51.7/59.7	72/82	80/90	68/75	195/195	77/87	80/90	70/79	199/199	78/88	80/90	72/81	200/200
		112A	24.0/32.0	66.7/77.0	91/104	100/110	83/95	195/195	96/108	100/110	88/99	199/199	97/110	100/110	89/101	200/200
50HC+D08	MED	112A+117A	31.8/42.4	88.4/102.0	118/135	125/150	108/124	195/195	123/140	125/150	113/128	199/199	124/141	125/150	114/129	200/200
		NONE	—	—	41/41	50/50	43/43	199	45/45	50/50	47/47	203	46/46	50/50	48/48	204
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	199/199	45/45	50/50	47/47	203/203	46/46	50/50	48/48	204/204
		110A	12.0/16.0	33.4/38.5	51/57	60/60	47/52	199/199	56/62	60/70	51/56	203/203	57/63	60/70	52/58	204/204
		111A	18.8/24.8	51.7/59.7	74/84	80/90	68/76	199/199	79/88	80/90	72/81	203/203	80/90	80/90	73/82	204/204
50HC+D08	HIGH	112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	199/199	97/110	100/110	89/101	203/203	99/111	100/125	90/102	204/204
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	199/199	125/141	125/150	114/129	203/203	126/142	150/150	115/131	204/204
		NONE	—	—	45/44	50/50	47/46	249	49/48	60/60	52/50	253	50/49	60/60	53/52	254
		117A	7.8/10.4	21.7/25.0	45/44	50/50	47/46	249/249	49/49	60/60	52/50	253/253	50/50	60/60	53/52	254/254
		110A	12.0/16.0	33.4/38.5	56/61	60/70	51/56	249/249	60/66	60/70	55/60	253/253	62/67	70/70	56/61	254/254
50HC+D08	STD	111A	18.8/24.8	51.7/59.7	79/87	80/90	72/80	249/249	83/92	90/100	76/84	253/253	85/93	90/100	77/85	254/254
		112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	249/249	102/114	110/125	93/104	253/253	103/115	110/125	95/105	254/254
		112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	249/249	129/145	150/150	118/133	253/253	130/146	150/150	120/134	254/254
		NONE	—	—	19	20	19	97	20	25	21	99	21	25	22	99
		116A	13.9	16.7	25	25	23	97	27	30	25	99	28	30	25	99
50HC+D08	MED	113A	16.5	19.8	29	30	26	97	31	35	28	99	32	35	29	99
		114A	27.8	33.4	46	50	42	97	48	50	44	99	49	50	44	99
		115A	33.0	39.7	54	60	49	97	56	60	51	99	56	60	52	99
		114A+116A	41.7	50.2	67	70	61	97	69	70	63	99	70	70	64	99
		NONE	—	—	20	25	20	100	21	25	22	102	22	25	23	102
50HC+D08	HIGH	116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102
		113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102
		114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102
		115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102
		114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102
50HC+D08	STD	NONE	—	—	21	25	22	125	22	25	24	127	23	25	24	127
		116A	13.9	16.7	27	30	25	125	30	30	27	127	30	30	27	127
		113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	31	127
		114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127
		115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127
50HC+D08	MED	114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127
		NONE	—	—	14	15	14	79	18	20	19	83	16	20	16	81
		118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81
		119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81
		NONE	—	—	15	20	15	83	18	20	19	87	16	20	17	85
50HC+D08	HIGH	118A	17.0	20.4	30	30	27	83	35	35	30	87	32	35	29	85
		119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85
		NONE	—	—	16	20	16	92	19	25	21	96	17	20	18	94
		118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94
		119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94

See "Legend and Notes for Tables 10 — 17" on page 48.

50HC

Table 12 - Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.				w/ P.E. (pwrd fr/unit)			NO P.E.				w/ P.E. (pwrd fr/unit)			w/ PWRD C.O.					
					MCA	FUSE or HACR BRKR	FLA	DISC. SIZE	LRA	MCA	FUSE or HACR BRKR	FLA	DISC. SIZE	LRA	MCA	FUSE or HACR BRKR	FLA	DISC. SIZE	LRA	MCA	FUSE or HACR BRKR	FLA	DISC. SIZE	LRA
50HC*D09	STD	NONE	—	—	40/40	50/50	42/41	195	44/44	50/50	46/46	199	45/45	50/50	47/47	200	49/48	60/60	52/51	204				
		117A	7.8/10.4	21.7/25.0	40/40	50/50	42/41	195/195	44/44	50/50	46/46	199/199	45/45	50/50	47/47	200/200	49/49	60/60	52/51	204/204				
		110A	12.0/16.0	33.4/38.5	49/56	50/60	45/51	195/195	54/60	60/60	49/55	199/199	55/62	60/70	51/56	200/200	60/66	60/70	55/61	204/204				
		111A	18.6/24.8	51.7/59.7	72/82	80/90	66/75	195/195	77/87	80/90	70/79	199/199	78/88	80/90	72/81	200/200	83/93	90/100	76/85	204/204				
		112A	24.0/32.0	66.7/77.0	91/104	100/110	83/95	195/195	96/108	100/110	88/99	199/199	97/110	100/110	89/101	200/200	102/114	110/125	93/105	204/204				
	MED	112A+117A	31.8/42.4	88.4/102.0	118/135	125/150	108/124	195/195	123/140	125/150	113/128	199/199	124/141	125/150	114/129	200/200	129/146	150/150	118/134	204/204				
		NONE	—	—	41/41	50/50	43/43	199	45/45	50/50	47/47	203	46/46	50/50	49/48	204	50/50	60/60	53/53	208				
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	199/199	45/45	50/50	47/47	203/203	46/46	50/50	49/48	204/204	50/51	60/60	53/53	208/208				
		110A	12.0/16.0	33.4/38.5	51/57	60/60	47/52	199/199	56/62	60/70	51/56	203/203	57/63	60/70	52/58	204/204	62/68	70/70	56/62	208/208				
		111A	18.6/24.8	51.7/59.7	74/84	80/90	68/76	199/199	79/88	80/90	72/81	203/203	80/90	73/82	204/204	85/94	90/100	78/86	208/208					
50HC*D09	HIGH	112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	199/199	97/110	100/110	89/101	203/203	99/111	100/125	90/102	204/204	103/116	110/125	95/106	208/208				
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	199/199	125/141	125/150	114/129	203/203	126/142	150/150	115/131	204/204	131/147	150/150	120/135	208/208				
		NONE	—	—	45/44	50/50	47/46	249	49/48	60/60	52/51	253	50/49	60/60	53/52	254	54/53	60/60	57/56	258				
		117A	7.8/10.4	21.7/25.0	45/44	50/50	47/46	249/249	49/49	60/60	52/51	253/253	50/50	60/60	53/52	254/254	54/55	60/60	57/56	258/258				
		110A	12.0/16.0	33.4/38.5	56/61	60/70	51/56	249/249	60/66	60/70	55/60	253/253	62/67	70/70	56/61	254/254	66/72	70/80	61/65	258/258				
	STD	111A	18.6/24.8	51.7/59.7	79/87	80/90	72/80	249/249	83/92	90/100	76/84	253/253	85/93	90/100	77/85	254/254	89/98	90/100	82/90	258/258				
		112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	249/249	102/114	110/125	93/104	253/253	103/115	110/125	95/105	254/254	108/120	110/125	99/110	258/258				
		112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	249/249	129/145	150/150	118/133	253/253	130/146	150/150	120/134	254/254	135/151	150/175	124/138	258/258				
		NONE	—	—	19	25	19	97	21	25	22	99	21	25	22	99	23	25	24	101				
		116A	13.9	16.7	25	25	23	97	27	30	25	99	28	30	25	99	30	30	27	101				
575-3-60	STD	113A	16.5	19.8	29	30	26	97	31	35	28	99	32	35	29	99	34	35	31	101				
		114A	27.8	33.4	46	50	42	97	48	50	44	99	49	50	44	99	51	60	46	101				
		115A	33.0	39.7	54	60	49	97	56	60	51	99	56	60	52	99	59	60	54	101				
		114A+116A	41.7	50.2	67	70	61	97	69	70	63	99	70	70	64	99	72	80	66	101				
		NONE	—	—	20	25	20	100	22	25	23	102	22	25	23	102	24	25	25	104				
	MED	116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102	30	35	28	104				
		113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102	35	35	32	104				
		114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102	52	60	47	104				
		115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102	60	60	55	104				
		114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102	73	80	67	104				
HIGH	NONE	—	—	21	25	22	125	23	25	24	127	23	25	24	127	25	30	26	129					
	116A	13.9	16.7	27	30	25	125	30	35	27	127	30	30	27	127	32	35	29	129					
	113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	31	127	36	40	33	129					
	114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127	53	60	49	129					
	115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127	61	70	56	129					
575-3-60	STD	114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127	74	80	68	129				
		NONE	—	—	15	20	16	79	19	20	20	83	17	20	18	81	21	25	22	85				
		118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81	36	40	33	85				
		119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81	62	70	57	85				
		NONE	—	—	16	20	16	83	20	25	21	87	18	20	18	85	21	25	23	89				
575-3-60	MED	118A	17.0	20.4	30	30	27	83	35	35	32	87	32	35	29	85	37	40	34	89				
		119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85	63	70	57	89				
		NONE	—	—	17	20	18	92	21	25	22	96	19	20	20	94	22	25	24	98				
		118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94	38	40	35	98				
		119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94	64	70	59	98				

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 12 - Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						NO P.E.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)		
					MCA	FUSE or BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or BRKR	DISC. SIZE
50HC*D11	NO M. V-PH-HZ	NONE	—	—	51/50	60/60	53/53	254	55/54	60/60	58/57	258	56/55	60/60	59/58	259	59/59	70/70	63/63	263		
		117A	7.8/10.4	21.7/25.0	51/50	60/60	53/53	254/254	55/54	60/60	58/57	258/258	56/55	60/60	59/58	259/259	59/59	70/70	63/63	263/263		
		110A	12.0/16.0	33.4/38.5	51/57	60/60	53/53	254/254	56/62	60/70	58/57	258/258	57/63	60/70	59/58	259/259	62/68	70/70	63/63	263/263		
		112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	254/254	97/110	100/110	89/101	258/258	99/111	100/125	90/102	259/259	103/116	110/125	95/106	263/263		
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	254/254	125/141	125/150	114/129	258/258	126/142	150/150	115/131	259/259	131/147	150/150	120/135	263/263		
		112A+110A	37.6/50.0	104.2/120.3	140/129	150/150	128/146	254/254	144/134	150/150	132/151	258/258	146/135	150/150	134/152	259/259	150/147	150/150	138/156	263/263		
		NONE	—	—	54/53	60/60	58/56	304	58/57	70/70	62/61	308	59/58	70/70	63/62	309	63/62	70/70	67/66	313		
		117A	7.8/10.4	21.7/25.0	54/53	60/60	58/56	304/304	58/57	70/70	62/61	308/308	59/58	70/70	63/62	309/309	63/62	70/70	67/66	313/313		
		110A	12.0/16.0	33.4/38.5	56/61	60/70	58/56	304/304	60/66	70/70	62/61	308/308	62/67	70/70	63/62	309/309	66/72	70/80	67/66	313/313		
		112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	304/304	102/114	110/125	93/104	308/308	103/115	110/125	95/105	309/309	108/120	110/125	99/110	313/313		
50HC*D11	208/230-3-60	112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	304/304	129/145	150/150	118/133	308/308	130/146	150/150	120/134	309/309	135/151	150/175	124/138	313/313		
		112A+110A	37.6/50.0	104.2/120.3	144/133	150/150	132/150	304/304	149/138	150/150	137/154	308/308	150/139	150/150	138/155	309/309	155/144	175/175	142/160	313/313		
		NONE	—	—	57/56	70/60	61/60	315	61/60	70/70	65/64	319	62/61	70/70	66/65	320	66/65	80/80	71/70	324		
		117A	7.8/10.4	21.7/25.0	57/56	70/60	61/60	315/315	61/60	70/70	65/64	319/319	62/61	70/70	66/65	320/320	66/65	80/80	71/70	324/324		
		110A	12.0/16.0	33.4/38.5	59/64	70/70	61/60	315/315	64/69	70/70	65/64	319/319	65/70	70/70	66/65	320/320	70/75	80/80	71/70	324/324		
		112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	315/315	106/117	110/125	97/108	319/319	107/119	110/125	98/109	320/320	112/123	125/125	102/113	324/324		
		112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	315/315	133/149	150/150	122/136	319/319	134/150	150/150	123/137	320/320	139/155	150/175	127/142	324/324		
		112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	315/315	152/141	175/175	140/157	319/319	154/143	175/175	141/158	320/320	158/147	175/175	145/163	324/324		
		NONE	—	—	24	30	25	122	25	30	27	124	26	30	27	124	28	30	29	126		
		118A	13.9	16.7	26	30	25	122	28	30	27	124	29	30	27	124	31	35	29	126		
50HC*D11	460-3-60	113A	16.5	19.8	30	30	27	122	32	35	29	124	33	35	30	124	35	35	32	126		
		115A	33.0	39.7	55	60	50	122	57	60	52	124	58	60	53	124	60	60	55	126		
		114A+116A	41.7	50.2	68	70	62	122	70	70	64	124	71	80	65	124	73	80	67	126		
		115A+113A	50.0	60.1	65	70	73	122	68	80	76	124	68	80	76	124	70	80	78	126		
		NONE	—	—	25	30	26	147	27	30	28	149	27	30	28	149	29	35	30	151		
		118A	13.9	16.7	27	30	26	147	30	30	28	149	30	30	28	149	32	35	30	151		
		113A	16.5	19.8	31	35	28	147	34	35	30	149	34	35	30	149	36	40	33	151		
		115A	33.0	39.7	56	60	51	147	58	60	53	149	59	60	54	149	61	70	56	151		
		114A+116A	41.7	50.2	69	70	63	147	72	80	65	149	72	80	66	149	74	80	68	151		
		115A+113A	50.0	60.1	67	80	75	147	69	80	77	149	69	80	77	149	72	80	79	151		
50HC*D11	460-3-60	NONE	—	—	26	30	28	152	28	30	30	154	28	30	30	154	30	35	32	156		
		118A	13.9	16.7	29	30	28	152	32	35	30	154	32	35	30	154	34	35	32	156		
		113A	16.5	19.8	33	35	30	152	35	35	32	154	36	40	33	154	38	40	35	156		
		115A	33.0	39.7	58	60	53	152	60	60	55	154	61	70	56	154	63	70	58	156		
		114A+116A	41.7	50.2	71	80	65	152	73	80	67	154	74	80	68	154	76	80	70	156		
		115A+113A	50.0	60.1	69	80	76	152	71	80	79	154	71	80	79	154	74	80	81	156		
		NONE	—	—	19	20	20	97	23	25	24	101	21	25	22	99	25	30	26	103		
		118A	17.0	20.4	30	30	27	97	35	35	32	101	32	35	29	99	37	40	34	103		
		119A	34.0	40.9	56	60	51	97	61	70	55	101	58	60	53	99	63	70	57	103		
		118A+119A	51.0	61.3	66	70	75	97	71	80	79	101	68	80	76	99	73	80	81	103		
50HC*D11	575-3-60	NONE	—	—	20	25	21	106	24	25	25	110	22	25	108	26	30	27	112			
		118A	17.0	20.4	32	35	29	106	36	31	30	108	34	35	31	108	38	40	35	112		
		119A	34.0	40.9	57	60	52	106	62	70	57	110	59	60	54	108	64	70	59	112		
		118A+119A	51.0	61.3	67	80	76	106	72	80	80	110	70	80	78	108	74	80	82	112		
		NONE	—	—	22	25	23	120	26	30	27	124	24	25	25	122	28	30	29	126		
		118A	17.0	20.4	34	35	31	120	38	33	35	124	36	40	33	122	41	45	37	126		
		119A	34.0	40.9	59	60	54	120	64	70	59	124	61	70	56	122	66	70	60	126		
		118A+119A	51.0	61.3	70	80	78	120	74	80	82	124	72	80	80	122	76	80	84	126		

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 12 - Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ P.E. (pwrd fr/unit)						NO P.E.						w/ PWRD C.O.													
		CRHEATER***A00	Nom (kW)	FLA	FUSE or HACR BRKR			DISC. SIZE			MCA	FUSE or HACR BRKR	MCA	FUSE or HACR BRKR	MCA	DISC. SIZE			FUSE or HACR BRKR	MCA	FUSE or HACR BRKR	DISC. SIZE			FUSE or HACR BRKR	MCA	FUSE or HACR BRKR	DISC. SIZE								
					FLA	DISC. SIZE	LRA	FLA	DISC. SIZE	LRA						FLA	DISC. SIZE	LRA				FLA	DISC. SIZE	LRA				FLA	DISC. SIZE	LRA	FLA	DISC. SIZE	LRA			
50HC+D12	STD	NONE	—	—	50/49	60/60	52/52	279	53/53	60/60	56/56	283	54/54	60/60	57/57	284	58/58	70/70	62/61	288	59/58	70/70	62/61	288/288	59/58	70/70	62/61	288/288	59/58	70/70	62/61	288/288	59/58	70/70	62/61	288/288
		117A	7.8/10.4	21.7/25.0	50/49	60/60	52/52	279/279	53/53	60/60	56/56	283/283	54/54	60/60	57/57	284/284	58/58	70/70	62/61	288/288	59/58	70/70	62/61	288/288	59/58	70/70	62/61	288/288	59/58	70/70	62/61	288/288				
		110A	12.0/16.0	33.4/38.5	51/57	60/60	52/52	279/279	56/62	60/70	56/56	283/283	57/63	60/70	57/58	284/284	62/68	70/70	62/62	288/288	62/68	70/70	62/62	288/288	62/68	70/70	62/62	288/288	62/68	70/70	62/62	288/288				
		112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	279/279	97/110	100/110	89/101	283/283	99/111	100/125	90/102	284/284	103/116	110/125	95/106	288/288	103/116	110/125	95/106	288/288	103/116	110/125	95/106	288/288	103/116	110/125	95/106	288/288				
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	279/279	125/141	125/150	114/129	283/283	126/142	150/150	115/131	284/284	131/147	150/150	120/135	288/288	131/147	150/150	120/135	288/288	131/147	150/150	120/135	288/288	131/147	150/150	120/135	288/288				
	112A+110A	37.6/50.0	104.2/120.3	140/129	150/150	128/146	279/279	144/134	150/150	132/151	283/283	146/135	150/150	134/152	284/284	150/140	150/150	138/156	288/288	146/135	150/150	134/152	284/284	150/140	150/150	138/156	288/288	150/140	150/150	138/156	288/288					
	NONE	—	—	53/52	60/60	56/55	329	57/56	70/60	60/59	333	58/57	70/70	62/60	334	62/61	70/70	66/65	338	58/57	70/70	62/60	334/334	62/61	70/70	66/65	338/338	62/61	70/70	66/65	338/338					
	117A	7.8/10.4	21.7/25.0	53/52	60/60	56/55	329/329	57/56	70/60	60/59	333/333	58/57	70/70	62/60	334/334	62/61	70/70	66/65	338/338	58/57	70/70	62/60	334/334	62/61	70/70	66/65	338/338	62/61	70/70	66/65	338/338					
	110A	12.0/16.0	33.4/38.5	56/61	60/70	56/56	329/329	60/66	70/70	60/60	333/333	62/67	70/70	62/61	334/334	66/72	70/80	66/65	338/338	60/66	70/70	62/61	334/334	66/72	70/80	66/65	338/338	66/72	70/80	66/65	338/338					
	112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	329/329	102/114	110/125	93/104	333/333	103/115	110/125	95/105	334/334	108/120	110/125	99/110	338/338	103/115	110/125	95/105	334/334	108/120	110/125	99/110	338/338	103/115	110/125	99/110	338/338					
HIGH	112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	329/329	129/145	150/150	118/133	333/333	130/146	150/150	120/134	334/334	124/138	150/175	124/138	338/338	130/146	150/150	120/134	334/334	124/138	150/175	124/138	338/338	130/146	150/175	124/138	338/338					
	112A+110A	37.6/50.0	104.2/120.3	144/133	150/150	132/150	329/329	149/138	150/150	137/154	333/333	150/139	150/150	138/155	334/334	155/144	175/175	142/160	338/338	150/139	150/150	138/155	334/334	155/144	175/175	142/160	338/338	150/139	150/150	138/155	338/338					
	NONE	—	—	56/55	60/60	59/58	340	60/59	70/70	64/63	344	61/60	70/70	65/64	345	65/64	80/70	69/68	349	61/60	70/70	65/64	345/345	65/64	80/70	69/68	349	65/64	80/70	69/68	349					
	117A	7.8/10.4	21.7/25.0	56/55	60/60	59/58	340/340	60/59	70/70	64/63	344/344	61/60	70/70	65/64	345/345	65/64	80/70	69/68	349/349	60/59	70/70	65/64	345/345	65/64	80/70	69/68	349/349	65/64	80/70	69/68	349/349					
	110A	12.0/16.0	33.4/38.5	59/64	60/70	59/59	340/340	64/69	70/70	64/63	344/344	65/70	70/70	65/64	345/345	70/75	80/80	69/69	349/349	64/69	70/70	65/64	345/345	70/75	80/80	69/69	349/349	70/75	80/80	69/69	349/349					
STD	112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	340/340	106/117	110/125	97/108	344/344	107/119	110/125	98/109	345/345	112/123	125/125	102/113	349/349	106/117	110/125	98/109	345/345	112/123	125/125	102/113	349/349	112/123	125/125	102/113	349/349					
	112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	340/340	133/149	150/150	122/136	344/344	134/150	150/150	123/137	345/345	139/155	150/175	127/142	349/349	133/149	150/150	122/136	344/344	134/150	150/175	127/142	349/349	139/155	150/175	127/142	349/349					
	112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	340/340	152/141	175/175	140/157	344/344	154/143	175/175	141/158	345/345	158/147	175/175	145/163	349/349	152/141	175/175	141/158	345/345	158/147	175/175	145/163	349/349	158/147	175/175	145/163	349/349					
	NONE	—	—	25	30	26	134	26	30	28	136	27	30	28	136	29	35	30	138	25	30	28	136	29	35	30	138	29	35	30	138					
	116A	13.9	16.7	26	30	26	134	28	30	28	136	29	30	28	136	31	35	30	138	26	30	28	136	29	35	30	138	26	30	28	138					
MED	113A	16.5	19.8	31	35	28	159	34	35	30	161	34	35	30	161	36	40	33	163	31	35	30	161	36	40	33	163	31	35	30	163					
	115A	33.0	39.7	56	60	51	159	58	60	53	161	59	60	54	161	61	70	56	163	58	60	53	161	61	70	56	163	58	60	53	163					
	114A+116A	41.7	50.2	69	70	63	159	72	80	65	161	72	80	66	161	74	80	68	163	69	70	63	159	72	80	66	163	74	80	68	163					
	115A+113A	50.0	60.1	67	80	75	159	69	80	77	161	69	80	77	161	72	80	79	163	67	80	75	159	69	80	77	163	72	80	79	163					
	NONE	—	—	27	30	29	164	29	35	31	166	29	35	31	166	31	35	33	168	27	30	29	164	29	35	31	168	29	35	33	168					
HIGH	116A	13.9	16.7	29	30	29	164	32	35	31	166	32	35	31	166	34	35	33	168	29	35	31	166	32	35	31	168	34	35	33	168					
	113A	16.5	19.8	33	35	30	164	35	35	32	166	36	40	33	166	38	40	35	168	33	35	32	166	36	40	33	168	38	40	35	168					
	115A	33.0	39.7	58	60	53	164	60	60	55	166	61	70	56	166	63	70	58	168	58	60	53	166	61	70	56	168	63	70	58	168					
	114A+116A	41.7	50.2	71	80	65	164	73	80	67	166	74	80	68	166	76	80	70	168	71	80	67	166	74	80	68	168	76	80	70	168					
	115A+113A	50.0	60.1	69	80	76	164	71	80	79	166	71	80	79	166	74	80	81	168	69	80	76	164	71	80	79	168	74	80	81	168					
STD	NONE	—	—	19	25	20	107	23	25	24	111	21	25	22	109	25	30	26	113	19	25	22	109	25	30	26	113	25	30	26	113					
	118A	17.0	20.4	30	30	27	107	35	35	32	111	32	35	29	109	37	40	34	113	30	35	29	109	37	40	34	113	37	40	34	113					
	119A	34.0	40.9	56	60	51	107	61	70	55	111	58	60	53	109	63	70	57	113	56	60	53	109	63	70	57	113	63	70	57	113					
	118A+119A	51.0	61.3	66	70	75	107	71	80	79	111	68	80	76	109	73	80	81	113	66	70	75	109	73	80	81	113	73	80	81	113					
	NONE	—	—	20	25	21	116	24	30	26	120	22	25	23	118	26	30	27	122	20	25	23	118	26	30	27	122	26	30	27	122					
MED	118A	17.0	20.4	32	35	29	116	36	40	31	120	34	35	31	118	38	40	35	122	32	35	29	116	38	40	35	122	38	40	35	122					
	119A	34.0	40.9	57	60	52	116	62	70	57	120	59	60	54	118	64	70	59	122	57	60	52	116	64	70	59	122	64	70	59	122					
	118A+119A	51.0	61.3	67	80	76	116	72	80	80	120	70	80	78	118	74	80	82	122	67	80	76	116	74	80	82	122	74	80	82	122					
	NONE	—	—	22	25	23	130	26	30	27	134	24	25	25	132	28	30	29	136	22	25	23	130	24	25	25	132	28	30	29	136					
	118A	17.0	20.4	34	35	31	130	38	40	35	134	36	40	33	132	41	45	37	136	34	35	31	130	36	40	33	132	41	45	37	136					
HIGH	119A	34.0	40.9	59	60	54	130	64	70	59	134	61	70	56	132	66	70	60	136	59	60	54	130	61	70	56	132	66	70	60	136					
	118A+119A	51.0	61.3	70	80	78	130	74	80	82	134	72																								

