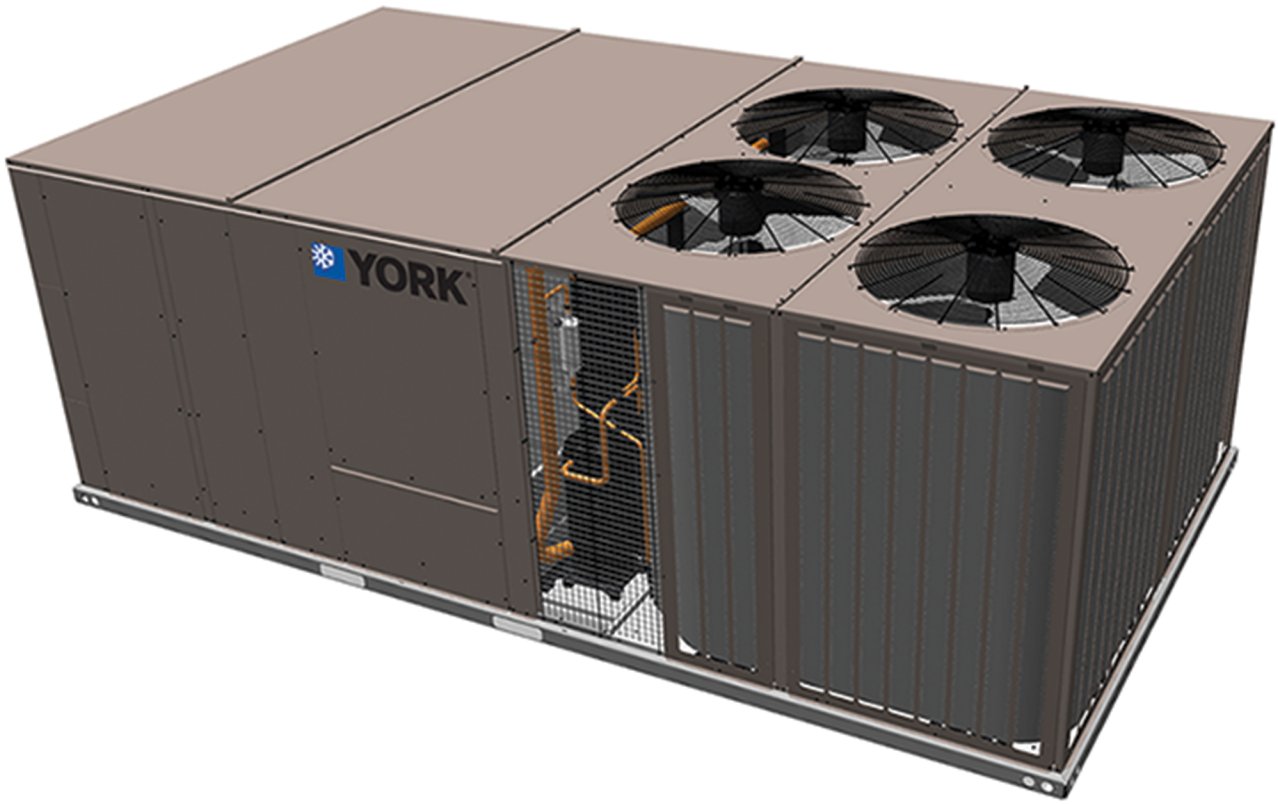
Installation Manual: YORK® Sun™ Choice AV15 to AV28



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YORK®

SMART EQUIPMENT
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Johnson Controls Ducted Systems

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General

Safety considerations

⚠ This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention the signal words DANGER, WARNING or CAUTION.

DANGER indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION indicates a potentially hazardous situation, which, if not avoided may result in minor or moderate injury. It is also used to alert against unsafe practices and hazards involving only property damage.

⚠ WARNING

Improper installation may create a condition where the operation of the product could cause personal injury or property damage. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance or for additional information, consult a qualified contractor, installer or service agency.

⚠ CAUTION

This product must be installed in strict compliance with the installation instructions and any applicable local, state and national codes including, but not limited to building, electrical, and mechanical codes.

⚠ WARNING

This unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure they do not play with the unit. Cleaning and maintenance shall not be performed by children without supervision.

⚠ WARNING

Before you perform service or maintenance operations on the unit, turn off the main power switch to unit. Electrical shock could cause personal injury. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency, or the gas supplier.

⚠ WARNING

ELECTRICAL SHOCK, FIRE, OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

Improper servicing could result in dangerous operation, serious injury, death, or property damage.

*Before servicing, disconnect all electrical power to the furnace.

*When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.

*Verify proper operation after servicing.

⚠ CAUTION

This system uses R-410A refrigerant which operates at higher pressures than R-22. No other refrigerant may be used in this system. Gage sets, hoses, refrigerant containers and recovery systems must be designed to handle R-410A. If you are unsure, consult the equipment manufacturer. Failure to use R-410A compatible servicing equipment may result in property damage or injury.

⚠ WARNING

FIRE OR EXPLOSION HAZARD

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electrical switch
- Do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

Due to system pressure, moving parts, and electrical components, the installation and servicing of air conditioning equipment can be hazardous. Only qualified, trained service personnel must install, repair, or service this equipment. Untrained personnel can perform basic maintenance functions of cleaning coils and filters, and replacing filters.

Observe all the precautions in the literature, labels, and tags that accompany the equipment whenever you work on air conditioning equipment. Be sure to follow all other applicable safety precautions and codes including ANSI Z223.1 or CSA-B149.1- latest edition.

Wear safety glasses and work gloves. Use quenching cloth and have a fire extinguisher available during brazing operations.

This unit is classified as APPLIANCE NOT ACCESSIBLE TO GENERAL PUBLIC.

Inspection

As soon as you receive a unit, you must inspect it for possible damage during transit. If damage is evident, note the extent of the damage on the carrier's freight bill. You must make a separate request for inspection by the carrier's agent in writing.

⚠ CAUTION

This product must be installed in strict compliance with the enclosed installation instructions and any applicable local, state and national codes including, but not limited to, building, electrical, and mechanical codes.

The furnace and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing at pressures in excess of 1/2 PSIG. Pressures greater than 1/2 PSIG will cause gas valve damage resulting in a hazardous condition. If it is subjected to a pressure greater than 1/2 PSIG, the gas valve must be replaced.

The furnace must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG.

Reference

Additional information is available in the following reference forms:

- Technical Guide - 5782792
- General Installation - 5782402
- Smart Equipment™ Control Quick Start Guide 1136326

Renewal parts

Contact your local York® parts distribution center for authorized replacement parts.

Approvals

The design is certified by CSA as follows:

- For use as a cooling only unit, cooling unit with supplemental electric heat or a forced air furnace.
- For outdoor installation only.

- For installation on combustible material and may be installed directly on combustible flooring or, in the U.S., on wood flooring or Class A, Class B or Class C roof covering materials.
- For use with natural gas. The unit can be converted to LP with a kit.

⚠ CAUTION

This product must be installed in strict compliance with the enclosed installation instructions and any applicable local, state, and national codes including, but not limited to, building, electrical, and mechanical codes.

⚠ WARNING