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 13 – Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012

UNIT	NO M. V-PH-HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
			ORHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)		
						MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA
50HCxD08		STD	NONE	—	—	40/40	50/50	41/41	195	44/44	50/50	46/46	199	45/45	50/50	47/47	200
			117A	7.8/10.4	21.7/25.0	40/40	50/50	41/41	195/195	44/44	50/50	46/46	199/199	45/45	50/50	47/47	200/200
			110A	12.0/16.0	33.4/38.5	56/56	60/60	45/51	195/195	60/60	60/60	49/55	199/199	62/62	70/70	51/56	200/200
			111A	18.6/24.8	51.7/59.7	82/82	90/90	66/75	195/195	87/87	90/90	70/79	199/199	88/88	90/90	72/81	200/200
			112A	24.0/32.0	66.7/77.0	104/104	110/110	83/95	195/195	108/108	110/110	88/99	199/199	110/110	110/110	89/101	200/200
	208/230-3-60	MED	112A+117A	31.8/42.4	88.4/102.0	135/135	150/150	108/124	195/195	140/140	150/150	113/128	199/199	141/141	150/150	114/129	200/200
			NONE	—	—	41/41	50/50	43/43	199	45/45	50/50	47/47	203	46/46	50/50	48/48	204
			117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	199/199	45/45	50/50	47/47	203/203	46/46	50/50	48/48	204/204
			110A	12.0/16.0	33.4/38.5	57/57	60/60	47/52	199/199	62/62	70/70	51/56	203/203	63/63	70/70	52/58	204/204
			111A	18.6/24.8	51.7/59.7	84/84	90/90	68/76	199/199	88/88	90/90	72/81	203/203	90/90	90/90	73/82	204/204
		HIGH	112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96	199/199	110/110	110/110	89/101	203/203	111/111	125/125	90/102	204/204
			112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125	199/199	141/141	150/150	114/129	203/203	142/142	150/150	115/131	204/204
			NONE	—	—	45/45	50/50	47/46	249	49/49	60/60	52/50	253	50/50	60/60	53/52	254
			117A	7.8/10.4	21.7/25.0	45/45	50/50	47/46	249/249	49/49	60/60	52/50	253/253	50/50	60/60	53/52	254/254
			110A	12.0/16.0	33.4/38.5	61/61	70/70	51/56	249/249	66/66	70/70	55/60	253/253	67/67	70/70	56/61	254/254
460-3-60		STD	111A	18.6/24.8	51.7/59.7	87/87	90/90	72/80	249/249	92/92	100/100	76/84	253/253	93/93	100/100	77/85	254/254
			115A	33.0	39.7	54	60	49	97	56	60	51	99	56	60	52	99
			114A+116A	41.7	50.2	67	70	61	97	72	80	63	99	70	70	64	99
			NONE	—	—	20	25	20	100	21	25	22	102	22	25	23	102
			116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102
	460-3-60	MED	113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102
			114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102
			115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102
			114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102
			NONE	—	—	21	25	20	125	22	25	24	127	23	25	24	127
		HIGH	116A	13.9	16.7	27	30	25	125	30	30	27	127	30	30	27	127
			113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	31	127
			114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127
			115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127
			114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127
575-3-60		STD	NONE	—	—	14	15	14	79	18	20	19	83	16	20	16	81
			118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81
			119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81
			NONE	—	—	15	20	15	83	18	20	19	87	16	20	17	85
			118A	17.0	20.4	30	30	27	83	35	35	32	87	32	35	29	85
		MED	119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85
			NONE	—	—	16	20	16	92	19	25	21	96	17	20	18	94
			118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94
			119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94
			NONE	—	—	17	20	17	96	17	20	18	98	17	20	18	98

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 13 - Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						NO P.E.						w/ PWRD C.O.			
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrdr fr/unit)			NO P.E.			w/ PWRD C.O.						
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA				
50HC+D09	NO M.V.-Ph-HZ	NONE	—	—	40/40	50/50	42/41	195	44/44	50/50	46/46	199	45/45	50/50	47/47	200	49/49	60/60	52/51	204
		117A	7.8/10.4	21.7/25.0	40/40	50/50	42/41	195/195	44/44	50/50	46/46	199/199	45/45	50/50	47/47	200/200	49/49	60/60	52/51	204/204
		110A	12.0/16.0	33.4/38.5	56/56	60/60	45/51	195/195	60/60	60/60	49/55	199/199	62/62	70/70	51/56	200/200	66/66	70/70	55/61	204/204
		111A	18.6/24.8	51.7/59.7	82/82	90/90	66/75	195/195	87/87	90/90	70/79	199/199	88/88	90/90	72/81	200/200	93/93	100/100	76/85	204/204
		112A	24.0/32.0	66.7/77.0	104/104	110/110	83/95	195/195	108/108	110/110	88/99	199/199	110/110	125/125	90/101	200/200	114/114	125/125	93/105	204/204
		112A+117A	31.8/42.4	88.4/102.0	135/135	150/150	108/124	195/195	140/140	150/150	113/128	199/199	141/141	150/150	114/129	200/200	146/146	150/150	118/134	204/204
		NONE	—	—	41/41	50/50	43/43	199	45/45	50/50	47/47	203	46/46	50/50	49/48	204	50/50	60/60	53/53	208
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	199/199	45/45	50/50	47/47	203/203	46/46	50/50	49/48	204/204	51/51	60/60	53/53	208/208
		110A	12.0/16.0	33.4/38.5	57/57	60/60	47/52	199/199	62/62	70/70	51/56	203/203	63/63	70/70	52/58	204/204	68/68	70/70	56/62	208/208
		111A	18.6/24.8	51.7/59.7	84/84	90/90	68/76	199/199	88/88	90/90	72/81	203/203	90/90	90/90	73/82	204/204	94/94	100/100	78/86	208/208
50HC+D09	208/230-3-60	112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96	199/199	110/110	110/110	89/101	203/203	111/111	125/125	90/102	204/204	116/116	125/125	95/106	208/208
		112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125	199/199	141/141	150/150	114/129	203/203	142/142	150/150	115/131	204/204	147/147	150/150	120/135	208/208
		NONE	—	—	45/45	50/50	47/46	249	49/49	60/60	52/51	253	50/50	60/60	53/52	254	54/54	60/60	57/56	258
		117A	7.8/10.4	21.7/25.0	45/45	50/50	47/46	249/249	49/49	60/60	52/51	253/253	50/50	60/60	53/52	254/254	55/55	60/60	57/56	258/258
		110A	12.0/16.0	33.4/38.5	61/61	70/70	51/56	249/249	66/66	70/70	55/60	253/253	67/67	70/70	56/61	254/254	72/72	80/80	61/65	258/258
		111A	18.6/24.8	51.7/59.7	87/87	90/90	72/80	249/249	92/92	100/100	76/84	253/253	93/93	100/100	77/85	254/254	98/98	100/100	82/90	258/258
		112A	24.0/32.0	66.7/77.0	109/109	110/110	89/100	249/249	114/114	125/125	93/104	253/253	115/115	125/125	95/105	254/254	120/120	100/100	99/110	258/258
		112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	114/129	249/249	145/145	150/150	118/133	253/253	146/146	150/150	120/134	254/254	151/151	175/175	124/138	258/258
		NONE	—	—	19	25	19	97	21	25	22	99	21	25	22	99	23	25	24	101
		116A	13.9	16.7	25	25	23	97	27	30	25	99	28	30	25	99	30	30	27	101
50HC+D09	460-3-60	113A	16.5	19.8	29	30	26	97	31	35	28	99	32	35	29	99	34	35	31	101
		114A	27.8	33.4	46	50	42	97	48	50	44	99	49	50	44	99	51	60	46	101
		115A	33.0	39.7	54	60	49	97	56	60	51	99	56	60	52	99	59	60	54	101
		114A+116A	41.7	50.2	67	70	61	97	69	70	63	99	70	70	64	99	72	80	66	101
		NONE	—	—	20	25	20	100	22	25	23	102	22	25	23	102	24	25	25	104
		116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102	31	35	28	104
		113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102	35	35	32	104
		114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102	52	60	47	104
		115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102	60	60	55	104
		114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102	73	80	67	104
575-3-60	STD	NONE	—	—	21	25	22	125	23	25	24	127	23	25	24	127	25	30	26	129
		116A	13.9	16.7	27	30	25	125	30	30	27	127	30	30	27	127	32	35	29	129
		113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	31	127	36	40	33	129
		114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127	53	60	49	129
		115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127	61	70	56	129
		114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127	74	80	68	129
		NONE	—	—	15	20	16	79	19	20	20	83	17	20	18	81	21	25	22	85
		118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81	36	40	33	85
		119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81	62	70	57	85
		NONE	—	—	16	20	16	83	20	25	21	87	18	20	18	85	21	25	23	89
575-3-60	MED	118A	17.0	20.4	30	30	27	83	35	35	32	87	32	35	29	85	37	40	34	89
		119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85	63	70	57	89
		NONE	—	—	17	20	18	92	21	25	22	96	19	20	20	94	22	25	24	98
		118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94	38	40	35	98
		119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94	64	70	59	98
		NONE	—	—	20	25	23	102	25	25	23	102	25	25	23	102	25	25	24	101
		116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102	31	35	28	104
		113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102	35	35	32	104
		114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102	52	60	47	104
		115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102	60	60	55	104
575-3-60	HIGH	114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102	73	80	67	104
		NONE	—	—	21	25	22	125	23	25	24	127	23	25	24	127	25	30	26	129
		116A	13.9	16.7	27	30	25	125	30	30	27	127	30	30	27	127	32	35	29	129
		113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	31	127	36	40	33	129
		114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127	53	60	49	129
		115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127	61	70	56	129
		114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127	74	80	68	129
		NONE	—	—	15	20	16	79	19	20	20	83	17	20	18	81	21	25	22	85
		118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81	36	40	33	85
		119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81	62	70	57	85
575-3-60	MED	NONE	—	—	16	20	16	83	20	25	21	87	18	20	18	85	21	25	23	89
		118A	17.0	20.4	30	30	27	83	35	35	32	87	32	35	29	85	37	40	34	89
		119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85	63	70	57	89
		NONE	—	—	17	20	18	92	21	25	22	96	19	20	20	94	22	25	24	98
		118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94	38	40	35	98
		119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94	64	70	59	98
		NONE	—	—	20	25	23	102	25	25	23	102	25	25	23	102	25	25	24	101
		116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102	31	35	28	104
		113A	16.5	19.8																

Table 13 – Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)		
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA
50HC*D11	NO M. V-PH-HZ	NONE	—	—	51/51	60/60	53/53 254	55/55	60/60	58/57 258	56/56	60/60	59/58 259	59/59	70/70	63/63 263
		117A	7.8/10.4	21.7/25.0	51/51	60/60	53/53 254/254	55/55	60/60	58/57 258/258	56/56	60/60	59/58 259/259	59/59	70/70	63/63 263/263
		110A	12.0/16.0	33.4/38.5	57/57	60/60	53/53 254/254	62/62	70/70	58/57 258/258	63/63	70/70	59/58 259/259	68/68	70/70	63/63 263/263
		112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96 254/254	110/110	110/110	89/101 258/258	111/111	125/125	90/102 259/259	116/116	125/125	95/106 263/263
		112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125 254/254	141/141	150/150	114/129 258/258	142/142	150/150	115/131 259/259	147/147	150/150	120/135 263/263
		112A+110A	37.6/50.0	104.2/120.3	140/140	150/150	128/146 254/254	144/144	150/150	132/151 258/258	146/146	150/150	134/152 259/259	150/150	150/150	138/156 263/263
		NONE	—	—	54/54	60/60	58/56 304	58/58	70/70	62/61 308	59/59	70/70	63/62 309	63/63	70/70	67/66 313
		117A	7.8/10.4	21.7/25.0	54/54	60/60	58/56 304/304	58/58	70/70	62/61 308/308	59/59	70/70	63/62 309/309	63/63	70/70	67/66 313/313
		110A	12.0/16.0	33.4/38.5	61/61	70/70	58/56 304/304	66/66	70/70	62/61 308/308	67/67	70/70	63/62 309/309	72/72	80/80	67/66 313/313
		112A	24.0/32.0	66.7/77.0	109/109	110/110	89/100 304/304	114/114	125/125	93/104 308/308	115/115	125/125	95/105 309/309	120/120	125/125	99/110 313/313
50HC*D11	208/230-3-60	112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	114/129 304/304	145/145	150/150	118/133 308/308	146/146	150/150	120/134 309/309	151/151	175/175	124/138 313/313
		112A+110A	37.6/50.0	104.2/120.3	144/144	150/150	132/150 304/304	149/149	150/150	137/154 308/308	150/150	150/150	138/155 309/309	155/155	175/175	142/160 313/313
		NONE	—	—	57/57	70/70	61/60 315	61/61	70/70	65/64 319	62/62	70/70	66/65 320	66/66	80/80	71/70 324
		117A	7.8/10.4	21.7/25.0	57/57	70/70	61/60 315/315	61/61	70/70	65/64 319/319	62/62	70/70	66/65 320/320	66/66	80/80	71/70 324/324
		110A	12.0/16.0	33.4/38.5	64/64	70/70	61/60 315/315	69/69	70/70	65/64 319/319	70/70	80/70	66/65 320/320	75/75	80/80	71/70 324/324
		112A	24.0/32.0	66.7/77.0	113/113	125/125	92/103 315/315	117/117	125/125	97/108 319/319	119/119	125/125	98/109 320/320	123/123	125/125	102/113 324/324
		112A+117A	31.8/42.4	88.4/102.0	144/144	150/150	117/132 315/315	149/149	150/150	122/136 319/319	150/150	150/150	123/137 320/320	155/155	175/175	127/142 324/324
		112A+110A	37.6/50.0	104.2/120.3	148/148	150/150	135/153 315/315	152/152	175/175	140/157 319/319	154/154	175/175	141/158 320/320	158/158	175/175	145/163 324/324
		NONE	—	—	24	30	25 122	25	30	27 124	26	30	27 124	28	30	29 126
		116A	13.9	16.7	26	30	25 122	28	30	27 124	29	30	27 124	31	35	29 126
50HC*D11	460-3-60	113A	16.5	19.8	30	30	27 122	32	35	29 124	33	35	30 124	35	35	32 126
		115A	33.0	39.7	55	60	50 122	57	60	52 124	58	60	53 124	60	60	55 126
		114A+116A	41.7	50.2	68	70	62 122	70	70	64 124	71	80	65 124	73	80	67 126
		115A+113A	50.0	60.1	65	70	73 122	68	80	76 124	68	80	76 124	74	80	78 126
		NONE	—	—	25	30	26 147	27	30	28 149	27	30	28 149	29	35	30 151
		116A	13.9	16.7	27	30	26 147	30	30	28 149	30	30	28 149	32	35	30 151
		113A	16.5	19.8	31	35	28 147	34	35	30 149	34	35	31 149	36	40	33 151
		115A	33.0	39.7	56	60	51 147	58	60	53 149	59	60	54 149	61	70	56 151
		114A+116A	41.7	50.2	69	70	63 147	72	80	65 149	72	80	66 149	74	80	68 151
		115A+113A	50.0	60.1	67	80	75 147	69	80	77 149	69	80	77 149	72	80	79 151
575-3-60	NO M. V-PH-HZ	NONE	—	—	26	30	28 152	28	30	30 154	28	30	30 154	30	35	32 156
		116A	13.9	16.7	29	30	28 152	32	35	30 154	32	35	30 154	34	35	32 156
		113A	16.5	19.8	33	35	30 152	35	35	32 154	36	40	33 154	38	40	35 156
		115A	33.0	39.7	58	60	53 152	60	60	55 154	61	70	56 154	63	70	58 156
		114A+116A	41.7	50.2	71	80	65 152	73	80	67 154	74	80	68 154	76	80	70 156
		115A+113A	50.0	60.1	69	80	76 152	71	80	79 154	71	80	79 154	74	80	81 156
		NONE	—	—	19	20	20 97	23	25	24 101	21	25	22 99	25	30	26 103
		118A	17.0	20.4	30	30	27 97	35	35	32 101	32	35	29 99	37	40	34 103
		119A	34.0	40.9	56	60	51 97	61	70	55 101	58	60	53 99	63	70	57 103
		118A+119A	51.0	61.3	66	70	75 97	71	80	79 101	68	80	76 99	73	80	81 103
575-3-60	MED	NONE	—	—	20	25	21 106	24	25	25 110	22	25	23 108	26	30	27 112
		118A	17.0	20.4	32	35	29 106	36	40	33 110	34	35	31 108	38	40	35 112
		119A	34.0	40.9	57	60	52 106	62	70	57 108	59	60	54 108	64	70	59 112
		118A+119A	51.0	61.3	67	80	76 106	72	80	80 110	70	80	78 108	74	80	82 112
		NONE	—	—	22	25	23 120	26	30	27 124	24	25	25 122	28	30	29 126
		118A	17.0	20.4	34	35	31 120	38	40	35 124	36	40	33 122	41	45	37 126
		119A	34.0	40.9	59	60	54 120	64	70	59 124	61	70	56 122	66	70	60 126
		118A+119A	51.0	61.3	70	80	78 120	74	80	82 124	72	80	80 122	76	80	84 126
		NONE	—	—	24	30	25 122	28	30	27 124	24	25	25 122	28	30	29 126
		118A	17.0	20.4	34	35	31 120	38	40	35 124	36	40	33 122	41	45	37 126

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 13 - Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced On or After July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)		
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA
50HC*D12	NO M. V-PH-HZ	NONE	—	—	50/50	60/60	52/52 279	53/53	60/60	56/56 283	54/54	60/60	57/57 284	58/58	70/70	62/61 288
		117A	7.8/10.4	21.7/25.0	50/50	60/60	52/52 279/279	53/53	60/60	56/56 283/283	54/54	60/60	57/57 284/284	58/58	70/70	62/61 288/288
		110A	12.0/16.0	33.4/38.5	57/57	60/60	52/52 279/279	62/62	70/70	56/56 283/283	63/63	70/70	57/58 284/284	68/68	70/70	62/62 288/288
		112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96 279/279	110/110	110/110	89/101 283/283	111/111	125/125	90/102 284/284	116/116	125/125	95/106 288/288
		112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125 279/279	141/141	150/150	114/129 283/283	142/142	150/150	115/131 284/284	147/147	150/150	120/135 288/288
		112A+110A	37.6/50.0	104.2/120.3	140/140	150/150	128/146 279/279	144/144	150/150	132/151 283/283	146/146	150/150	134/152 284/284	150/150	150/150	138/156 288/288
		NONE	—	—	53/53	60/60	56/55 329	57/57	70/70	60/59 333	58/58	70/70	62/60 334	62/62	70/70	66/65 338
		117A	7.8/10.4	21.7/25.0	53/53	60/60	56/55 329/329	57/57	70/70	60/59 333/333	58/58	70/70	62/60 334/334	62/62	70/70	66/65 338/338
		110A	12.0/16.0	33.4/38.5	61/61	70/70	56/56 329/329	66/66	70/70	60/60 333/333	67/67	70/70	62/61 334/334	72/72	80/80	66/65 338/338
		112A	24.0/32.0	66.7/77.0	109/109	110/110	89/100 329/329	114/114	125/125	93/104 333/333	115/115	125/125	95/105 334/334	120/120	125/125	99/110 338/338
460-3-60	STD	112A+117A	31.8/42.4	88.4/102.0	144/144	150/150	114/129 329/329	145/145	150/150	118/133 333/333	146/146	150/150	120/134 334/334	151/151	175/175	124/138 338/338
		112A+110A	37.6/50.0	104.2/120.3	148/148	150/150	135/153 340/340	152/152	175/175	140/157 344/344	154/154	175/175	141/158 345/345	158/158	175/175	145/163 349/349
		NONE	—	—	25	30	26 134	26	30	28 136	27	30	28 136	29	35	30 138
		116A	13.9	16.7	26	30	26 134	28	30	28 136	29	30	28 136	31	35	30 138
		113A	16.5	19.8	30	30	27 134	32	35	29 136	33	35	30 136	35	35	32 138
		115A	33.0	39.7	55	60	50 134	57	60	52 136	58	60	53 136	60	60	55 138
		114A+116A	41.7	50.2	68	70	62 134	70	70	64 136	71	80	65 136	73	80	67 138
		115A+113A	50.0	60.1	65	70	73 134	68	80	76 136	68	80	76 136	74	80	78 138
		NONE	—	—	26	30	27 159	28	30	29 161	28	30	29 161	30	35	32 163
		116A	13.9	16.7	27	30	27 159	30	30	29 161	30	30	29 161	32	35	32 163
575-3-60	STD	113A	16.5	19.8	31	35	28 159	34	35	30 161	34	35	31 161	36	40	33 163
		115A	33.0	39.7	56	60	51 159	58	60	53 161	59	60	54 161	61	70	56 163
		114A+116A	41.7	50.2	69	70	63 159	72	80	65 161	72	80	66 161	74	80	68 163
		115A+113A	50.0	60.1	67	80	75 159	69	80	77 161	69	80	77 161	72	80	79 163
		NONE	—	—	27	30	29 164	29	35	31 166	29	35	31 166	31	35	33 168
		116A	13.9	16.7	29	30	29 164	32	35	31 166	32	35	31 166	34	35	33 168
		113A	16.5	19.8	33	35	30 164	35	35	32 166	36	40	33 166	38	40	35 168
		115A	33.0	39.7	58	60	53 164	60	60	55 166	61	70	56 166	63	70	58 168
		114A+116A	41.7	50.2	71	80	65 164	73	80	67 166	74	80	68 166	76	80	70 168
		115A+113A	50.0	60.1	69	80	76 164	71	80	79 166	71	80	79 166	74	80	81 168
50HC*D12	MED	NONE	—	—	19	25	20 107	23	25	24 111	21	25	22 109	25	30	26 113
		118A	17.0	20.4	30	30	27 107	35	35	32 111	32	35	29 109	37	40	34 113
		119A	34.0	40.9	56	60	51 107	61	70	55 111	58	60	53 109	63	70	57 113
		118A+119A	51.0	61.3	66	70	75 107	71	80	79 111	68	80	76 109	73	80	81 113
		NONE	—	—	20	25	21 116	24	30	26 120	22	25	23 118	26	30	27 122
		118A	17.0	20.4	32	35	29 116	36	40	33 120	34	35	31 118	38	40	35 122
		119A	34.0	40.9	57	60	52 116	62	70	57 118	59	60	54 118	64	70	59 122
		118A+119A	51.0	61.3	67	80	76 116	72	80	80 120	70	80	78 118	74	80	82 122
		NONE	—	—	22	25	23 130	26	30	27 134	24	25	25 132	28	30	29 136
		118A	17.0	20.4	34	35	31 130	38	40	35 134	36	40	33 132	41	45	37 136
50HC*D12	HIGH	119A	34.0	40.9	59	60	54 130	64	70	56 134	61	70	56 132	66	70	60 136
		118A+119A	51.0	61.3	70	80	78 130	74	80	82 134	72	80	80 132	76	80	84 136

See "Legend and Notes for Tables 10 — 17" on page 48.

ELECTRICAL DATA FOR UNITS PRODUCED PRIOR TO JULY 30, 2012

NOTE: Check the serial number of unit to verify production date.

To confirm the date of manufacture, locate the unit nameplate and check the first four digits of the Serial Number. If the number listed in the first 4 digits of the Serial Number is 3012 or lower, the unit was produced prior to July 30, 2012.

Position:	1	2	3	4	5	6	7	8	9	10
Example:	3	1	1	2	U	1	2	3	4	5

Week of manufacture
(fiscal calendar)

Sequence number

Year of manufacture
("12" = 2012)

Manufacturing location

C12562A

50HC

Table 14 – Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced Prior to July 30, 2012

UNIT	NOM. V-PH-HZ	IFM TYPE	ELEC. HTR		NO C.O. or UNPWR C.O.								w/ PWRD C.O.										
			CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrdr fr/unit)			NO P.E.			w/ P.E. (pwrdr fr/unit)								
						MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA						
50HC**07	208/230-3-60	STD	NONE	—	—	32	50	31	148	36	50	36	152	37	50	37	153	41	50	41	50	41	157
			264A	4.9/6.5	13.6/15.6	32/32	50/50	31/31	148/148	36/36	50/50	36/36	152/152	37/37	50/50	37/37	153/153	41/41	50/50	41/41	50/50	41/41	157/157
			117A	7.8/10.4	21.7/25.0	34/38	50/50	31/35	148/148	39/43	50/50	36/39	152/152	40/44	50/50	37/40	153/153	45/49	50/50	41/45	50/50	41/45	157/157
			110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	148/148	53/60	60/60	49/55	152/152	55/61	60/70	50/56	153/153	59/66	60/70	54/60	60/70	54/60	157/157
			117A+117A	15.8/21.0	43.8/50.5	62/70	70/70	56/64	148/148	66/75	70/80	61/68	152/152	68/76	70/80	62/70	153/153	72/81	80/90	66/74	80/90	66/74	157/157
	110A+117A	19.9/26.5	55.2/63.8	76/87	80/90	69/79	148/148	81/91	90/100	74/84	152/152	82/93	90/100	75/85	153/153	87/97	90/100	79/89	90/100	79/89	157/157		
	208/230-3-60	MED	NONE	—	—	35	50	34	185	39	50	38	189	40	50	39	190	43	60	44	60	44	194
			264A	4.9/6.5	13.6/15.6	35/35	50/50	34/34	185/185	39/39	50/50	38/38	189/189	40/40	50/50	39/39	190/190	43/43	60/60	44/44	60/60	44/44	194/194
			117A	7.8/10.4	21.7/25.0	37/41	50/50	34/37	185/185	42/46	50/50	38/42	189/189	43/47	50/50	39/43	190/190	48/52	60/60	44/47	60/60	44/47	194/194
			110A	12.0/16.0	33.4/38.5	52/58	60/60	47/53	185/185	56/63	60/70	51/57	189/189	58/64	60/70	53/58	190/190	62/69	70/70	57/63	70/70	57/63	194/194
117A+117A			15.8/21.0	43.8/50.5	65/73	70/80	59/67	185/185	69/78	70/80	63/71	189/189	71/79	80/80	65/72	190/190	75/84	80/90	69/77	80/90	69/77	194/194	
110A+117A	19.9/26.5	55.2/63.8	79/90	80/90	72/82	185/185	84/94	90/100	76/86	189/189	85/96	90/100	78/88	190/190	90/100	90/100	82/92	90/100	82/92	194/194			
460-3-60	HIGH	NONE	—	—	42	60	43	211	46	60	47	215	47	60	48	216	51	60	52	60	52	220	
		264A	4.9/6.5	13.6/15.6	42/42	60/60	43/43	211/211	46/46	60/60	47/47	215/215	47/47	60/60	48/48	216/216	51/51	60/60	52/52	60/60	52/52	220/220	
		117A	7.8/10.4	21.7/25.0	46/50	60/60	43/46	211/211	51/55	60/60	47/50	215/215	52/56	60/60	48/52	216/216	57/61	60/70	52/56	60/70	52/56	220/220	
		110A	12.0/16.0	33.4/38.5	61/67	70/70	56/62	211/211	66/72	70/80	60/66	215/215	67/73	70/80	61/67	216/216	72/78	80/80	66/71	80/80	66/71	220/220	
		117A+117A	15.8/21.0	43.8/50.5	74/82	80/90	68/75	211/211	79/87	80/90	72/80	215/215	80/88	80/90	73/81	216/216	85/93	90/100	78/85	90/100	78/85	220/220	
110A+117A	19.9/26.5	55.2/63.8	88/99	90/100	81/91	211/211	93/104	100/110	85/95	215/215	94/105	100/110	86/96	216/216	99/110	100/110	91/101	100/110	91/101	220/220			
460-3-60	STD	NONE	—	—	17	25	16	75	19	25	18	77	19	25	19	77	21	30	21	30	21	79	
		265A	6.0	7.2	17	25	16	75	19	25	18	77	19	25	19	77	21	30	21	30	21	79	
		266A	11.5	13.8	21	25	19	75	23	25	21	77	24	25	21	77	26	30	23	30	23	79	
		267A	14.0	16.8	25	25	22	75	27	30	24	77	27	30	25	77	29	30	27	30	27	79	
		268A	23.0	27.7	38	40	35	75	41	45	37	77	41	45	37	77	43	45	39	45	39	79	
269A	25.5	30.7	42	45	38	75	44	45	40	77	45	45	41	77	47	50	43	50	43	79			
460-3-60	MED	NONE	—	—	18	25	17	94	19	25	19	96	20	25	19	96	22	30	22	30	22	98	
		265A	6.0	7.2	18	25	17	94	19	25	19	96	20	25	19	96	22	30	22	30	22	98	
		266A	11.5	13.8	22	25	20	94	24	25	22	96	25	25	22	96	27	30	24	30	24	98	
		267A	14.0	16.8	26	30	23	94	28	30	25	96	28	30	26	96	31	35	28	30	28	98	
		268A	23.0	27.7	39	40	36	94	42	45	38	96	42	45	38	96	44	45	40	45	40	98	
269A	25.5	30.7	43	45	39	94	45	45	41	96	46	50	42	96	48	50	44	50	44	98			
575-3-60	STD	NONE	—	—	22	30	22	107	23	30	24	109	24	30	24	109	26	30	26	30	26	111	
		265A	6.0	7.2	22	30	22	107	23	30	24	109	24	30	24	109	26	30	26	30	26	111	
		266A	11.5	13.8	27	30	24	107	29	30	26	109	30	30	27	109	32	35	29	30	29	111	
		267A	14.0	16.8	31	35	28	107	33	35	30	109	33	35	30	109	36	40	32	40	32	111	
		268A	23.0	27.7	44	45	40	107	47	50	42	109	47	50	43	109	49	50	45	50	45	111	
269A	25.5	30.7	48	50	44	107	50	50	46	109	51	60	46	109	53	60	48	60	48	111			
575-3-60	MED	NONE	—	—	12	15	11	61	16	20	16	65	14	20	13	63	18	20	18	20	18	67	
		118A	17.0	20.4	27	30	25	61	32	35	29	65	30	30	27	63	34	35	31	35	31	67	
		299A	25.7	25.8	34	35	31	61	39	40	35	65	36	40	33	63	41	45	37	45	37	67	
		NONE	—	—	14	20	13	76	18	20	17	80	15	20	15	78	19	25	19	25	19	82	
		118A	17.0	20.4	29	30	27	76	34	35	31	80	32	35	29	78	36	40	33	40	33	82	
299A	25.7	25.8	36	40	33	76	41	45	37	80	38	40	35	78	43	45	39	45	39	82			
575-3-60	HIGH	NONE	—	—	17	20	16	90	20	25	21	94	18	25	18	92	22	25	23	25	23	96	
		118A	17.0	20.4	33	35	30	90	38	40	34	94	35	35	32	92	40	40	36	40	36	96	
		299A	25.7	25.8	40	40	36	90	44	45	40	94	42	45	38	92	47	50	42	50	42	96	
		NONE	—	—	12	15	11	61	16	20	16	65	14	20	13	63	18	20	18	20	18	67	
		118A	17.0	20.4	27	30	25	61	32	35	29	65	30	30	27	63	34	35	31	35	31	67	

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 14 - Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced Prior to July 30, 2012 (cont)

UNIT	NOM. V-PH-HZ	IFM TYPE	ELEC. HTR		NO C.O. or UNPWR C.O.						w/ PWRD C.O.										
			CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ P.E. (pwrd fr/unit)			NO PE.			w/ P.E. (pwrd fr/unit)						
						MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA				
50HC**08	208/230-3-60	STD	NONE	-	-	39	50	41	191	43	50	45	195	44	50	46	196	48	60	51	200
			117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	191/191	43/43	50/50	45/45	195/195	44/44	50/50	46/46	196/196	48/49	60/60	51/51	200/200
			110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	191/191	53/60	60/60	49/55	195/195	55/61	60/70	50/56	196/196	59/66	60/70	54/60	200/200
			111A	18.6/24.8	51.7/59.7	72/82	80/90	65/75	191/191	76/86	80/90	70/79	195/195	78/88	80/90	71/80	196/196	82/92	90/100	75/85	200/200
			112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	191/191	95/108	100/110	87/99	195/195	101/114	110/125	88/100	196/196	101/114	110/125	93/104	200/200
		MED	112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	191/191	122/139	125/150	112/128	195/195	123/140	125/150	113/129	196/196	128/145	150/150	118/133	200/200
			NONE	-	-	39	50	41	202	43	50	45	206	44	50	46	207	48	60	51	211
			117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	202/202	43/43	50/50	45/45	206/206	44/44	50/50	46/46	207/207	48/49	60/60	51/51	211/211
			110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	202/202	53/60	60/60	49/55	206/206	55/61	60/70	50/56	207/207	59/66	60/70	54/60	211/211
			111A	18.6/24.8	51.7/59.7	72/82	80/90	65/75	202/202	76/86	80/90	70/79	206/206	78/88	80/90	71/80	207/207	82/92	90/100	75/85	211/211
		HIGH	112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	202/202	95/108	100/110	87/99	206/206	96/109	100/110	88/100	207/207	101/114	110/125	93/104	211/211
			112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	202/202	122/139	125/150	112/128	206/206	123/140	125/150	113/129	207/207	128/145	150/150	118/133	211/211
			NONE	-	-	44	50	46	245	48	60	51	249	49	60	52	250	53	60	56	254
			117A	7.8/10.4	21.7/25.0	44/44	50/50	46/46	245/245	48/49	60/60	51/51	249/249	49/50	60/60	52/52	250/250	53/55	60/60	56/56	254/254
			110A	12.0/16.0	33.4/38.5	55/61	60/70	50/56	245/245	59/66	60/70	54/60	249/249	61/67	70/70	55/61	250/250	65/72	70/80	60/66	254/254
		STD	111A	18.6/24.8	51.7/59.7	78/88	80/90	71/80	245/245	82/92	90/100	75/85	249/249	84/94	90/100	76/86	250/250	88/98	90/100	81/90	254/254
			112A	24.0/32.0	66.7/77.0	96/109	100/110	88/100	245/245	101/114	110/125	93/104	249/249	102/115	110/125	94/106	250/250	107/120	110/125	98/110	254/254
			112A+117A	31.8/42.4	88.4/102.0	123/140	125/150	113/129	245/245	128/145	150/150	118/133	249/249	129/146	150/150	119/134	250/250	134/151	150/175	123/139	254/254
			NONE	-	-	18	20	19	95	20	25	21	97	21	25	21	97	22	25	23	99
			116A	13.9	16.7	25	25	22	95	27	30	24	97	27	30	25	97	30	30	30	99
		MED	113A	16.5	19.8	28	30	26	95	31	35	28	97	31	35	28	97	33	35	30	99
			114A	27.8	33.4	45	50	41	95	48	50	44	97	48	50	44	97	50	60	46	99
			115A	33.0	39.7	53	60	49	95	56	60	51	97	56	60	51	97	58	60	53	99
			114A+116A	41.7	50.2	66	70	61	95	69	70	63	97	69	70	63	97	71	80	65	99
			NONE	-	-	18	20	19	101	20	25	21	103	21	25	21	103	22	25	23	105
		HIGH	116A	13.9	16.7	25	25	22	101	27	30	24	103	27	30	25	103	30	30	27	105
			113A	16.5	19.8	28	30	26	101	31	35	28	103	31	35	28	103	33	35	30	105
			114A	27.8	33.4	45	50	41	101	48	50	43	103	48	50	44	103	50	60	46	105
			115A	33.0	39.7	53	60	49	101	56	60	51	103	56	60	51	103	58	60	53	105
			114A+116A	41.7	50.2	66	70	61	101	69	70	63	103	69	70	63	103	71	80	65	105
		STD	NONE	-	-	20	25	21	123	22	25	23	125	22	25	23	125	24	30	26	127
			116A	13.9	16.7	27	30	24	123	29	30	26	125	30	30	27	125	32	35	29	127
			113A	16.5	19.8	31	35	28	123	33	35	30	125	33	35	30	125	36	40	32	127
			114A	27.8	33.4	48	50	43	123	50	50	46	125	50	60	46	125	53	60	48	127
			115A	33.0	39.7	56	60	51	123	58	60	53	125	58	60	53	125	61	70	55	127
		MED	114A+116A	41.7	50.2	69	70	63	123	71	80	65	125	71	80	65	125	74	80	67	127
			NONE	-	-	12	15	12	77	16	20	17	81	14	15	14	79	18	20	19	83
			118A	17.0	20.4	27	30	25	77	32	35	29	81	30	30	27	79	34	35	31	83
			119A	34.0	40.9	53	60	48	77	58	60	53	81	55	60	50	79	60	60	55	83
			NONE	-	-	13	15	13	81	17	20	18	85	15	20	15	83	19	20	20	87
		HIGH	118A	17.0	20.4	28	30	26	81	33	35	30	85	31	35	28	83	35	32	32	87
			119A	34.0	40.9	54	60	49	81	59	60	54	85	56	60	51	83	61	70	56	87
			NONE	-	-	14	15	14	92	18	20	19	96	16	20	16	94	19	25	21	98
			118A	17.0	20.4	29	30	27	92	34	35	31	96	32	35	29	94	36	40	33	98
			119A	34.0	40.9	55	60	50	92	60	60	55	96	57	60	52	94	62	70	57	98

See "Legend and Notes for Tables 10 — 17" on page 48.

50HC

Table 14 - Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR		NO C.O. or UNPWR C.O.						w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO PE.			w/ P.E. (pwrdr fr/unit)			NO PE.			w/ P.E. (pwrdr fr/unit)					
					MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA LRA			
	STD	NONE	—	—	39	50	41	191	43	50	45	195	44	46	196	48	60	51	200
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	191/191	43/43	50/50	45/45	195/195	44/44	46/46	196/196	48/49	60/60	51/51	200/200
		110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	191/191	53/60	60/60	49/55	195/195	55/61	50/56	196/196	59/66	60/70	54/60	200/200
		111A	18.6/24.8	51.7/59.7	72/82	80/90	65/75	191/191	76/86	80/90	70/79	195/195	78/88	71/80	196/196	82/92	90/100	75/85	200/200
		112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	191/191	95/108	100/110	87/99	195/195	96/109	88/100	196/196	101/114	110/125	93/104	200/200
		112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	191/191	122/139	125/150	112/128	195/195	123/140	113/129	196/196	128/145	150/150	118/133	200/200
208/230-3-60	MED	NONE	—	—	39	50	41	202	43	50	45	206	44	46	207	48	60	51	211
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	202/202	43/43	50/50	45/45	206/206	44/44	46/46	207/207	48/49	60/60	51/51	211/211
		110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	202/202	53/60	60/60	49/55	206/206	55/61	50/56	207/207	59/66	60/70	54/60	211/211
		111A	18.6/24.8	51.7/59.7	72/82	80/90	65/75	202/202	76/86	80/90	70/79	206/206	78/88	71/80	207/207	82/92	90/100	75/85	211/211
		112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	202/202	95/108	100/110	87/99	206/206	96/109	88/100	207/207	101/114	110/125	93/104	211/211
		112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	202/202	122/139	125/150	112/128	206/206	123/140	113/129	207/207	128/145	150/150	118/133	211/211
50HC**09	HIGH	NONE	—	—	44	50	46	245	48	60	51	249	49	52	250	53	60	56	254
		117A	7.8/10.4	21.7/25.0	44/44	50/50	46/46	245/245	48/49	60/60	51/51	249/249	49/50	52/52	250/250	53/55	60/60	56/56	254/254
		110A	12.0/16.0	33.4/38.5	55/61	60/70	50/56	245/245	59/66	60/70	54/60	249/249	61/67	55/61	250/250	65/72	70/80	60/66	254/254
		111A	18.6/24.8	51.7/59.7	78/88	80/90	71/80	245/245	82/92	90/100	75/85	249/249	84/94	76/86	250/250	88/98	90/100	81/90	254/254
		112A	24.0/32.0	66.7/77.0	96/109	100/110	88/100	245/245	101/114	110/125	93/104	249/249	102/115	94/106	250/250	107/120	110/125	98/110	254/254
		112A+117A	31.8/42.4	88.4/102.0	123/140	125/150	113/129	245/245	128/145	150/150	118/133	249/249	129/146	119/134	250/250	134/151	150/175	123/139	254/254
	STD	NONE	—	—	19	20	19	95	20	25	21	97	21	22	97	23	25	24	99
		116A	13.9	16.7	25	25	22	95	27	30	24	97	27	25	97	30	30	27	99
		113A	16.5	19.8	28	30	26	95	31	35	28	97	31	28	97	33	35	30	99
		114A	27.8	33.4	45	50	41	95	48	50	43	97	48	44	97	50	60	46	99
		115A	33.0	39.7	53	60	49	95	56	60	51	97	56	51	97	58	60	53	99
		114A+116A	41.7	50.2	66	70	61	95	69	70	63	97	69	63	97	71	80	65	99
460-3-60	MED	NONE	—	—	19	20	19	101	20	25	21	103	21	22	103	23	25	24	105
		116A	13.9	16.7	25	25	22	101	27	30	24	103	27	25	103	30	30	27	105
		113A	16.5	19.8	28	30	26	101	31	35	28	103	31	28	103	33	35	30	105
		114A	27.8	33.4	45	50	41	101	48	50	43	103	48	44	103	50	60	46	105
		115A	33.0	39.7	53	60	49	101	56	60	51	103	56	51	103	58	60	53	105
		114A+116A	41.7	50.2	66	70	61	101	69	70	63	103	69	63	103	71	80	65	105
	HIGH	NONE	—	—	20	25	21	123	22	25	23	125	23	24	125	24	30	26	127
		116A	13.9	16.7	27	30	24	123	29	30	26	125	30	27	125	32	35	29	127
		113A	16.5	19.8	31	35	28	123	33	35	26	125	33	30	125	36	40	32	127
		114A	27.8	33.4	48	50	43	123	50	50	46	125	50	46	125	53	60	48	127
		115A	33.0	39.7	56	60	51	123	58	60	53	125	58	53	125	61	70	55	127
		114A+116A	41.7	50.2	69	70	63	123	71	80	65	125	71	65	125	74	80	67	127
575-3-60	STD	NONE	—	—	14	15	14	77	17	20	18	81	15	16	79	19	20	20	83
		118A	17.0	20.4	27	30	25	77	32	35	29	81	30	27	79	34	35	31	83
		119A	34.0	40.9	53	60	48	77	58	60	53	81	55	50	79	60	60	55	83
	MED	NONE	—	—	14	20	15	81	18	20	19	85	16	17	83	20	25	21	87
		118A	17.0	20.4	28	30	26	81	33	35	30	85	31	28	83	35	35	32	87
		119A	34.0	40.9	54	60	49	81	59	60	54	85	56	51	83	61	70	56	87
	HIGH	NONE	—	—	15	20	16	92	19	20	20	96	17	18	94	21	25	22	98
		118A	17.0	20.4	29	30	27	92	34	35	31	96	32	29	94	36	40	33	98
		119A	34.0	40.9	55	60	50	92	60	60	55	96	57	52	94	62	70	57	98

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 14 - Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.				w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)			w/ PWRD C.O.						
					MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	FUSE or HACR BRKR	MCA	DISC. SIZE	FLA	LRA
50HC**11	STD	NONE	—	—	49	60	51	257	53	53	60	55	261	54	60	57	262	57	70	61	266	266/266		
		117A	7.8/10.4	21.7/25.0	49/49	60/60	51/51	257/257	53/53	53/53	60/60	55/55	261/261	54/54	60/60	57/57	262/262	57/57	70/70	61/61	266/266	266/266		
		110A	12.0/16.0	33.4/38.5	49/55	60/60	51/51	257/257	53/53	53/53	60/60	55/55	261/261	55/61	60/70	57/57	262/262	59/66	70/70	61/61	266/266	266/266		
		112A	24.0/32.0	66.7/77.0	90/103	60/110	83/95	257/257	95/108	95/108	100/110	87/99	261/261	96/109	100/110	88/100	262/262	101/114	110/125	93/104	266/266	266/266		
		112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	257/257	122/139	122/139	125/150	112/128	261/261	123/140	125/150	113/129	262/262	128/145	150/150	118/133	266/266	266/266		
	112A+110A	37.6/50.0	104.2/120.3	137/127	150/150	126/144	257/257	142/132	142/132	150/150	130/149	261/261	143/133	150/150	131/150	262/262	148/138	150/150	136/154	266/266	266/266			
	MED	NONE	—	—	54	60	57	300	57	57	70	61	304	58	70	62	305	62	70	66	309	309/309		
		117A	7.8/10.4	21.7/25.0	54/54	60/60	57/57	300/300	57/57	57/57	70/70	61/61	304/304	58/58	70/70	62/62	305/305	62/62	70/70	66/66	309/309	309/309		
		110A	12.0/16.0	33.4/38.5	55/61	60/70	57/57	300/300	59/66	59/66	70/70	61/61	304/304	61/67	70/70	62/62	305/305	65/72	70/80	66/66	309/309	309/309		
		112A	24.0/32.0	66.7/77.0	96/109	100/110	88/100	300/300	101/114	101/114	110/125	93/104	304/304	102/115	110/125	94/106	305/305	107/120	110/125	98/110	309/309	309/309		
112A+117A		31.8/42.4	88.4/102.0	123/140	125/150	113/129	300/300	128/145	128/145	150/150	118/133	304/304	129/146	150/150	119/134	305/305	134/151	150/175	123/139	309/309	309/309			
112A+110A	37.6/50.0	104.2/120.3	143/133	150/150	131/150	300/300	148/138	148/138	150/150	136/154	304/304	149/139	150/150	137/155	305/305	154/144	175/175	141/160	309/309	309/309				
HIGH	NONE	—	—	59	70	62	309	62	62	70	67	313	63	70	68	314	67	80	72	318	318/318			
	117A	7.8/10.4	21.7/25.0	59/59	70/70	62/62	309/309	62/62	62/62	70/70	67/67	313/313	63/63	70/70	68/68	314/314	67/67	80/80	72/72	318/318	318/318			
	110A	12.0/16.0	33.4/38.5	61/67	70/70	62/62	309/309	66/72	66/72	70/80	67/67	313/313	67/73	70/80	68/68	314/314	72/78	80/80	72/72	318/318	318/318			
	112A	24.0/32.0	66.7/77.0	103/115	110/125	94/106	309/309	107/120	107/120	110/125	98/110	313/313	109/121	110/125	99/111	314/314	113/126	125/150	104/116	318/318	318/318			
	112A+117A	31.8/42.4	88.4/102.0	130/147	150/150	119/135	309/309	134/151	134/151	150/175	123/139	313/313	136/153	150/175	124/140	314/314	140/157	150/175	129/144	318/318	318/318			
112A+110A	37.6/50.0	104.2/120.3	149/140	150/175	137/156	309/309	154/144	154/144	175/175	141/160	313/313	155/146	175/175	143/161	314/314	160/150	175/175	147/165	318/318	318/318				
STD	NONE	—	—	22	25	23	123	24	24	30	25	125	25	30	26	125	26	30	28	127	127			
	116A	13.9	16.7	25	25	23	123	27	27	30	25	125	27	30	26	125	30	30	28	127	127			
	113A	16.5	19.8	28	30	26	123	31	31	35	28	125	31	35	28	125	33	35	30	127	127			
	115A	33.0	39.7	53	60	49	123	56	56	60	51	125	56	60	51	125	58	60	53	127	127			
	114A+116A	41.7	50.2	66	70	61	123	69	69	70	63	125	69	70	63	125	71	80	65	127	127			
115A+113A	50.0	60.1	64	70	72	123	66	66	70	74	125	67	70	75	125	69	70	77	127	127				
MED	NONE	—	—	24	30	25	145	26	26	30	27	147	26	30	28	147	28	30	30	149	149			
	116A	13.9	16.7	27	30	25	145	29	29	30	27	147	30	30	28	147	32	35	30	149	149			
	113A	16.5	19.8	31	35	28	145	33	33	35	30	147	33	35	30	147	36	40	32	149	149			
	115A	33.0	39.7	56	60	51	145	58	58	60	53	147	58	60	53	147	61	70	55	149	149			
	114A+116A	41.7	50.2	69	70	63	145	71	71	80	65	147	71	80	65	147	74	80	67	149	149			
115A+113A	50.0	60.1	66	80	74	145	68	68	80	76	147	69	80	77	147	71	80	79	149	149				
HIGH	NONE	—	—	27	30	29	149	29	29	35	31	151	30	35	31	151	31	35	33	153	153			
	116A	13.9	16.7	31	35	29	149	33	33	35	31	151	33	35	31	151	36	40	33	153	153			
	113A	16.5	19.8	34	35	31	149	37	37	40	33	151	37	40	34	151	39	40	36	153	153			
	115A	33.0	39.7	59	60	54	149	62	62	70	56	151	62	70	57	151	64	70	59	153	153			
	114A+116A	41.7	50.2	72	80	66	149	75	75	80	68	151	75	80	69	151	77	80	71	153	153			
115A+113A	50.0	60.1	70	80	78	149	72	72	80	80	151	73	80	80	151	75	80	82	153	153				
STD	NONE	—	—	18	20	18	95	21	21	25	23	99	19	25	20	97	23	25	24	101	101			
	118A	17.0	20.4	28	30	26	95	33	33	35	30	99	31	35	28	97	35	35	32	101	101			
	119A	34.0	40.9	54	60	49	95	59	59	60	54	99	56	60	51	97	61	70	56	101	101			
	118A+119A	51.0	61.3	64	70	73	95	69	69	80	77	99	66	70	75	97	71	80	79	101	101			
	NONE	—	—	18	20	19	106	22	22	25	23	110	20	25	21	108	24	25	25	112	112			
MED	118A	17.0	20.4	29	30	27	106	34	34	35	30	110	32	35	29	108	36	40	33	112	112			
	119A	34.0	40.9	55	60	50	106	60	60	60	55	110	57	60	52	108	62	70	57	112	112			
	118A+119A	51.0	61.3	65	70	74	106	70	70	80	78	110	67	70	76	108	72	80	80	112	112			
	NONE	—	—	21	25	22	120	25	25	30	27	124	23	25	24	122	27	30	29	126	126			
	118A	17.0	20.4	33	35	30	120	38	38	40	34	124	35	35	32	122	40	40	36	126	126			
119A	34.0	40.9	59	60	53	120	63	63	70	58	124	61	70	55	122	65	70	60	126	126				
118A+119A	51.0	61.3	69	80	77	120	74	74	80	81	124	71	80	79	122	76	80	83	126	126				

See "Legend and Notes for Tables 10—17" on page 48.



Table 14 - Unit Wire/Fuse or HACR Breaker Sizing Data — Units Produced Prior to July 30, 2012 (cont)

UNIT	NOM. V-Ph-HZ	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.									
		IFM TYPE	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrdr fr/unit)			NO P.E.			w/ PWRD C.O.						
					MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	MCA	FUSE or HACR BRKR	DISC. SIZE	FLA	LRA	
STD		NONE	—	—	48	60	50	282	51	60	54	286	52	60	55	287	56	60	60	291
		117A	7.8/10.4	21.7/25.0	48/48	60/60	50/50	282/282	51/51	60/60	54/54	286/286	52/52	60/60	55/55	287/287	56/56	60/60	60	291/291
		110A	12.0/16.0	33.4/38.5	49/55	60/60	50/50	282/282	53/60	60/60	54/55	286/286	55/61	60/70	55/56	287/287	59/66	60/70	60	291/291
		112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	282/282	95/108	100/110	87/99	286/286	96/109	100/110	88/100	287/287	101/114	100/110	93	291/291
		112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	282/282	122/139	125/150	112/128	286/286	123/140	125/150	113/129	287/287	128/145	150/150	118	291/291
MED	208/230-3-60	112A+110A	37.6/50.0	104.2/120.3	137/127	150/150	126/144	282/282	142/132	150/150	130/149	286/286	143/133	150/150	131/150	287/287	148/138	150/150	136	291/291
		NONE	—	—	52	60	55	325	56	60	60	329	57	70	61	330	61	70	65	334
		117A	7.8/10.4	21.7/25.0	52/52	60/60	55/55	325/325	56/56	60/60	60/60	329/329	57/57	70/70	61/61	330/330	61/61	70/70	65	334/334
		110A	12.0/16.0	33.4/38.5	55/61	60/70	55/56	325/325	59/66	60/70	60/60	329/329	61/67	70/70	61/61	330/330	65/72	70/80	65	334/334
		112A	24.0/32.0	66.7/77.0	96/109	100/110	88/100	325/325	101/114	110/125	93/104	329/329	102/115	110/125	94/106	330/330	107/120	110/125	98	334/334
HIGH		112A+117A	31.8/42.4	88.4/102.0	123/140	125/150	113/129	325/325	128/145	150/150	118/133	329/329	129/146	150/150	119/134	330/330	137/155	150/175	123	334/334
		112A+110A	37.6/50.0	104.2/120.3	143/133	150/150	131/150	325/325	148/138	150/150	136/154	329/329	149/139	150/150	137/155	330/330	154/144	175/175	141	334/334
		NONE	—	—	57	70	61	334	61	70	65	338	62	70	66	339	66	80	71	343
		117A	7.8/10.4	21.7/25.0	57/57	70/70	61/61	334/334	61/61	70/70	65/65	338/338	62/62	70/70	66/66	339/339	66/66	80/80	71	343/343
		110A	12.0/16.0	33.4/38.5	61/67	70/70	61/62	334/334	66/72	70/80	65/66	338/338	67/73	70/80	66/67	339/339	72/78	80/80	71	343/343
STD		112A	24.0/32.0	66.7/77.0	103/115	110/125	94/106	334/334	107/120	110/125	98/110	338/338	109/121	110/125	99/111	339/339	113/126	125/150	104	343/343
		112A+117A	31.8/42.4	88.4/102.0	130/147	150/150	119/135	334/334	134/151	150/175	123/139	338/338	136/153	150/175	124/140	339/339	140/157	150/175	129	343/343
		112A+110A	37.6/50.0	104.2/120.3	149/147	150/175	137/156	334/334	154/144	150/175	141/160	338/338	155/146	175/175	143/161	339/339	160/150	175/175	147	343/343
		NONE	—	—	23	30	24	135	25	30	26	137	26	30	27	137	27	30	29	139
		116A	13.9	16.7	25	30	24	135	27	30	26	137	27	30	27	137	30	30	29	139
MED		113A	16.5	19.8	28	30	26	135	31	35	28	137	31	35	28	137	33	35	30	139
		115A	33.0	39.7	53	60	49	135	56	60	51	137	56	60	51	137	58	60	53	139
		114A+116A	41.7	50.2	66	70	61	135	69	70	63	137	69	70	63	137	71	80	65	139
		115A+113A	50.0	60.1	64	70	72	135	66	70	74	137	67	70	75	137	69	70	77	139
		NONE	—	—	25	30	26	157	27	30	28	159	27	30	29	159	29	35	31	161
HIGH		116A	13.9	16.7	27	30	26	157	29	30	28	159	30	30	29	159	32	35	31	161
		113A	16.5	19.8	31	35	28	157	33	35	30	159	33	35	30	159	36	40	32	161
		115A	33.0	39.7	56	60	51	157	58	60	53	159	58	60	53	159	61	70	55	161
		114A+116A	41.7	50.2	69	70	63	157	71	80	65	159	71	80	65	159	74	80	67	161
		115A+113A	50.0	60.1	66	80	74	157	68	80	76	159	69	80	77	159	71	80	79	161
STD		NONE	—	—	28	30	30	161	30	35	32	163	30	35	32	163	32	35	34	165
		116A	13.9	16.7	31	35	30	161	33	35	32	163	33	35	32	163	36	40	34	165
		113A	16.5	19.8	34	35	31	161	37	40	33	163	37	40	34	163	39	40	36	165
		115A	33.0	39.7	59	60	54	161	62	70	56	163	62	70	57	163	64	70	59	165
		114A+116A	41.7	50.2	72	80	66	161	75	80	68	163	75	80	69	163	77	80	71	165
MED	575-3-60	115A+113A	50.0	60.1	70	80	78	161	72	80	80	163	73	80	80	163	75	80	82	165
		NONE	—	—	18	20	18	105	22	25	23	109	19	25	20	107	23	25	25	111
		118A	17.0	20.4	28	30	26	105	33	35	30	109	31	35	28	107	35	35	32	111
		119A	34.0	40.9	54	60	49	105	59	60	54	109	56	60	51	107	61	70	56	111
		118A+119A	51.0	61.3	64	70	73	105	69	80	77	109	66	70	75	107	71	80	79	111
HIGH		NONE	—	—	19	20	19	116	22	25	24	120	20	25	21	118	24	30	26	122
		118A	17.0	20.4	29	30	27	116	34	35	31	120	32	35	29	118	36	40	33	122
		119A	34.0	40.9	55	60	50	116	60	60	55	120	57	60	52	118	62	70	57	122
		118A+119A	51.0	61.3	65	70	74	116	70	80	78	120	67	70	76	118	72	80	80	122
		NONE	—	—	21	25	22	130	25	30	27	134	23	25	24	132	27	30	29	136
STD		118A	17.0	20.4	33	35	30	130	38	40	34	134	35	35	32	132	40	40	36	136
		119A	34.0	40.9	59	60	53	130	63	70	58	134	61	70	55	132	65	70	60	136
		118A+119A	51.0	61.3	69	80	77	130	74	80	81	134	71	80	79	132	76	80	83	136
		NONE	—	—	21	25	22	130	25	30	27	134	23	25	24	132	27	30	29	136
		118A	17.0	20.4	33	35	30	130	38	40	34	134	35	35	32	132	40	40	36	136
HIGH		119A	34.0	40.9	59	60	53	130	63	70	58	134	61	70	55	132	65	70	60	136
		118A+119A	51.0	61.3	69	80	77	130	74	80	81	134	71	80	79	132	76	80	83	136
		NONE	—	—	21	25	22	130	25	30	27	134	23	25	24	132	27	30	29	136
		118A	17.0	20.4	33	35	30	130	38	40	34	134	35	35	32	132	40	40	36	136
		119A	34.0	40.9	59	60	53	130	63	70	58	134	61	70	55	132	65	70	60	136

See "Legend and Notes for Tables 10—17" on page 48.

Table 15 – Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced Prior to July 30, 2012

UNIT	NOM. V-Ph-HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
			CRHEATER***A00	Nom (kW)	FLA	NO P.E.				w/ P.E. (pwrdr fr/unit)				NO P.E.			
						MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE
STD			NONE	—	—	32	50	31	148	36	50	36	152	37	50	37	153
			264A	4.9/6.5	13.6/15.6	32/32	50/50	31/31	148/148	36/36	50/50	36/36	152/152	37/37	50/50	37/37	153/153
			117A	7.8/10.4	21.7/25.0	38/38	50/50	31/35	148/148	43/43	50/50	36/39	152/152	44/44	50/50	37/40	153/153
			110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	148/148	60/60	60/60	49/55	152/152	61/61	70/70	50/56	153/153
MED			117A+117A	15.8/21.0	43.8/50.5	70/70	70/70	56/64	148/148	75/75	80/80	61/68	152/152	76/76	80/80	62/70	153/153
			110A+117A	19.9/26.5	55.2/63.8	87/87	90/90	69/79	148/148	91/91	100/100	74/84	152/152	93/93	100/100	75/85	153/153
			NONE	—	—	35	50	34	185	39	50	38	189	40	50	39	190
			264A	4.9/6.5	13.6/15.6	35/35	50/50	34/34	185/185	39/39	50/50	38/38	189/189	40/40	50/50	39/39	190/190
HIGH			117A	7.8/10.4	21.7/25.0	41/41	50/50	34/37	185/185	46/46	50/50	38/42	189/189	47/47	50/50	39/43	190/190
			110A	12.0/16.0	33.4/38.5	59/58	60/60	47/53	185/185	63/63	70/70	51/57	189/189	64/64	70/70	53/58	190/190
			117A+117A	15.8/21.0	43.8/50.5	73/73	80/80	59/67	185/185	78/78	80/80	63/71	189/189	79/79	80/80	65/72	190/190
			110A+117A	19.9/26.5	55.2/63.8	90/90	90/90	72/82	185/185	94/94	100/100	76/86	189/189	96/96	100/100	78/88	190/190
STD			NONE	—	—	42	60	43	211	46	60	47	215	48	60	48	216
			264A	4.9/6.5	13.6/15.6	42/42	60/60	43/43	211/211	46/46	60/60	47/47	215/215	47/47	60/60	48/48	216/216
			117A	7.8/10.4	21.7/25.0	50/50	60/60	43/46	211/211	55/55	60/60	47/50	215/215	56/56	70/70	48/52	216/216
			110A	12.0/16.0	33.4/38.5	67/67	70/70	56/62	211/211	72/72	80/80	60/66	215/215	73/73	80/80	61/67	216/216
MED			117A+117A	15.8/21.0	43.8/50.5	82/82	90/90	68/75	211/211	87/87	90/90	72/80	215/215	88/88	90/90	73/81	216/216
			110A+117A	19.9/26.5	55.2/63.8	99/99	100/100	81/91	211/211	104/104	110/110	85/95	215/215	105/105	110/110	86/96	216/216
STD			NONE	—	—	17	25	16	75	19	25	18	77	19	25	19	77
			265A	6.0	7.2	17	25	16	75	19	25	18	77	19	25	19	77
			268A	11.5	13.8	21	25	19	75	23	25	21	77	24	25	21	77
			267A	14.0	16.8	25	25	22	75	27	30	27	77	30	30	27	77
HIGH			268A	23.0	27.7	38	40	35	75	41	45	37	77	41	45	37	77
			269A	25.5	30.7	42	45	38	75	44	45	40	77	45	45	41	77
			NONE	—	—	18	25	17	94	19	25	19	96	20	25	19	96
			265A	6.0	7.2	18	25	17	94	19	25	19	96	20	25	19	96
MED			268A	11.5	13.8	22	25	20	94	24	25	22	96	25	25	22	96
			267A	14.0	16.8	26	30	23	94	28	30	25	96	28	30	26	96
			268A	23.0	27.7	39	40	36	94	42	45	38	96	42	45	38	96
			269A	25.5	30.7	43	45	39	94	45	45	41	96	46	50	42	96
STD			NONE	—	—	22	30	22	107	23	30	24	109	24	30	24	109
			265A	6.0	7.2	22	30	22	107	23	30	24	109	24	30	24	109
			268A	11.5	13.8	27	30	24	107	29	30	26	109	30	30	27	109
			267A	14.0	16.8	31	35	28	107	33	35	30	109	33	35	30	109
HIGH			268A	23.0	27.7	44	45	40	107	47	50	42	109	47	50	43	109
			269A	25.5	30.7	48	50	44	107	50	50	46	109	51	60	46	109
			NONE	—	—	12	15	11	61	16	20	16	65	14	20	13	63
			118A	17.0	20.4	27	30	25	61	32	35	29	65	30	30	27	63
STD			299A	25.7	25.8	34	35	31	61	39	40	35	65	36	40	33	63
			NONE	—	—	14	20	13	76	18	20	17	80	15	20	15	78
			118A	17.0	20.4	29	30	27	76	34	35	31	80	32	35	29	78
			299A	25.7	25.8	36	40	33	76	41	45	37	80	38	40	35	78
MED			NONE	—	—	17	20	16	90	20	25	21	94	18	25	18	92
			118A	17.0	20.4	33	35	30	90	38	40	34	94	35	35	32	92
			299A	25.7	25.8	40	40	36	90	44	45	40	94	42	45	38	92
			NONE	—	—	23	25	22	94	25	25	22	94	22	25	22	94
HIGH			118A	17.0	20.4	33	35	30	90	38	40	34	94	35	35	32	92
			299A	25.7	25.8	40	40	36	90	44	45	40	94	42	45	38	92
			NONE	—	—	23	25	22	94	25	25	22	94	22	25	22	94
			118A	17.0	20.4	33	35	30	90	38	40	34	94	35	35	32	92

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 15 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR		NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO PE.				w/ P.E. (pwrdr fr/unit)				NO PE.		
					MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA
50HC**08	STD	NONE	—	—	39	50	41	191	43	50	45	195	44	50	46
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	191/191	43/43	50/50	45/45	195/195	44/44	50/50	46/46
		110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	191/191	60/60	60/60	49/55	195/195	61/61	70/70	50/56
		111A	18.6/24.8	51.7/59.7	82/82	90/90	65/75	191/191	86/86	90/90	70/79	195/195	88/88	90/90	71/80
	MED	112A	24.0/32.0	66.7/77.0	103/103	110/110	83/95	191/191	108/108	110/110	87/99	195/195	109/109	110/110	88/100
		112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	191/191	139/139	150/150	112/128	195/195	140/140	150/150	113/129
		NONE	—	—	39	50	41	202	43	50	45	206	44	50	46
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	202/202	43/43	50/50	45/45	206/206	44/44	50/50	46/46
		110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	202/202	60/60	60/60	49/55	206/206	61/61	70/70	50/56
		111A	18.6/24.8	51.7/59.7	82/82	90/90	65/75	202/202	86/86	90/90	70/79	206/206	88/88	90/90	71/80
50HC**08	HIGH	112A	24.0/32.0	66.7/77.0	103/103	110/110	83/95	202/202	108/108	110/110	87/99	206/206	109/109	110/110	88/100
		112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	108/123	202/202	139/139	150/150	112/128	206/206	140/140	150/150	113/129
		NONE	—	—	44	50	46	245	48	60	51	249	49	60	52
		117A	7.8/10.4	21.7/25.0	44/44	50/50	46/46	245/245	49/49	60/60	51/51	249/249	50/50	60/60	52/52
	STD	110A	12.0/16.0	33.4/38.5	61/61	70/70	50/56	245/245	66/66	70/70	54/60	249/249	67/67	80/80	55/61
		111A	18.6/24.8	51.7/59.7	88/88	90/90	71/80	245/245	92/92	100/100	75/85	249/249	94/94	100/100	76/86
		112A	24.0/32.0	66.7/77.0	109/109	110/110	88/100	245/245	114/114	125/125	93/104	249/249	115/115	125/125	94/106
		112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	113/129	245/245	145/145	150/150	118/133	249/249	146/146	150/150	119/134
	MED	NONE	—	—	18	20	19	95	20	25	21	97	21	25	21
		116A	13.9	16.7	25	25	22	95	27	30	24	97	27	30	25
		113A	16.5	19.8	28	30	26	95	31	35	28	97	31	35	28
		114A	27.8	33.4	45	50	41	95	48	50	43	97	48	50	44
50HC**08	HIGH	115A	33.0	39.7	53	60	49	95	56	60	51	97	56	60	51
		114A+116A	41.7	50.2	66	70	61	95	69	70	63	97	69	70	63
		NONE	—	—	18	20	19	101	20	25	21	103	21	25	21
		116A	13.9	16.7	25	25	22	101	27	30	24	103	27	30	25
	STD	113A	16.5	19.8	28	30	26	101	31	35	28	103	31	35	28
		114A	27.8	33.4	45	50	41	101	48	50	43	103	48	50	44
		115A	33.0	39.7	53	60	49	101	56	60	51	103	56	60	51
		114A+116A	41.7	50.2	66	70	61	101	69	70	63	103	69	70	63
	MED	NONE	—	—	20	25	21	123	22	25	23	125	22	25	23
		116A	13.9	16.7	27	30	24	123	29	30	26	125	30	30	27
		113A	16.5	19.8	31	35	28	123	33	35	30	125	33	35	30
		114A	27.8	33.4	48	50	43	123	50	50	46	125	50	50	46
575-3-60	HIGH	115A	33.0	39.7	56	60	51	123	58	60	53	125	58	60	53
		114A+116A	41.7	50.2	69	70	63	123	71	80	65	125	71	80	65
		NONE	—	—	12	15	12	77	16	20	17	81	14	15	14
		118A	17.0	20.4	27	30	25	77	32	35	29	81	30	30	27
	STD	119A	34.0	40.9	53	60	48	77	58	60	53	81	55	60	50
		NONE	—	—	13	15	13	81	17	20	18	85	15	20	15
		118A	17.0	20.4	28	30	26	81	33	35	30	85	31	35	28
		119A	34.0	40.9	54	60	49	81	59	60	54	85	56	60	51
	MED	NONE	—	—	14	15	14	92	18	20	19	96	16	20	16
		118A	17.0	20.4	29	30	27	92	34	35	31	96	32	35	29
		119A	34.0	40.9	55	60	50	92	60	60	55	96	57	60	52
		NONE	—	—	14	15	14	96	19	20	19	96	16	20	16

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 15 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.				w/ P.E. (pwrdr fr/unit)						NO P.E.				w/ P.E. (pwrdr fr/unit)					
					MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE				
NOM. V-PH-HZ	STD	NONE	—	—	39	50	41	191	43	50	45	195	44	50	46	196	48	60	51	200				
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	191/191	43/43	50/50	45/45	195/195	44/44	50/50	46/46	196/196	49/49	60/60	51/51	200/200				
		110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	191/191	60/60	60/60	49/55	195/195	61/61	60/60	50/56	196/196	66/66	70/70	54/60	200/200				
		111A	18.6/24.8	51.7/59.7	82/82	90/90	65/75	191/191	86/86	90/90	70/79	195/195	88/88	90/90	71/80	196/196	92/92	100/100	75/65	200/200				
		112A	24.0/32.0	66.7/77.0	103/103	110/110	83/95	191/191	108/108	110/110	87/99	195/195	109/109	110/110	88/100	196/196	114/114	125/125	93/104	200/200				
	208/230-3-60	112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	191/191	139/139	150/150	112/128	195/195	140/140	150/150	113/129	196/196	145/145	150/150	118/133	200/200				
	MED	NONE	—	—	39	50	41	202	43	50	45	206	44	50	46	207	48	60	51	211				
		117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	202/202	43/43	50/50	45/45	206/206	44/44	50/50	46/46	207/207	49/49	60/60	51/51	211/211				
		110A	12.0/16.0	33.4/38.5	55/55	60/60	44/50	202/202	60/60	60/60	49/55	206/206	61/61	60/60	50/56	207/207	66/66	70/70	54/60	211/211				
		111A	18.6/24.8	51.7/59.7	82/82	90/90	65/75	202/202	86/86	90/90	70/79	206/206	88/88	90/90	71/80	207/207	92/92	100/100	75/65	211/211				
112A		24.0/32.0	66.7/77.0	103/103	110/110	83/95	202/202	108/108	110/110	87/99	206/206	109/109	110/110	88/100	207/207	114/114	125/125	93/104	211/211					
60HC+*09	HIGH	112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	202/202	139/139	150/150	112/128	206/206	140/140	150/150	113/129	207/207	145/145	150/150	118/133	211/211				
		NONE	—	—	44	50	46	245	48	60	51	249	49	60	52	250	53	60	56	254				
		117A	7.8/10.4	21.7/25.0	44/44	50/50	46/46	245/245	49/49	60/60	51/51	249/249	50/50	60/60	52/52	250/250	55/55	60/60	56/56	254/254				
		110A	12.0/16.0	33.4/38.5	61/61	70/70	50/56	245/245	66/66	70/70	54/60	249/249	67/67	70/70	55/61	250/250	72/72	80/80	60/66	254/254				
		111A	18.6/24.8	51.7/59.7	88/88	90/90	71/80	245/245	92/92	100/100	75/85	249/249	94/94	100/100	76/86	250/250	98/98	100/100	81/90	254/254				
	460-3-60	112A	24.0/32.0	66.7/77.0	109/109	110/110	88/100	245/245	114/114	125/125	93/104	249/249	115/115	125/125	94/106	250/250	120/120	125/125	98/110	254/254				
	112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	113/129	245/245	145/145	150/150	118/133	249/249	146/146	150/150	119/134	250/250	151/151	175/175	123/139	254/254					
	STD	NONE	—	—	19	20	19	95	20	25	21	97	21	25	22	97	23	25	24	99				
		116A	13.9	16.7	25	25	22	95	27	30	24	97	27	30	25	97	30	30	27	99				
		113A	16.5	19.8	28	30	26	95	31	35	28	97	31	35	28	97	33	35	30	99				
114A		27.8	33.4	45	50	41	95	48	50	43	97	48	50	44	97	50	60	46	99					
115A		33.0	39.7	53	60	49	95	56	60	51	97	56	60	51	97	58	60	53	99					
460-3-60	MED	114A+116A	41.7	50.2	66	70	61	95	69	70	63	97	69	70	63	97	71	80	65	99				
		NONE	—	—	19	20	19	101	20	25	21	103	21	25	22	103	23	25	24	105				
		116A	13.9	16.7	25	25	22	101	27	30	24	103	27	30	25	103	30	30	27	105				
		113A	16.5	19.8	28	30	26	101	31	35	28	103	31	35	28	103	33	35	30	105				
		114A	27.8	33.4	45	50	41	101	48	50	43	103	48	50	44	103	50	60	46	105				
	575-3-60	115A	33.0	39.7	53	60	49	101	56	60	51	103	56	60	51	103	58	60	53	105				
	114A+116A	41.7	50.2	66	70	61	101	69	70	63	103	69	70	63	103	71	80	65	105					
	STD	NONE	—	—	20	25	21	123	22	25	23	125	23	25	24	125	24	30	26	127				
		116A	13.9	16.7	27	30	24	123	29	30	26	125	30	30	27	125	32	35	29	127				
		113A	16.5	19.8	31	35	28	123	33	35	30	125	33	35	30	125	36	40	32	127				
114A		27.8	33.4	48	50	43	123	50	50	46	125	50	60	46	125	53	60	48	127					
115A		33.0	39.7	56	60	51	123	58	60	53	125	58	60	53	125	61	70	55	127					
575-3-60	HIGH	114A+116A	41.7	50.2	69	70	63	123	71	80	65	125	71	80	65	125	74	80	67	127				
		NONE	—	—	14	15	14	77	17	20	18	81	16	20	16	79	19	20	20	83				
		118A	17.0	20.4	27	30	25	77	32	35	29	81	30	30	27	79	34	35	31	83				
		119A	34.0	40.9	53	60	48	77	58	60	53	81	55	60	50	79	60	60	55	83				
		NONE	—	—	14	20	15	81	18	20	19	85	16	20	17	83	20	25	21	87				
	575-3-60	118A	17.0	20.4	28	30	26	81	33	35	30	85	31	35	28	83	35	32	87					
	119A	34.0	40.9	54	60	49	81	59	60	54	85	56	60	51	83	61	70	56	87					
	HIGH	NONE	—	—	15	20	16	92	19	20	20	96	17	20	18	94	21	25	22	98				
		118A	17.0	20.4	29	30	27	92	34	35	31	96	32	35	29	94	36	40	33	98				
		119A	34.0	40.9	55	60	50	92	60	60	55	96	57	60	52	94	62	70	57	98				
NONE		—	—	15	20	16	92	19	20	20	96	17	20	18	94	21	25	22	98					
118A		17.0	20.4	29	30	27	92	34	35	31	96	32	35	29	94	36	40	33	98					

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 15 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER**A00	Nom (kW)	FLA	NO P.E.					w/ P.E. (pwrdr fr/unit)					NO P.E.					w/ P.E. (pwrdr fr/unit)				
					MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA
50HC**11	STD	NONE	—	—	49	60	51	257	257	53	60	55	261	261	54	60	57	262	262	57	70	61	266	266
		117A	7.8/10.4	21.7/25.0	49/49	60/60	51/51	257/257	257/257	53/53	60/60	55/55	261/261	261/261	54/54	60/60	57/57	262/262	262/262	57/57	70/70	61/61	266/266	266/266
		110A	12.0/16.0	33.4/38.5	55/55	60/60	51/51	257/257	257/257	60/60	60/60	55/55	261/261	261/261	61/61	70/70	57/57	262/262	262/262	66/66	70/70	61/61	266/266	266/266
		112A	24.0/32.0	66.7/77.0	103/103	110/110	83/95	257/257	257/257	108/108	110/110	87/99	261/261	261/261	109/109	110/110	88/100	262/262	262/262	114/114	125/125	93/104	266/266	266/266
		112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	257/257	257/257	139/139	150/150	112/128	261/261	261/261	140/140	150/150	113/129	262/262	262/262	145/145	150/150	118/133	266/266	266/266
		112A+110A	37.6/50.0	104.2/120.3	137/137	150/150	126/144	257/257	257/257	142/142	150/150	130/149	261/261	261/261	143/143	150/150	131/150	262/262	262/262	148/148	150/150	136/154	266/266	266/266
		NONE	—	—	54	60	57	300	300	57	70	61	304	304	58	70	62	305	305	62	80	66	309	309
		117A	7.8/10.4	21.7/25.0	54/54	60/60	57/57	300/300	300/300	57/57	70/70	61/61	304/304	304/304	58/58	70/70	62/62	305/305	305/305	62/62	80/80	66/66	309/309	309/309
		110A	12.0/16.0	33.4/38.5	61/61	70/70	57/57	300/300	300/300	66/66	70/70	61/61	304/304	304/304	67/67	70/70	62/62	305/305	305/305	72/72	80/80	66/66	309/309	309/309
		112A	24.0/32.0	66.7/77.0	109/109	110/110	88/100	300/300	300/300	114/114	125/125	93/104	304/304	304/304	115/115	125/125	94/106	305/305	305/305	120/120	125/125	98/110	309/309	309/309
460-3-60	HIGH	112A+117A	31.8/42.4	88.4/102.0	147/147	150/150	119/135	309/309	309/309	151/151	175/175	123/139	313/313	313/313	153/153	175/175	124/140	314/314	314/314	157/157	175/175	129/144	318/318	318/318
		112A+110A	37.6/50.0	104.2/120.3	149/149	150/175	137/156	309/309	309/309	154/154	175/175	141/160	313/313	313/313	155/155	175/175	143/161	314/314	314/314	160/160	175/175	147/165	318/318	318/318
		NONE	—	—	22	25	23	123	123	24	30	25	125	125	25	30	26	125	125	26	30	28	127	127
		116A	13.9	16.7	25	25	23	123	123	27	30	25	125	125	27	30	26	125	125	30	30	28	127	127
		118A	16.5	19.8	28	30	26	123	123	31	35	28	125	125	31	35	28	125	125	33	35	30	127	127
		115A	33.0	39.7	53	60	49	123	123	56	60	51	125	125	56	60	51	125	125	58	60	53	127	127
		114A+116A	41.7	50.2	66	70	61	123	123	69	70	63	125	125	69	70	63	125	125	71	80	65	127	127
		115A+113A	50.0	60.1	64	70	72	123	123	66	70	74	125	125	67	70	75	125	125	69	70	77	127	127
		NONE	—	—	24	30	25	145	145	26	30	27	147	147	26	30	28	147	147	28	30	30	149	149
		116A	13.9	16.7	27	30	25	145	145	29	30	27	147	147	30	30	28	147	147	32	35	30	149	149
575-3-60	MED	113A	16.5	19.8	31	35	28	145	145	33	35	30	147	147	33	35	30	147	147	36	40	32	149	149
		115A	33.0	39.7	56	60	51	145	145	58	60	53	147	147	58	60	53	147	147	61	70	55	149	149
		114A+116A	41.7	50.2	69	70	63	145	145	71	80	65	147	147	71	80	65	147	147	74	80	67	149	149
		115A+113A	50.0	60.1	66	80	74	145	145	68	80	76	147	147	69	80	77	147	147	71	80	79	149	149
		NONE	—	—	27	30	29	149	149	29	35	31	151	151	30	35	31	151	151	31	35	33	153	153
		116A	13.9	16.7	31	35	29	149	149	33	35	31	151	151	33	35	31	151	151	36	40	33	153	153
		113A	16.5	19.8	34	35	31	149	149	37	40	33	151	151	37	40	34	151	151	39	40	36	153	153
		115A	33.0	39.7	59	60	54	149	149	62	70	56	151	151	62	70	57	151	151	64	70	59	153	153
		114A+116A	41.7	50.2	72	80	66	149	149	75	80	68	151	151	75	80	69	151	151	77	80	71	153	153
		115A+113A	50.0	60.1	70	80	78	149	149	72	80	80	151	151	73	80	80	151	151	75	80	82	153	153
575-3-60	STD	NONE	—	—	18	20	18	95	95	21	25	23	99	99	19	25	20	97	97	23	25	24	101	101
		118A	17.0	20.4	28	30	26	95	95	33	35	30	99	99	31	35	28	97	97	35	35	32	101	101
		119A	34.0	40.9	54	60	49	95	95	59	60	54	99	99	56	60	51	97	97	61	70	56	101	101
		118A+119A	51.0	61.3	64	70	73	95	95	69	80	77	99	99	66	70	75	97	97	71	80	79	101	101
		NONE	—	—	18	20	19	106	106	22	25	23	110	110	20	25	21	108	108	24	25	25	112	112
		118A	17.0	20.4	29	30	27	106	106	34	35	31	110	110	32	35	29	108	108	36	40	33	112	112
		119A	34.0	40.9	55	60	50	106	106	60	60	55	110	110	57	60	52	108	108	62	70	57	112	112
		118A+119A	51.0	61.3	65	70	74	106	106	70	80	78	110	110	67	70	76	108	108	72	80	80	112	112
		NONE	—	—	21	25	22	120	120	25	30	27	124	124	23	25	24	122	122	27	30	29	126	126
		118A	17.0	20.4	33	35	30	120	120	38	40	34	124	124	35	35	32	122	122	40	40	36	126	126
		119A	34.0	40.9	59	60	53	120	120	63	70	58	124	124	61	70	55	122	122	65	70	60	126	126

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 15 - Unit Wire Sizing Data with Factory Installed HACR Breaker — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER**A00	Nom (kW)	FLA	NO P.E.					w/ P.E. (pwrd fr/unit)					NO P.E.					w/ P.E. (pwrd fr/unit)				
					MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA
50HC**12	STD	NONE	—	—	48	60	50	282	282	51	60/60	54/54	286	286	52	60	55	287	287	56	60	60	60	291
		117A	7.8/10.4	21.7/25.0	48/48	60/60	50/50	282/282	282/282	51/51	60/60	54/54	286/286	286/286	52/52	60/60	55/55	287/287	287/287	56/56	60/60	60/60	60/60	291/291
		110A	12.0/16.0	33.4/38.5	55/55	60/60	50/50	282/282	282/282	60/60	60/60	54/55	286/286	286/286	60/60	60/60	55/56	287/287	287/287	66/66	70/70	70/70	70/70	291/291
		112A	24.0/32.0	66.7/77.0	103/103	110/110	83/95	282/282	282/282	108/108	110/110	87/99	286/286	286/286	109/109	110/110	88/100	287/287	287/287	114/114	125/125	93/104	93/104	291/291
208/230-3-60	MED	112A+117A	31.8/42.4	88.4/102.0	134/134	150/150	108/123	282/282	282/282	139/139	150/150	112/128	286/286	286/286	140/140	150/150	113/129	287/287	287/287	145/145	150/150	118/133	118/133	291/291
		112A+110A	37.6/50.0	104.2/120.3	137/137	150/150	126/144	282/282	282/282	142/142	150/150	130/149	286/286	286/286	143/143	150/150	131/150	287/287	287/287	148/148	150/150	136/154	136/154	291/291
		NONE	—	—	52	60	55	325	325	56	60	60	329	329	57	70	61	330	330	61	70	65	65	334
		117A	7.8/10.4	21.7/25.0	52/52	60/60	55/55	325/325	325/325	56/56	60/60	60/60	329/329	329/329	57/57	70/70	61/61	330/330	330/330	61/61	70/70	65/65	65/65	334/334
460-3-60	HIGH	110A	12.0/16.0	33.4/38.5	61/61	70/70	55/56	325/325	325/325	66/66	70/70	60/60	329/329	329/329	67/67	70/70	61/61	330/330	330/330	72/72	80/80	65/66	65/66	334/334
		112A	24.0/32.0	66.7/77.0	109/109	110/110	88/100	325/325	325/325	114/114	125/125	93/104	329/329	329/329	115/115	125/125	94/106	330/330	330/330	120/120	125/125	98/110	98/110	334/334
		112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	113/129	325/325	325/325	145/145	150/150	118/133	329/329	329/329	146/146	150/150	119/134	330/330	330/330	151/151	175/175	123/139	123/139	334/334
		112A+110A	37.6/50.0	104.2/120.3	143/143	150/150	131/150	325/325	325/325	148/148	150/150	136/154	329/329	329/329	149/149	150/150	137/155	330/330	330/330	154/154	175/175	141/160	141/160	334/334
50HC**12	STD	NONE	—	—	57	70	61	334	334	61	70	65	338	338	62	70	66	339	339	66	80	71	71	343
		117A	7.8/10.4	21.7/25.0	57/57	70/70	61/61	334/334	334/334	61/61	70/70	65/65	338/338	338/338	62/62	70/70	66/66	339/339	339/339	66/66	80/80	71/71	71/71	343/343
		110A	12.0/16.0	33.4/38.5	67/67	70/70	61/62	334/334	334/334	72/72	80/80	66/66	338/338	338/338	73/73	80/80	66/67	339/339	339/339	78/78	80/80	71/71	71/71	343/343
		112A	24.0/32.0	66.7/77.0	115/115	125/125	94/106	334/334	334/334	120/120	125/125	98/110	338/338	338/338	121/121	125/125	99/111	339/339	339/339	126/126	150/150	104/116	104/116	343/343
460-3-60	MED	112A+117A	31.8/42.4	88.4/102.0	147/147	150/150	119/135	334/334	334/334	151/151	175/175	123/139	338/338	338/338	153/153	175/175	124/140	339/339	339/339	157/157	175/175	129/144	129/144	343/343
		112A+110A	37.6/50.0	104.2/120.3	149/149	150/175	137/156	334/334	334/334	154/154	175/175	141/160	338/338	338/338	155/155	175/175	143/161	339/339	339/339	160/160	175/175	147/165	147/165	343/343
		NONE	—	—	23	30	24	135	135	25	30	26	137	137	26	30	27	137	137	27	30	29	29	139
		116A	13.9	16.7	25	30	24	135	135	27	30	26	137	137	27	30	27	137	137	30	30	29	29	139
575-3-60	STD	119A	16.5	19.8	28	30	26	135	135	31	35	28	137	137	31	35	28	137	137	33	35	30	30	139
		115A	33.0	39.7	53	60	49	135	135	56	60	51	137	137	56	60	51	137	137	58	60	53	53	139
		114A+116A	41.7	50.2	66	70	61	135	135	69	70	63	137	137	69	70	63	137	137	71	70	65	65	139
		115A+113A	50.0	60.1	64	70	72	135	135	66	70	74	137	137	67	70	75	137	137	69	70	77	77	139
575-3-60	HIGH	NONE	—	—	25	30	26	157	157	27	30	28	159	159	27	30	29	159	159	29	35	31	31	161
		116A	13.9	16.7	27	30	26	157	157	29	30	28	159	159	30	30	29	159	159	32	35	31	31	161
		119A	16.5	19.8	31	35	28	157	157	33	35	30	159	159	33	35	30	159	159	36	40	32	32	161
		115A	33.0	39.7	56	60	51	157	157	58	60	53	159	159	58	60	53	159	159	61	70	55	55	161
575-3-60	STD	114A+116A	41.7	50.2	69	70	63	157	157	71	80	65	159	159	71	80	65	159	159	74	80	67	67	161
		115A+113A	50.0	60.1	66	80	74	157	157	68	80	76	159	159	69	80	77	159	159	71	80	79	79	161
		NONE	—	—	28	30	30	161	161	30	35	32	163	163	30	35	32	163	163	32	40	34	34	165
		116A	13.9	16.7	31	35	30	161	161	33	35	32	163	163	33	35	32	163	163	36	40	34	34	165
575-3-60	MED	119A	17.0	20.4	34	35	31	161	161	37	40	33	163	163	37	40	33	163	163	39	40	36	36	165
		115A	33.0	39.7	59	60	54	161	161	62	70	56	163	163	62	70	56	163	163	64	70	59	59	165
		114A+116A	41.7	50.2	72	80	66	161	161	75	80	68	163	163	75	80	68	163	163	77	80	71	71	165
		115A+113A	50.0	60.1	70	80	78	161	161	72	80	76	163	163	73	80	77	163	163	75	80	82	82	165
575-3-60	STD	NONE	—	—	18	20	18	105	105	22	25	23	109	109	19	25	20	107	107	23	25	25	25	111
		119A	17.0	20.4	28	30	26	105	105	33	35	30	109	109	31	35	28	107	107	35	35	32	32	111
		119A	34.0	40.9	54	60	49	105	105	59	60	54	109	109	56	60	51	107	107	61	70	56	56	111
		118A+119A	51.0	61.3	64	70	73	105	105	69	80	77	109	109	66	70	75	107	107	71	80	79	79	111
575-3-60	MED	NONE	—	—	19	20	19	116	116	22	25	24	120	120	20	25	21	118	118	24	30	26	26	122
		119A	17.0	20.4	29	30	27	116	116	34	35	31	120	120	32	35	29	118	118	36	40	33	33	122
		119A	34.0	40.9	55	60	50	116	116	60	60	55	120	120	57	60	52	118	118	62	70	57	57	122
		118A+119A	51.0	61.3	65	70	74	116	116	70	80	78	120	120	67	70	76	118	118	72	80	80	80	122
575-3-60	HIGH	NONE	—	—	21	25	22	130	130	25	30	27	134	134	23	25	24	132	132	27	30	29	29	136
		118A	17.0	20.4	33	35	30	130	130	38	40	34	134	134	35	35	32	132	132	40	40	36	36	136
		119A	34.0	40.9	59	60	53	130	130	63	70	58	134	134	61	70	55	132	132	65	70	60	60	136
		118A+119A	51.0	61.3	69	80	77	130	130	74	80	81	134	134	71	80	79	132	132	76	80	83	83	136

See "Legend and Notes for Tables 10 — 17" on page 48.

50HC

Table 16 – Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrd fr/unit)			NO P.E.			w/ P.E. (pwrd fr/unit)		
					MCA	FUSE or HACR BRKR	DISC. SIZE	MCA	FUSE or HACR BRKR	DISC. SIZE	MCA	FUSE or HACR BRKR	DISC. SIZE	MCA	FUSE or HACR BRKR	DISC. SIZE
							FLA			FLA			FLA			FLA
50HC**08	208/230-3-60	NONE	—	—	40/40	50/50	41/41	195	44/43	50/50	46/46	199	45/44	50/50	47/47	200
		117A	7.8/10.4	21.7/25.0	40/40	50/50	41/41	195/195	44/43	50/50	46/46	199/199	45/45	50/50	47/47	200
		110A	12.0/16.0	33.4/38.5	49/56	50/60	45/51	195/195	54/60	60/60	49/55	199/199	55/62	60/70	200/200	204/204
		111A	18.6/24.8	51.7/59.7	72/82	80/90	66/75	195/195	77/87	80/90	70/79	199/199	78/88	80/90	200/200	204/204
		112A	24.0/32.0	66.7/77.0	91/104	100/110	83/95	195/195	96/108	100/110	88/99	199/199	97/110	100/110	200/200	204/204
		112A+117A	31.8/42.4	88.4/102.0	118/135	125/150	108/124	195/195	123/140	125/150	113/128	199/199	124/141	125/150	200/200	204/204
		NONE	—	—	41/41	50/50	43/43	199	45/45	50/50	47/47	203	46/46	50/50	48/48	204
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	199/199	45/45	50/50	47/47	203/203	46/46	50/50	48/48	204/204
		110A	12.0/16.0	33.4/38.5	51/57	60/60	47/52	199/199	56/62	60/70	51/56	203/203	57/63	60/70	204/204	208/208
		111A	18.6/24.8	51.7/59.7	74/84	80/90	68/76	199/199	79/88	80/90	72/81	203/203	80/90	80/90	204/204	208/208
50HC**08	460-3-60	112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	199/199	97/110	100/110	89/101	203/203	99/111	100/125	204/204	208/208
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	199/199	125/141	125/150	114/129	203/203	126/142	150/150	204/204	208/208
		NONE	—	—	45/44	50/50	47/46	249	49/48	60/60	52/50	253	50/49	60/60	53/52	254
		117A	7.8/10.4	21.7/25.0	45/44	50/50	47/46	249/249	49/49	60/60	52/50	253/253	50/50	60/60	53/52	254/254
		110A	12.0/16.0	33.4/38.5	56/61	60/70	51/56	249/249	60/66	60/70	55/60	253/253	62/67	70/70	254/254	258/258
		111A	18.6/24.8	51.7/59.7	79/87	80/90	72/80	249/249	83/92	90/100	76/84	253/253	85/93	90/100	254/254	258/258
		112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	249/249	102/114	110/125	93/104	253/253	103/115	110/125	254/254	258/258
		112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	249/249	129/145	150/150	118/133	253/253	130/146	150/150	254/254	258/258
		NONE	—	—	19	20	19	97	20	25	21	99	21	25	22	99
		116A	13.9	16.7	25	25	23	97	27	30	25	99	28	30	25	99
50HC**08	575-3-60	113A	16.5	19.8	29	30	26	97	31	35	28	99	32	35	29	99
		114A	27.8	33.4	46	50	42	97	48	50	44	99	51	60	44	99
		115A	33.0	39.7	54	60	49	97	56	60	51	99	56	60	52	99
		114A+116A	41.7	50.2	67	70	61	97	69	70	63	99	70	80	64	99
		NONE	—	—	20	25	20	100	21	25	22	102	22	25	23	102
		116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102
		113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102
		114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102
		115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102
		114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102
575-3-60	575-3-60	NONE	—	—	21	25	22	125	22	25	24	127	23	25	24	127
		116A	13.9	16.7	27	30	25	125	30	30	27	127	30	30	27	127
		113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	30	127
		114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127
		115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127
		114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127
		NONE	—	—	14	15	14	79	18	20	19	83	16	20	16	81
		118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81
		119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81
		NONE	—	—	15	20	15	83	18	20	19	87	16	20	17	85
575-3-60	575-3-60	118A	17.0	20.4	30	30	27	83	35	35	32	87	32	35	29	85
		119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85
		NONE	—	—	16	20	16	92	19	25	21	96	17	20	18	94
		118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94
		119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94
		NONE	—	—	20	25	20	104	23	25	24	108	21	25	23	106
		118A	17.0	20.4	33	35	29	104	38	40	34	108	36	40	35	106
		119A	34.0	40.9	58	60	53	104	64	70	59	108	64	70	59	106
		NONE	—	—	21	25	21	108	24	25	24	112	22	25	24	110
		118A	17.0	20.4	34	35	29	108	39	40	34	112	37	40	35	110

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 16 - Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.				w/ P.E. (pwrdd fr/unit)			NO P.E.			w/ PWRD C.O.									
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA								
NOM. V-PH-HZ	STD	NONE	—	—	40/40	50/50	42/41 195	44/44	50/50	46/46 199	45/45	50/50	47/47 200	49/48	60/60	52/51 204								
		117A	7.8/10.4	21.7/25.0	40/40	50/50	42/41 195/195	44/44	50/50	46/46 199/199	45/45	50/50	47/47 200/200	49/49	60/60	52/51 204/204								
		110A	12.0/16.0	33.4/38.5	49/56	50/60	45/51 195/195	54/60	60/60	49/55 199/199	55/62	60/70	51/56 200/200	60/66	60/70	55/61 204/204								
		111A	18.6/24.8	51.7/59.7	72/82	80/90	66/75 195/195	77/87	80/90	70/79 199/199	78/88	80/90	72/81 200/200	83/93	90/100	76/85 204/204								
		112A	24.0/32.0	66.7/77.0	91/104	100/110	83/95 195/195	96/108	100/110	88/99 199/199	97/110	100/110	89/101 200/200	102/114	110/125	93/105 204/204								
	112A+117A	31.8/42.4	88.4/102.0	118/135	125/150	108/124 195/195	123/140	125/150	113/128 199/199	124/141	125/150	114/129 200/200	129/146	150/150	118/134 204/204									
	MED	NONE	—	—	41/41	50/50	43/43 199	45/45	50/50	47/47 203	46/46	50/50	49/48 204	50/50	60/60	53/53 208								
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43 199/199	45/45	50/50	47/47 203/203	46/46	50/50	49/48 204/204	50/51	60/60	53/53 208/208								
		110A	12.0/16.0	33.4/38.5	51/57	60/60	47/52 199/199	56/62	60/70	51/56 203/203	57/63	60/70	52/58 204/204	62/68	70/70	56/62 208/208								
		111A	18.6/24.8	51.7/59.7	74/84	80/90	68/76 199/199	79/88	80/90	72/81 203/203	80/90	80/90	73/82 204/204	85/94	90/100	78/86 208/208								
112A		24.0/32.0	66.7/77.0	93/105	100/110	85/96 199/199	97/110	100/110	89/101 203/203	99/111	100/125	90/102 204/204	103/116	110/125	95/106 208/208									
112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125 199/199	125/141	125/150	114/129 203/203	126/142	150/150	115/131 204/204	131/147	150/150	120/135 208/208										
50HC**09	HIGH	NONE	—	—	45/44	50/50	47/46 249	49/48	60/60	52/51 253	50/49	60/60	53/52 254	54/53	60/60	57/56 258								
		117A	7.8/10.4	21.7/25.0	45/44	50/50	47/46 249/249	49/49	60/60	52/51 253/253	50/50	60/60	53/52 254/254	54/55	60/60	57/56 258/258								
		110A	12.0/16.0	33.4/38.5	56/61	60/70	51/56 249/249	60/66	60/70	55/60 253/253	62/67	70/70	56/61 254/254	66/72	70/80	61/65 258/258								
		111A	18.6/24.8	51.7/59.7	79/87	80/90	72/80 249/249	83/92	90/100	76/84 253/253	85/93	90/100	77/85 254/254	89/98	90/100	82/90 258/258								
		112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100 249/249	102/114	110/125	93/104 253/253	103/115	110/125	95/105 254/254	108/120	110/125	99/110 258/258								
	112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129 249/249	129/145	150/150	118/133 253/253	130/146	150/150	120/134 254/254	135/151	150/175	124/138 258/258									
	STD	NONE	—	—	19	25	19 97	21	25	22 99	21	25	22 99	23	25	24 101								
		116A	13.9	16.7	25	25	23 97	27	30	25 99	28	30	25 99	30	30	27 101								
		113A	16.5	19.8	29	30	26 97	31	35	28 99	32	35	29 99	34	35	31 101								
		114A	27.8	33.4	46	50	42 97	48	50	44 99	49	50	44 99	51	60	46 101								
115A		33.0	39.7	54	60	49 97	56	60	51 99	56	60	52 99	59	60	54 101									
114A+116A	41.7	50.2	67	70	61 97	69	70	63 99	70	70	64 99	72	80	66 101										
460-3-60	MED	NONE	—	—	20	25	20 100	22	25	23 102	22	25	23 102	24	25	25 104								
		116A	13.9	16.7	26	30	24 100	28	30	26 102	29	30	26 102	31	35	28 104								
		113A	16.5	19.8	30	30	27 100	32	35	29 102	33	35	30 102	35	35	32 104								
		114A	27.8	33.4	47	50	43 100	49	50	45 102	50	50	45 102	52	60	47 104								
		115A	33.0	39.7	55	60	50 100	57	60	52 102	58	60	53 102	60	60	55 104								
	114A+116A	41.7	50.2	68	70	62 100	70	70	64 102	71	80	65 102	73	80	67 104									
	HIGH	NONE	—	—	21	25	22 125	23	25	24 127	23	25	24 127	25	30	26 129								
		116A	13.9	16.7	27	30	25 125	30	30	27 127	30	30	27 127	32	35	29 129								
		113A	16.5	19.8	31	35	28 125	34	35	30 127	34	35	31 127	36	40	33 129								
		114A	27.8	33.4	48	50	44 125	51	60	46 127	51	60	47 127	53	60	49 129								
115A		33.0	39.7	56	60	51 125	58	60	53 127	59	60	54 127	61	70	56 129									
114A+116A	41.7	50.2	69	70	63 125	72	80	65 127	72	80	66 127	74	80	68 129										
575-3-60	STD	NONE	—	—	15	20	16 79	19	20	20 83	17	20	18 81	21	25	22 85								
		118A	17.0	20.4	29	30	27 79	34	35	31 83	32	35	29 81	36	40	33 85								
		119A	34.0	40.9	55	60	50 79	60	60	55 83	57	60	52 81	62	70	57 85								
		NONE	—	—	16	20	16 83	20	25	21 87	18	20	18 85	21	25	23 89								
		118A	17.0	20.4	30	30	27 83	35	35	32 87	32	35	29 85	37	40	34 89								
	119A	34.0	40.9	56	60	51 83	61	70	55 87	58	60	53 85	63	70	57 89									
	HIGH	NONE	—	—	17	20	18 92	21	25	22 96	19	20	20 94	22	25	24 98								
		118A	17.0	20.4	32	35	29 92	36	40	33 96	34	35	31 94	38	40	35 98								
		119A	34.0	40.9	57	60	52 92	62	70	57 96	59	60	54 94	64	70	59 98								
		NONE	—	—	19	25	19 97	21	25	22 99	21	25	22 99	23	25	24 101								
116A		13.9	16.7	25	25	23 97	27	30	25 99	28	30	25 99	30	30	27 101									

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 16 - Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.												
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.					w/ P.E. (pwrd fr/unit)					NO P.E.					w/ P.E. (pwrd fr/unit)							
					MCA	HACR BRKR	FLA	DISC. SIZE		LRA	MCA	HACR BRKR	FLA	DISC. SIZE		LRA	MCA	HACR BRKR	FLA	DISC. SIZE		LRA					
50HC**11	STD	NONE	—	—	51/50	60/60	53/53	254	55/54	60/60	58/57	258	59/58	56/55	60/60	59/58	259	59/59	56/55	60/60	59/58	259	63/63	59/59	70/70	63/63	263
		117A	7.8/10.4	21.7/25.0	51/50	60/60	53/53	254/254	55/54	60/60	58/57	258/258	59/58	56/55	60/60	59/58	259/259	59/59	56/55	60/60	59/58	259/259	63/63	59/59	70/70	63/63	263/263
		110A	12.0/16.0	33.4/38.5	51/57	60/60	53/53	254/254	56/62	60/70	58/57	258/258	59/58	57/63	60/70	59/58	259/259	62/68	57/63	60/70	59/58	259/259	63/63	60/70	70/70	63/63	263/263
		112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	254/254	97/110	100/110	89/101	258/258	99/111	99/111	100/110	100/110	259/259	103/116	99/111	100/110	100/110	259/259	95/106	103/116	110/125	95/106	263/263
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	254/254	125/141	125/150	114/129	258/258	126/142	126/142	125/150	115/131	259/259	131/147	115/131	125/150	115/131	259/259	120/135	131/147	150/150	120/135	263/263
		112A+110A	37.6/50.0	104.2/120.3	140/129	150/150	128/146	254/254	144/134	150/150	132/151	258/258	146/135	146/135	150/150	134/152	259/259	150/140	150/150	150/150	134/152	259/259	138/156	150/140	150/150	138/156	263/263
	MED	NONE	—	—	54/53	60/60	58/56	304	58/57	70/70	62/61	308	59/58	59/58	70/70	63/62	309	63/62	59/58	70/70	63/62	309	67/66	63/62	70/70	67/66	313
		117A	7.8/10.4	21.7/25.0	54/53	60/60	58/56	304/304	58/57	70/70	62/61	308/308	59/58	59/58	70/70	63/62	309/309	63/62	59/58	70/70	63/62	309/309	67/66	63/62	70/70	67/66	313/313
		110A	12.0/16.0	33.4/38.5	56/61	60/70	58/56	304/304	60/66	70/70	62/61	308/308	62/67	60/66	70/70	63/62	309/309	66/72	60/66	70/70	63/62	309/309	67/66	60/66	70/70	67/66	313/313
		112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	304/304	102/114	110/125	93/104	308/308	103/115	103/115	110/125	95/105	309/309	108/120	103/115	110/125	95/105	309/309	99/110	110/125	99/110	313/313	
		112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	304/304	129/145	150/150	118/133	308/308	130/146	130/146	150/150	120/134	309/309	135/151	150/175	150/150	120/134	309/309	124/138	150/175	124/138	313/313	
		112A+110A	37.6/50.0	104.2/120.3	144/133	150/150	132/150	304/304	149/138	150/150	137/154	308/308	150/139	150/139	150/150	138/155	309/309	155/144	175/175	175/175	138/155	309/309	142/160	175/175	142/160	313/313	
HIGH	NONE	—	—	57/56	70/60	61/60	315	61/60	70/70	65/64	319	66/65	62/61	70/70	66/65	320	66/65	62/61	70/70	66/65	320	71/70	66/65	80/80	71/70	324	
	117A	7.8/10.4	21.7/25.0	57/56	70/60	61/60	315/315	61/60	70/70	65/64	319/319	66/65	62/61	70/70	66/65	320/320	66/65	62/61	70/70	66/65	320/320	71/70	66/65	80/80	71/70	324/324	
	110A	12.0/16.0	33.4/38.5	59/64	70/70	61/60	315/315	64/69	70/70	65/64	319/319	65/70	65/70	70/70	66/65	320/320	70/75	65/70	70/70	66/65	320/320	71/70	66/65	80/80	71/70	324/324	
	112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	315/315	108/117	110/125	97/108	319/319	107/119	107/119	110/125	98/109	320/320	112/123	107/119	110/125	98/109	320/320	102/113	125/125	102/113	324/324		
	112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	315/315	133/149	150/150	122/136	319/319	134/150	134/150	150/150	123/137	320/320	139/155	150/175	150/150	123/137	320/320	127/142	150/175	127/142	324/324		
	112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	315/315	152/141	175/175	140/157	319/319	154/143	154/143	175/175	141/158	320/320	158/147	175/175	175/175	141/158	320/320	145/163	175/175	145/163	324/324		
460-3-60	STD	NONE	—	—	24	30	25	122	25	30	27	124	26	26	30	27	124	28	26	30	27	124	29	30	35	29	126
		116A	13.9	16.7	26	30	25	122	28	30	27	124	29	29	30	30	124	31	29	30	27	124	31	35	29	126	
		113A	16.5	19.8	30	30	27	122	32	35	29	124	33	33	35	35	124	35	33	35	30	124	35	35	32	126	
		115A	33.0	39.7	55	60	50	122	57	60	52	124	58	58	60	60	124	60	58	60	53	124	60	60	55	126	
		114A+116A	41.7	50.2	68	70	62	122	70	70	64	124	71	71	80	65	124	73	71	80	65	124	73	80	80	67	126
		115A+113A	50.0	60.1	65	70	73	122	68	80	76	124	68	68	80	76	124	70	68	80	76	124	70	80	80	78	126
575-3-60	MED	NONE	—	—	25	30	26	147	27	30	28	149	27	27	30	28	149	29	27	30	28	149	30	35	30	29	151
		116A	13.9	16.7	27	30	26	147	30	30	28	149	30	30	30	28	149	32	30	30	28	149	32	35	30	29	151
		113A	16.5	19.8	31	35	28	147	34	35	30	149	34	34	35	35	149	36	34	35	31	149	36	40	33	151	
		115A	33.0	39.7	56	60	51	147	58	60	53	149	59	59	60	54	149	61	59	60	54	149	61	70	56	151	
		114A+116A	41.7	50.2	69	70	63	147	72	80	66	149	72	72	80	66	149	74	72	80	66	149	74	80	68	151	
		115A+113A	50.0	60.1	67	80	75	147	69	80	77	149	69	69	80	77	149	72	69	80	77	149	72	80	80	79	151
575-3-60	HIGH	NONE	—	—	26	30	28	152	28	30	30	154	28	28	30	30	154	30	28	30	30	154	32	35	32	32	156
		116A	13.9	16.7	29	30	28	152	32	35	30	154	32	32	35	35	154	34	32	35	30	154	34	35	32	156	
		113A	16.5	19.8	33	35	30	152	35	35	32	154	35	35	35	35	154	38	35	35	30	154	38	40	35	156	
		115A	33.0	39.7	58	60	53	152	60	60	55	154	61	61	70	56	154	63	61	70	56	154	63	70	58	156	
		114A+116A	41.7	50.2	71	80	65	152	73	80	67	154	74	74	80	68	154	76	74	80	68	154	76	80	70	156	
		115A+113A	50.0	60.1	69	80	76	152	71	80	79	154	71	71	80	79	154	74	71	80	79	154	74	80	80	81	156
575-3-60	STD	NONE	—	—	19	20	20	97	23	25	24	101	21	21	25	22	99	25	21	25	22	99	26	30	30	26	103
		118A	17.0	20.4	30	30	27	97	35	35	32	101	32	32	35	35	99	37	32	35	29	99	37	40	34	103	
		119A	34.0	40.9	56	60	51	97	61	70	55	101	58	58	60	53	99	63	58	60	53	99	63	70	57	103	
		118A+119A	51.0	61.3	66	70	75	97	71	80	79	101	68	68	80	76	99	73	68	80	76	99	73	80	80	81	103
		NONE	—	—	20	25	21	106	24	25	25	110	22	22	25	23	108	26	22	25	23	108	26	30	30	27	112
		118A	17.0	20.4	32	35	29	106	36	40	33	110	34	34	35	31	108	38	34	35	31	108	38	40	35	112	
575-3-60	MED	119A	34.0	40.9	57	60	52	106	62	70	57	110	59	59	60	54	108	64	59	60	54	108	64	70	59	112	
		118A+119A	51.0	61.3	67	80	76	106	72	80	80	110	70	70	80	78	108	74	70	80	78	108	74	80	80	82	112
		NONE	—	—	22	25	23	120	26	30	27	124	24	24	25	25	122	28	24	25	25	122	28	30	30	29	126
		118A	17.0	20.4	34	35	31	120	38	40	35	124	364														

Table 16 - Unit Wire Sizing Data with Factory Installed 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
		CRHEATER***A00	Nom (kW)	FLA	NO PE.				w/ P.E. (pwrdd fr/unit)				NO PE.				w/ P.E. (pwrdd fr/unit)			
					MCA	HACR BRKR	DISC. SIZE	FLA	LRA	MCA	HACR BRKR	DISC. SIZE	FLA	LRA	MCA	HACR BRKR	DISC. SIZE	FLA	LRA	MCA
50HC**12	STD	NONE	—	—	50/49	60/60	52/52	279	53/53	60/60	56/56	283	54/54	60/60	57/57	284	58/58	70/70	62/61	288
		117A	7.8/10.4	21.7/25.0	50/49	60/60	52/52	279/279	53/53	60/60	56/56	283/283	54/54	60/60	57/57	284/284	58/58	70/70	62/61	286/288
		110A	12.0/16.0	33.4/38.5	51/57	60/60	52/52	279/279	56/62	60/70	56/56	283/283	57/63	60/70	57/58	284/284	62/68	70/70	62/62	288/288
	MED	112A	24.0/32.0	66.7/77.0	93/105	100/110	85/96	279/279	97/110	100/110	89/101	283/283	99/111	100/125	90/102	284/284	103/116	110/125	95/106	288/288
		112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	279/279	125/141	150/150	114/129	283/283	126/142	150/150	115/131	284/284	131/147	150/150	120/135	288/288
		112A+110A	37.6/50.0	104.2/120.3	140/129	150/150	128/146	279/279	144/134	150/150	132/151	283/283	146/135	150/150	134/152	284/284	150/140	150/150	138/156	288/288
460-3-60	HIGH	NONE	—	—	53/52	60/60	56/55	329	57/56	70/60	60/59	333	58/57	70/70	62/60	334	62/61	70/70	66/65	338
		117A	7.8/10.4	21.7/25.0	53/52	60/60	56/55	329/329	57/56	70/60	60/59	333/333	58/57	70/70	62/60	334/334	62/61	70/70	66/65	338/338
		110A	12.0/16.0	33.4/38.5	56/61	60/70	56/56	329/329	60/66	70/70	60/60	333/333	62/67	70/70	62/61	334/334	66/72	70/80	66/65	338/338
	STD	112A	24.0/32.0	66.7/77.0	97/109	100/110	89/100	329/329	102/114	110/125	93/104	333/333	103/115	110/125	95/105	334/334	108/120	110/125	99/110	338/338
		112A+117A	31.8/42.4	88.4/102.0	124/140	125/150	114/129	329/329	129/145	150/150	118/133	333/333	130/146	150/150	120/134	334/334	135/151	150/175	124/138	338/338
		112A+110A	37.6/50.0	104.2/120.3	144/133	150/150	132/150	329/329	149/138	150/150	137/154	333/333	150/139	150/150	138/155	334/334	155/144	175/175	142/160	338/338
50HC**12	HIGH	NONE	—	—	56/55	60/60	59/58	340	60/59	70/70	64/63	344	61/60	70/70	65/64	345	65/64	80/70	69/68	349
		117A	7.8/10.4	21.7/25.0	56/55	60/60	59/58	340/340	60/59	70/70	64/63	344/344	61/60	70/70	65/64	345/345	65/64	80/70	69/68	349/349
		110A	12.0/16.0	33.4/38.5	59/64	60/70	59/59	340/340	64/69	70/70	64/63	344/344	65/70	70/70	65/64	345/345	70/75	80/80	69/69	349/349
	STD	112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	340/340	106/117	110/125	97/108	344/344	107/119	110/125	98/109	345/345	112/123	125/125	102/113	349/349
		112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	340/340	133/149	150/150	122/136	344/344	134/150	150/150	123/137	345/345	139/155	150/175	127/142	349/349
		112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	340/340	152/141	175/175	140/157	344/344	154/143	175/175	141/158	345/345	158/147	175/175	145/163	349/349
460-3-60	HIGH	NONE	—	—	25	30	26	134	26	30	28	136	27	30	28	136	29	35	30	138
		116A	13.9	16.7	30	26	134	134	28	30	28	136	29	30	28	136	31	35	30	138
		113A	16.5	19.8	30	27	134	134	32	35	29	136	33	35	30	136	35	35	32	138
	STD	115A	33.0	39.7	55	60	50	134	57	60	52	136	58	60	53	136	60	60	55	138
		114A+116A	41.7	50.2	68	70	62	134	70	70	64	136	71	80	65	136	73	80	67	138
		115A+113A	50.0	60.1	65	70	73	134	68	80	76	136	68	80	76	136	70	80	78	138
50HC**12	HIGH	NONE	—	—	26	30	27	159	28	30	29	161	28	30	29	161	30	35	32	163
		116A	13.9	16.7	27	30	27	159	30	30	29	161	30	30	29	161	32	35	32	163
		113A	16.5	19.8	31	35	28	159	34	35	30	161	34	35	30	161	36	40	33	163
	MED	115A	33.0	39.7	56	60	51	159	58	60	53	161	59	60	54	161	61	70	56	163
		114A+116A	41.7	50.2	69	70	63	159	72	80	65	161	72	80	66	161	74	80	68	163
		115A+113A	50.0	60.1	67	80	75	159	69	80	77	161	69	80	77	161	72	80	79	163
575-3-60	HIGH	NONE	—	—	27	30	29	164	29	35	31	166	29	35	31	166	31	35	33	168
		116A	13.9	16.7	29	30	29	164	32	35	31	166	32	35	31	166	34	35	33	168
		113A	16.5	19.8	33	35	30	164	35	35	32	166	36	40	33	166	38	40	35	168
	STD	115A	33.0	39.7	58	60	53	164	60	60	55	166	61	70	56	166	63	70	58	168
		114A+116A	41.7	50.2	71	80	65	164	73	80	67	166	74	80	68	166	76	80	70	168
		115A+113A	50.0	60.1	69	80	76	164	71	80	79	166	71	80	79	166	74	80	81	168
575-3-60	HIGH	NONE	—	—	19	25	20	107	23	25	24	111	21	25	22	109	25	30	26	113
		118A	17.0	20.4	30	30	27	107	35	35	32	111	32	35	29	109	37	40	34	113
		119A	34.0	40.9	56	60	51	107	61	70	55	111	58	60	53	109	63	70	57	113
	MED	118A+119A	51.0	61.3	66	70	75	107	71	80	79	111	68	80	76	109	73	80	81	113
		NONE	—	—	20	25	21	116	24	30	26	120	22	25	23	118	26	30	27	122
		119A	17.0	20.4	32	35	29	116	36	40	33	120	34	35	31	118	38	40	35	122
575-3-60	HIGH	119A	34.0	40.9	57	60	52	116	62	70	57	120	59	60	54	118	64	70	59	122
		118A+119A	51.0	61.3	67	80	76	116	72	80	80	120	70	80	78	118	74	80	82	122
		NONE	—	—	22	25	23	130	26	30	27	134	24	25	25	132	28	30	29	136
	STD	119A	17.0	20.4	34	35	31	130	38	40	35	134	36	40	33	132	41	45	37	136
		119A	34.0	40.9	59	60	54	130	64	70	59	134	61	70	56	132	66	70	60	136
		118A+119A	51.0	61.3	70	80	78	130	74	80	82	134	72	80	80	132	76	80	84	136

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 17 – Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.					w/ P.E. (pwrd fr/unit)					NO P.E.					w/ P.E. (pwrd fr/unit)				
					MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA
50HC**08	NOM. V-Ph-HZ	STD	NONE	—	40/40	50/50	41/41	195	195/195	44/44	50/50	46/46	199	199/199	45/45	50/50	47/47	200	200/200	48/48	60/60	51/51	204	204/204
			117A	7.8/10.4	40/40	50/50	41/41	195/195	195/195	44/44	50/50	46/46	199/199	199/199	45/45	50/50	47/47	200/200	200/200	49/49	60/60	51/51	204/204	204/204
			110A	12.0/16.0	56/56	60/60	45/51	195/195	195/195	60/60	60/60	49/55	199/199	199/199	62/62	70/70	51/56	200/200	200/200	66/66	70/70	55/61	204/204	204/204
			111A	18.6/24.8	82/82	90/90	66/75	195/195	195/195	87/87	90/90	70/79	199/199	199/199	88/88	90/90	72/81	200/200	200/200	93/93	100/100	76/85	204/204	204/204
			112A	24.0/32.0	104/104	110/110	83/95	195/195	195/195	108/108	110/110	88/99	199/199	199/199	110/110	110/110	89/101	200/200	200/200	114/114	125/125	93/105	204/204	204/204
	208/230-3-60	MED	112A+117A	31.8/42.4	135/135	150/150	108/124	195/195	195/195	140/140	150/150	113/128	199/199	199/199	141/141	150/150	114/129	200/200	200/200	146/146	150/150	118/134	204/204	204/204
			NONE	—	41/41	50/50	43/43	199	199/199	45/45	50/50	47/47	203	203/203	46/46	50/50	48/48	204	204/204	50/50	60/60	53/52	208	208/208
			117A	7.8/10.4	41/41	50/50	43/43	199/199	199/199	45/45	50/50	47/47	203/203	203/203	46/46	50/50	48/48	204/204	204/204	51/51	60/60	53/52	208/208	208/208
			110A	12.0/16.0	57/57	60/60	47/52	199/199	199/199	51/56	70/70	51/56	203/203	203/203	63/63	70/70	52/58	204/204	204/204	68/68	100/100	56/62	208/208	208/208
			111A	18.6/24.8	84/84	90/90	68/76	199/199	199/199	88/88	90/90	72/81	203/203	203/203	90/90	90/90	73/82	204/204	204/204	94/94	100/100	78/86	208/208	208/208
50HC**08	460-3-60	HIGH	112A	24.0/32.0	109/109	110/110	85/96	199/199	199/199	110/110	110/110	89/101	203/203	203/203	111/111	125/125	90/102	204/204	204/204	116/116	125/125	95/106	208/208	208/208
			112A+117A	31.8/42.4	140/140	150/150	114/129	249/249	249/249	145/145	150/150	118/133	253/253	253/253	146/146	150/150	120/134	254/254	254/254	151/151	175/175	124/138	258/258	258/258
			NONE	—	19	20	19	97	97	20	25	21	99	99	21	25	22	99	99	23	25	24	101	101
			116A	13.9	25	25	23	97	97	27	30	25	99	99	28	30	25	99	99	30	30	27	101	101
			113A	16.5	29	30	26	97	97	31	35	29	99	99	32	35	29	99	99	34	35	31	101	101
	575-3-60	STD	114A	27.8	46	50	42	97	97	48	50	44	99	99	49	50	44	99	99	51	60	46	101	101
			115A	33.0	54	60	49	97	97	56	60	51	99	99	56	60	52	102	102	59	60	54	101	101
			114A+116A	41.7	67	70	61	97	97	69	70	63	99	99	70	70	64	102	102	72	80	66	101	101
			NONE	—	20	25	20	100	100	21	25	22	102	102	22	25	23	102	102	24	25	25	104	104
			116A	13.9	26	30	24	100	100	28	30	26	102	102	29	30	26	102	102	31	35	28	104	104
575-3-60	HIGH	MED	113A	16.5	30	30	27	100	100	32	35	29	102	102	33	35	30	102	102	35	35	32	104	104
			114A	27.8	47	50	43	100	100	49	50	45	102	102	50	50	45	102	102	52	60	47	104	104
			115A	33.0	55	60	50	100	100	57	60	52	102	102	58	60	53	102	102	60	60	55	104	104
			114A+116A	41.7	68	70	62	100	100	70	70	64	102	102	71	80	65	102	102	73	80	67	104	104
			NONE	—	21	25	22	125	125	22	25	24	127	127	23	25	24	127	127	25	30	26	129	129
	STD	STD	116A	13.9	27	30	25	125	125	30	30	27	127	127	30	30	27	127	127	32	35	29	129	129
			119A	17.0	31	35	28	125	125	34	35	30	127	127	34	35	31	127	127	36	40	33	129	129
			110A	12.0/16.0	33/33	40	44	125	125	51	60	46	127	127	51	60	47	127	127	53	60	49	129	129
			111A	18.6/24.8	48	50	44	125	125	58	60	53	127	127	59	60	54	127	127	61	70	56	129	129
			112A	24.0/32.0	69	70	63	125	125	72	80	65	127	127	72	80	66	127	127	74	80	68	129	129
575-3-60	MED	STD	NONE	—	14	15	14	79	79	18	20	19	83	83	16	20	16	81	81	19	25	21	85	85
			116A	13.9	29	30	27	79	79	34	35	31	83	83	32	35	29	81	81	36	40	33	85	85
			119A	34.0	55	60	50	79	79	60	60	55	83	83	57	60	52	81	81	62	70	57	85	85
			NONE	—	15	20	15	83	83	18	20	19	87	87	16	20	17	85	85	20	25	21	89	89
			118A	17.0	30	30	27	83	83	35	35	32	87	87	35	35	29	85	85	37	40	34	89	89
	HIGH	MED	119A	34.0	56	60	51	83	83	61	70	55	87	87	58	60	53	85	85	63	70	57	89	89
			NONE	—	16	20	16	92	92	19	25	21	96	96	17	20	18	94	94	21	25	23	98	98
			118A	17.0	32	35	29	92	92	36	40	33	96	96	34	35	31	94	94	38	40	35	98	98
			119A	34.0	57	60	52	92	92	62	70	57	96	96	59	60	54	94	94	64	70	59	98	98
			NONE	—	21	25	20	100	100	22	25	24	102	102	23	25	24	102	102	25	30	26	104	104
			116A	13.9	26	30	24	100	100	28	30	26	102	102	29	30	26	102	102	31	35	28	104	104
			113A	16.5	30	30	27	100	100	32	35	29	102	102	33	35	30	102	102	35	35	32	104	104
			114A	27.8	47	50	43	100	100	49	50	45	102	102	50	50	45	102	102	52	60	47	104	104

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 17 - Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.			w/ P.E. (pwrdd fr/unit)			NO P.E.			w/ P.E. (pwrdd fr/unit)						
					MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA	MCA	HACR BRKR	DISC. SIZE FLA LRA				
50HC**09	STD	NONE	—	—	40/40	50/50	42/41	195	44/44	50/50	46/46	199	45/45	50/50	47/47	200	49/49	60/60	52/51	204
		117A	7.8/10.4	21.7/25.0	40/40	50/50	42/41	195/195	44/44	50/50	46/46	199/199	45/45	50/50	47/47	200/200	49/49	60/60	52/51	204/204
		110A	12.0/16.0	33.4/38.5	56/56	60/60	45/51	195/195	60/60	60/60	49/55	199/199	62/62	70/70	51/56	200/200	66/66	70/70	55/61	204/204
		111A	18.6/24.8	51.7/59.7	82/82	90/90	66/75	195/195	87/87	90/90	70/79	199/199	88/88	90/90	72/81	200/200	93/93	100/100	76/85	204/204
		112A	24.0/32.0	66.7/77.0	104/104	110/110	83/95	195/195	108/108	110/110	88/99	199/199	110/110	110/110	89/101	200/200	114/114	125/125	93/105	204/204
	MED	112A+117A	31.8/42.4	88.4/102.0	135/135	150/150	108/124	195/195	140/140	150/150	113/128	199/199	141/141	150/150	114/129	200/200	146/146	150/150	118/134	204/204
		NONE	—	—	41/41	50/50	43/43	199	45/45	50/50	47/47	203	46/46	50/50	49/48	204	50/50	60/60	53/53	208
		117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	199/199	45/45	50/50	47/47	203/203	46/46	50/50	49/48	204/204	51/51	60/60	53/53	208/208
		110A	12.0/16.0	33.4/38.5	57/57	60/60	47/52	199/199	62/62	70/70	51/56	203/203	63/63	70/70	52/58	204/204	68/68	70/70	56/62	208/208
		111A	18.6/24.8	51.7/59.7	84/84	90/90	68/76	199/199	88/88	90/90	72/81	203/203	90/90	90/90	73/82	204/204	94/94	100/100	78/86	208/208
460-3-60	STD	112A	24.0/32.0	66.7/77.0	105/105	110/110	85/96	199/199	110/110	110/110	89/101	203/203	111/111	125/125	90/102	204/204	116/116	125/125	95/106	208/208
		112A+117A	31.8/42.4	88.4/102.0	136/136	150/150	110/125	199/199	141/141	150/150	114/129	203/203	142/142	150/150	115/131	204/204	147/147	150/150	120/135	208/208
		NONE	—	—	45/45	50/50	47/46	249	49/49	60/60	52/51	253	50/50	60/60	53/52	254	54/54	60/60	57/56	258
		117A	7.8/10.4	21.7/25.0	45/45	50/50	47/46	249/249	49/49	60/60	52/51	253/253	50/50	60/60	53/52	254/254	55/55	60/60	57/56	258/258
		110A	12.0/16.0	33.4/38.5	61/61	70/70	51/56	249/249	66/66	70/70	55/60	253/253	67/67	70/70	56/61	254/254	72/72	80/80	61/65	258/258
	MED	111A	18.6/24.8	51.7/59.7	87/87	90/90	72/80	249/249	92/92	100/100	76/84	253/253	93/93	100/100	77/85	254/254	98/98	100/100	82/90	258/258
		112A	24.0/32.0	66.7/77.0	109/109	110/110	89/100	249/249	114/114	125/125	93/104	253/253	115/115	125/125	95/105	254/254	120/120	125/125	99/110	258/258
		112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	114/129	249/249	145/145	150/150	118/133	253/253	146/146	150/150	120/134	254/254	151/151	175/175	124/138	258/258
		NONE	—	—	19	25	19	97	21	25	22	99	21	25	22	99	23	25	24	101
		116A	13.9	16.7	25	25	23	97	27	30	25	99	28	30	25	99	30	30	27	101
575-3-60	STD	113A	16.5	19.8	29	30	26	97	31	35	28	99	32	35	29	99	34	35	31	101
		114A	27.8	33.4	46	50	42	97	48	50	44	99	49	50	44	99	51	60	46	101
		115A	33.0	39.7	54	60	49	97	56	60	51	99	56	60	52	99	59	60	54	101
		114A+116A	41.7	50.2	67	70	61	97	69	70	63	99	70	70	64	99	72	80	66	101
		NONE	—	—	20	25	20	100	22	25	23	102	22	25	23	102	24	25	25	104
	MED	116A	13.9	16.7	26	30	24	100	28	30	26	102	29	30	26	102	31	35	28	104
		113A	16.5	19.8	30	30	27	100	32	35	29	102	33	35	30	102	35	35	32	104
		114A	27.8	33.4	47	50	43	100	49	50	45	102	50	50	45	102	52	60	47	104
		115A	33.0	39.7	55	60	50	100	57	60	52	102	58	60	53	102	60	60	55	104
		114A+116A	41.7	50.2	68	70	62	100	70	70	64	102	71	80	65	102	73	80	67	104
HIGH	NONE	—	—	21	25	22	125	23	25	24	127	23	25	24	127	25	30	26	129	
	116A	13.9	16.7	27	30	25	125	30	30	27	127	30	30	27	127	32	35	29	129	
	113A	16.5	19.8	31	35	28	125	34	35	30	127	34	35	31	127	36	40	33	129	
	114A	27.8	33.4	48	50	44	125	51	60	46	127	51	60	47	127	53	60	49	129	
	115A	33.0	39.7	56	60	51	125	58	60	53	127	59	60	54	127	61	70	56	129	
575-3-60	HIGH	114A+116A	41.7	50.2	69	70	63	125	72	80	65	127	72	80	66	127	74	80	68	129
		NONE	—	—	15	20	16	79	19	20	20	83	17	20	18	81	21	25	22	85
		118A	17.0	20.4	29	30	27	79	34	35	31	83	32	35	29	81	36	40	33	85
		119A	34.0	40.9	55	60	50	79	60	60	55	83	57	60	52	81	62	70	57	85
		NONE	—	—	16	20	16	83	20	25	21	87	18	20	18	85	21	25	23	89
575-3-60	MED	118A	17.0	20.4	30	30	27	83	35	35	32	87	32	35	29	85	37	40	33	89
		119A	34.0	40.9	56	60	51	83	61	70	55	87	58	60	53	85	63	70	57	89
		NONE	—	—	17	20	18	92	21	25	22	96	19	20	20	94	22	25	24	98
		118A	17.0	20.4	32	35	29	92	36	40	33	96	34	35	31	94	38	40	35	98
		119A	34.0	40.9	57	60	52	92	62	70	57	96	59	60	54	94	64	70	59	98

See "Legend and Notes for Tables 10 — 17" on page 48.



Table 17 - Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.						w/ PWRD C.O.					
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.				w/ P.E. (pwrdr fr/unit)				NO P.E.			
					MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE	MCA	HACR BRKR	FLA	DISC. SIZE
NOM. V-PH-HZ	STD	NONE	—	—	51/51	60/60	53/53	254	55/55	60/60	58/57	258	56/56	60/60	59/58	259
		117A	7.8/10.4	21.7/25.0	51/51	60/60	53/53	254/254	55/55	60/60	58/57	258/258	56/56	60/60	59/58	259/259
208/230-3-60	MED	110A	12.0/16.0	33.4/38.5	57/57	60/60	53/53	254/254	62/62	70/70	58/57	258/258	63/63	70/70	59/58	259/259
		112A	24.0/32.0	66.7/77.0	105/105	110/110	85/86	254/254	110/110	110/110	89/101	258/258	111/111	125/125	90/102	259/259
208/230-3-60	HIGH	112A+117A	31.8/42.4	88.4/102.0	138/136	150/150	110/125	254/254	141/141	150/150	114/129	258/258	142/142	150/150	115/131	259/259
		112A+110A	37.6/50.0	104.2/120.3	140/140	150/150	128/146	254/254	144/144	150/150	132/151	258/258	146/146	150/150	134/152	259/259
460-3-60	STD	NONE	—	—	54/54	60/60	58/56	304	58/58	70/70	62/61	308	59/59	70/70	63/62	309
		117A	7.8/10.4	21.7/25.0	54/54	60/60	58/56	304/304	58/58	70/70	62/61	308/308	59/59	70/70	63/62	309/309
460-3-60	MED	110A	12.0/16.0	33.4/38.5	61/61	70/70	58/56	304/304	66/66	70/70	62/61	308/308	67/67	70/70	63/62	309/309
		112A	24.0/32.0	66.7/77.0	109/109	110/110	89/100	304/304	114/114	125/125	93/104	308/308	115/115	125/125	95/105	309/309
50HC**11	HIGH	112A+117A	31.8/42.4	88.4/102.0	144/144	150/150	114/129	304/304	145/145	150/150	118/133	308/308	146/146	150/150	120/134	309/309
		112A+110A	37.6/50.0	104.2/120.3	148/148	150/150	132/150	304/304	149/149	150/150	137/154	308/308	150/150	150/150	138/155	309/309
50HC**11	STD	NONE	—	—	57/57	70/70	61/60	315	61/61	70/70	65/64	319	62/62	70/70	66/65	320
		117A	7.8/10.4	21.7/25.0	57/57	70/70	61/60	315/315	61/61	70/70	65/64	319/319	62/62	70/70	66/65	320/320
50HC**11	MED	110A	12.0/16.0	33.4/38.5	64/64	70/70	61/60	315/315	69/69	70/70	65/64	319/319	70/70	80/70	66/65	320/320
		112A	24.0/32.0	66.7/77.0	113/113	125/125	92/103	315/315	117/117	125/125	97/108	319/319	119/119	125/125	98/109	320/320
50HC**11	HIGH	112A+117A	31.8/42.4	88.4/102.0	144/144	150/150	117/132	315/315	149/149	150/150	122/136	319/319	150/150	150/150	123/137	320/320
		112A+110A	37.6/50.0	104.2/120.3	148/148	150/150	135/153	315/315	152/152	175/175	140/157	319/319	154/154	175/175	141/158	320/320
575-3-60	STD	NONE	—	—	24	30	25	122	25	30	27	124	26	30	27	124
		116A	13.9	16.7	26	30	25	122	28	30	27	124	29	30	27	124
575-3-60	MED	113A	16.5	19.8	31	35	28	147	34	35	30	149	34	35	31	149
		115A	33.0	39.7	56	60	51	147	58	60	53	149	59	60	54	149
575-3-60	HIGH	114A+116A	41.7	50.2	69	70	63	147	72	80	65	149	72	80	66	149
		115A+113A	50.0	60.1	67	80	75	147	69	80	77	149	69	80	77	149
575-3-60	STD	NONE	—	—	26	30	26	147	28	30	28	149	28	30	28	149
		116A	13.9	16.7	29	30	26	147	32	35	30	154	32	35	30	154
575-3-60	MED	113A	16.5	19.8	33	35	30	152	35	35	32	154	36	35	33	154
		115A	33.0	39.7	58	60	53	152	60	60	55	154	61	60	56	154
575-3-60	HIGH	114A+116A	41.7	50.2	71	80	65	152	73	80	67	154	74	80	68	154
		115A+113A	50.0	60.1	69	80	76	152	71	80	79	154	71	80	79	154
575-3-60	STD	NONE	—	—	19	20	20	97	23	25	24	101	21	25	22	99
		118A	17.0	20.4	30	30	27	97	35	35	32	101	32	35	29	99
575-3-60	MED	119A	34.0	40.9	56	60	51	97	61	70	55	101	58	60	53	99
		118A+119A	51.0	61.3	66	70	75	97	71	80	79	101	68	80	76	99
575-3-60	HIGH	118A	17.0	20.4	32	35	29	106	24	25	25	110	22	25	23	108
		119A	34.0	40.9	57	60	52	106	62	70	57	110	59	60	54	108
575-3-60	STD	NONE	—	—	22	25	23	120	26	30	27	124	24	25	25	122
		118A	17.0	20.4	34	35	31	120	38	40	35	124	36	40	33	122
575-3-60	MED	119A	34.0	40.9	59	60	54	120	64	70	59	124	61	70	56	122
		118A+119A	51.0	61.3	70	80	78	120	74	80	82	124	72	80	80	122

See "Legend and Notes for Tables 10 — 17" on page 48.

Table 17 - Unit Wire Sizing Data with Factory Installed HACR Breaker and 2-Speed Indoor Fan Option — Units Produced Prior to July 30, 2012 (cont)

UNIT	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.										w/ PWRD C.O.									
		CRHEATER***A00	Nom (kW)	FLA	NO P.E.					w/ P.E. (pwrd fr/unit)					NO P.E.					w/ P.E. (pwrd fr/unit)				
					MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA	MCA	HACR BRKR	FLA	DISC. SIZE	LRA
50HC**12	STD	NONE	—	—	50/50	60/60	52/52	279	279	53/53	60/60	56/56	283	283	54/54	60/60	57/57	284	284	58/58	70/70	62/61	288	288
		117A	7.8/10.4	21.7/25.0	50/50	60/60	52/52	279/279	279/279	53/53	60/60	56/56	283/283	283/283	54/54	60/60	57/57	284/284	284/284	58/58	70/70	62/61	288/288	288/288
		110A	12.0/16.0	33.4/38.5	57/57	60/60	52/52	279/279	279/279	62/62	70/70	56/56	283/283	283/283	63/63	70/70	57/58	284/284	284/284	68/68	70/70	62/62	288/288	288/288
		112A	24.0/32.0	66.7/77.0	105/105	110/110	85/86	279/279	279/279	141/141	150/150	114/129	283/283	283/283	142/142	150/150	115/131	284/284	284/284	147/147	150/150	120/135	288/288	288/288
50HC**12	MED	112A+117A	31.8/42.4	88.4/102.0	138/136	150/150	110/125	279/279	279/279	144/144	150/150	132/151	283/283	283/283	146/146	150/150	134/152	284/284	284/284	150/150	150/150	138/156	288/288	288/288
		112A+110A	37.6/50.0	104.2/120.3	140/140	150/150	128/146	279/279	279/279	144/144	150/150	132/151	283/283	283/283	146/146	150/150	134/152	284/284	284/284	150/150	150/150	138/156	288/288	288/288
		NONE	—	—	53/53	60/60	56/55	329	329	57/57	70/70	60/59	333	333	58/58	70/70	62/60	334	334	62/62	70/70	66/65	338	338
		117A	7.8/10.4	21.7/25.0	53/53	60/60	56/55	329/329	329/329	57/57	70/70	60/59	333/333	333/333	58/58	70/70	62/60	334/334	334/334	62/62	70/70	66/65	338/338	338/338
50HC**12	HIGH	110A	12.0/16.0	33.4/38.5	61/61	70/70	56/56	329/329	329/329	66/66	70/70	60/60	333/333	333/333	67/67	70/70	62/61	334/334	334/334	72/72	80/80	66/65	338/338	338/338
		112A	24.0/32.0	66.7/77.0	109/109	110/110	89/100	329/329	329/329	114/114	125/125	93/104	333/333	333/333	115/115	125/125	95/105	334/334	334/334	120/120	125/125	99/110	338/338	338/338
		112A+117A	31.8/42.4	88.4/102.0	140/140	150/150	114/129	329/329	329/329	145/145	150/150	118/133	333/333	333/333	146/146	150/150	120/134	334/334	334/334	151/151	175/175	124/138	338/338	338/338
		112A+110A	37.6/50.0	104.2/120.3	144/144	150/150	132/150	329/329	329/329	149/149	150/150	137/154	333/333	333/333	150/150	150/150	138/155	334/334	334/334	155/155	175/175	142/160	338/338	338/338
50HC**12	STD	NONE	—	—	56/56	60/60	59/58	340	340	60/60	70/70	64/63	344	344	61/61	70/70	65/64	345	345	65/65	80/80	69/68	349	349
		117A	7.8/10.4	21.7/25.0	56/56	60/60	59/58	340/340	340/340	60/60	70/70	64/63	344/344	344/344	61/61	70/70	65/64	345/345	345/345	65/65	80/80	69/68	349/349	349/349
		110A	12.0/16.0	33.4/38.5	64/64	70/70	59/59	340/340	340/340	69/69	70/70	64/63	344/344	344/344	70/70	80/80	65/64	345/345	345/345	75/75	80/80	69/69	349/349	349/349
		112A	24.0/32.0	66.7/77.0	113/113	125/125	92/103	340/340	340/340	117/117	125/125	97/108	344/344	344/344	119/119	150/150	125/125	98/109	345/345	123/123	125/125	102/113	349/349	349/349
50HC**12	MED	112A+117A	31.8/42.4	88.4/102.0	144/144	150/150	117/132	340/340	340/340	149/149	150/150	122/136	344/344	344/344	150/150	150/150	123/137	345/345	345/345	155/155	175/175	127/142	349/349	349/349
		112A+110A	37.6/50.0	104.2/120.3	148/148	150/150	135/153	340/340	340/340	152/152	175/175	140/157	344/344	344/344	154/154	175/175	141/158	345/345	345/345	158/158	175/175	145/163	349/349	349/349
		NONE	—	—	25	30	26	134	134	26	30	28	136	136	27	30	28	136	136	29	35	30	138	138
		116A	13.9	16.7	26	30	26	134	134	28	30	28	136	136	29	30	28	136	136	31	35	30	138	138
50HC**12	HIGH	113A	16.5	19.8	30	30	27	134	134	32	35	29	136	136	33	35	29	136	136	35	40	32	138	138
		115A	33.0	39.7	55	60	50	134	134	57	60	52	136	136	58	60	53	136	136	60	60	55	138	138
		114A+116A	41.7	50.2	68	70	62	134	134	70	80	64	136	136	71	80	65	136	136	73	80	67	138	138
		115A+113A	50.0	60.1	65	70	73	134	134	68	80	76	136	136	68	80	76	136	136	70	80	78	138	138
50HC**12	STD	NONE	—	—	26	30	27	159	159	28	30	29	161	161	28	30	29	161	161	30	35	32	163	163
		116A	13.9	16.7	27	30	27	159	159	28	30	29	161	161	28	30	29	161	161	32	35	32	163	163
		113A	16.5	19.8	31	35	28	159	159	34	35	30	161	161	34	35	31	161	161	36	40	33	163	163
		115A	33.0	39.7	56	60	51	159	159	58	60	53	161	161	59	60	54	161	161	61	70	56	163	163
50HC**12	MED	114A+116A	41.7	50.2	69	70	63	159	159	72	80	65	161	161	72	80	66	161	161	74	80	68	163	163
		115A+113A	50.0	60.1	67	80	75	159	159	69	80	77	161	161	69	80	77	161	161	72	80	79	163	163
		NONE	—	—	27	30	29	164	164	29	35	31	166	166	29	35	31	166	166	31	35	33	168	168
		116A	13.9	16.7	29	30	29	164	164	32	35	31	166	166	32	35	31	166	166	34	35	33	168	168
50HC**12	HIGH	113A	16.5	19.8	33	35	30	164	164	35	35	32	166	166	36	40	33	166	166	38	40	35	168	168
		115A	33.0	39.7	58	60	53	164	164	60	60	55	166	166	61	70	56	166	166	63	70	58	168	168
		114A+116A	41.7	50.2	71	80	65	164	164	73	80	67	166	166	74	80	68	166	166	76	80	70	168	168
		115A+113A	50.0	60.1	69	80	76	164	164	71	80	79	166	166	71	80	79	166	166	74	80	81	168	168
575-3-60	STD	NONE	—	—	19	25	20	107	107	23	25	24	111	111	21	25	22	109	109	25	30	26	113	113
		118A	17.0	20.4	30	30	27	107	107	35	35	32	111	111	32	35	29	109	109	37	40	34	113	113
		119A	34.0	40.9	56	60	51	107	107	61	70	55	111	111	58	60	53	109	109	63	70	57	113	113
		118A+119A	51.0	61.3	66	70	75	107	107	61	80	79	111	111	68	80	76	109	109	73	80	81	113	113
575-3-60	MED	NONE	—	—	20	25	21	116	116	24	30	26	120	120	22	25	23	118	118	26	30	27	122	122
		118A	17.0	20.4	32	35	29	116	116	36	40	33	120	120	34	35	31	118	118	38	40	35	122	122
		119A	34.0	40.9	57	60	52	116	116	62	70	57	120	120	59	60	54	118	118	64	70	59	122	122
		118A+119A	51.0	61.3	67	80	76	116	116	72	80	80	120	120	70	80	78	118	118	74	80	82	122	122
575-3-60	HIGH	NONE	—	—	22	25	23	130	130	26	30	27	134	134	24	25	25	132	132	28	30	29	136	136
		118A	17.0	20.4	34	35	31	130	130	38	40	35	134	134	36	40	33	132	132	41	45	37	136	136
		119A	34.0	40.9	59	60	54	130	130	64	70	59	134	134	61	70	56	132	132	66	70	60	136	136
		118A+119A	51.0	61.3	70	80	78	130	130	74	80	82	134	134	72	80	80	132	132	76	80	84	136	136

See "Legend and Notes for Tables 10 — 17" on page 48.

50HC

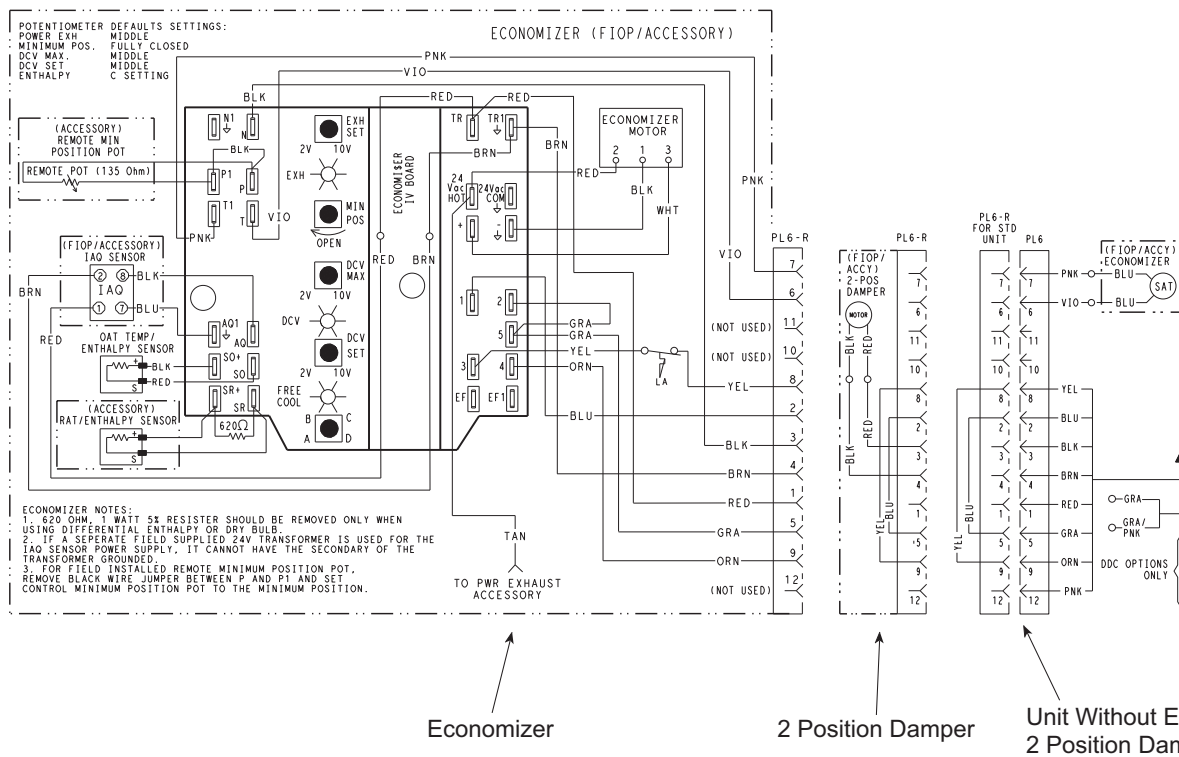


Fig. 81 - EconoMi\$er™ IV Wiring

C10150

Step 11 — Adjust Factory-Installed Options

Smoke Detectors —

Smoke detector(s) will be connected at the Controls Connections Board, at terminals marked “Smoke Shutdown”. Remove jumper JMP 3 when ready to energize unit.

EconoMi\$er IV Occupancy Switch —

Refer to Fig. 81 for general EconoMi\$er IV wiring. External occupancy control is managed through a connection on the Central Terminal Board.

If external occupancy control is desired, connect a time clock or remotely controlled switch (closed for Occupied, open for Unoccupied sequence) at terminals marked OCCUPANCY on CTB. Remove or cut jumper JMP 2 to complete the installation.

Step 12 — Install Accessories

Available accessories include:

- Roof Curb
- Thru-base connection kit (must be installed before unit is set on curb)
- Manual outside air damper
- Two-Position motorized outside air damper

EconoMi\$er IV (with control and integrated barometric relief)

EconoMi\$er2 (without control/for external signal and integrated barometric relief)

Power Exhaust

Differential dry-bulb sensor (EconoMi\$er IV)

Outdoor enthalpy sensor

Differential enthalpy sensor

Electric Heaters

Single Point kits

Low Ambient Controls

Thermostat / Sensors

CO₂ sensor

DDC interface (PremierLink)

Louvered hail guard

Phase monitor control

Winter Start kit

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 Manual for detailed Pre-Start and Start-up instructions.

START-UP CHECKLIST

(Remove and Store in Job File)

I. PRELIMINARY INFORMATION

MODEL NO.: _____ SERIAL NO.: _____
 DATE: _____ TECHNICIAN: _____

II. PRE-START-UP (insert checkmark in box as each item is completed)

- ☐ VERIFY THAT JOBSITE VOLTAGE AGREES WITH VOLTAGE LISTED ON RATING PLATE
- ☐ VERIFY THAT ALL PACKAGING MATERIALS HAVE BEEN REMOVED FROM UNIT
- ☐ REMOVE ALL SHIPPING HOLD DOWN BOLTS AND BRACKETS PER INSTALLATION INSTRUCTIONS
- ☐ VERIFY THAT CONDENSATE CONNECTION IS INSTALLED PER INSTALLATION INSTRUCTIONS
- ☐ CHECK REFRIGERANT PIPING FOR INDICATIONS OF LEAKS; INVESTIGATE AND REPAIR IF NECESSARY
- ☐ CHECK ALL ELECTRICAL CONNECTIONS AND TERMINALS FOR TIGHTNESS
- ☐ CHECK THAT RETURN (INDOOR) AIR FILTERS ARE CLEAN AND IN PLACE
- ☐ VERIFY THAT UNIT INSTALLATION IS LEVEL
- ☐ CHECK FAN WHEELS AND PROPELLER FOR LOCATION IN HOUSING/ORIFICE AND SETSCREW TIGHTNESS
- ☐ CHECK TO ENSURE THAT ELECTRICAL WIRING IS NOT IN CONTACT WITH REFRIGERANT LINES OR SHARP METAL EDGES
- ☐ CHECK PULLEY ALIGNMENT AND BELT TENSION PER INSTALLATION INSTRUCTIONS

III. START-UP (Refer to Unit Service/Maintenance Manual for Start-up Instructions)

ELECTRICAL

SUPPLY VOLTAGE	L1-L2	_____	L2-L3	_____	L3-L1	_____
CIRCUIT 1 COMPRESSOR AMPS	L1	_____	L2	_____	L3	_____
CIRCUIT 2 COMPRESSOR AMPS	L1	_____	L2	_____	L3	_____
INDOOR-FAN AMPS		_____		_____		_____
OUTDOOR-FAN AMPS	NO. 1	_____	NO. 2	_____		_____

TEMPERATURES

OUTDOOR-AIR TEMPERATURE	_____ DB	_____ WB
RETURN-AIR TEMPERATURE	_____ DB	_____ WB
COOLING SUPPLY AIR	_____ DB	_____ WB

PRESSURES (Cooling Mode)

REFRIGERANT SUCTION, CIRCUIT 1	_____ PSIG	_____ F
REFRIGERANT SUCTION, CIRCUIT 2	_____ PSIG	_____ F
REFRIGERANT DISCHARGE, CIRCUIT 1	_____ PSIG	_____ F
REFRIGERANT DISCHARGE, CIRCUIT 2	_____ PSIG	_____ F

- ☐ VERIFY THAT 3-PHASE FAN MOTOR AND BLOWER ARE ROTATING IN CORRECT DIRECTION.
- ☐ VERIFY THAT 3-PHASE SCROLL COMPRESSOR IS ROTATING IN THE CORRECT DIRECTION
- ☐ VERIFY REFRIGERANT CHARGE USING CHARGING CHARTS

GENERAL

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

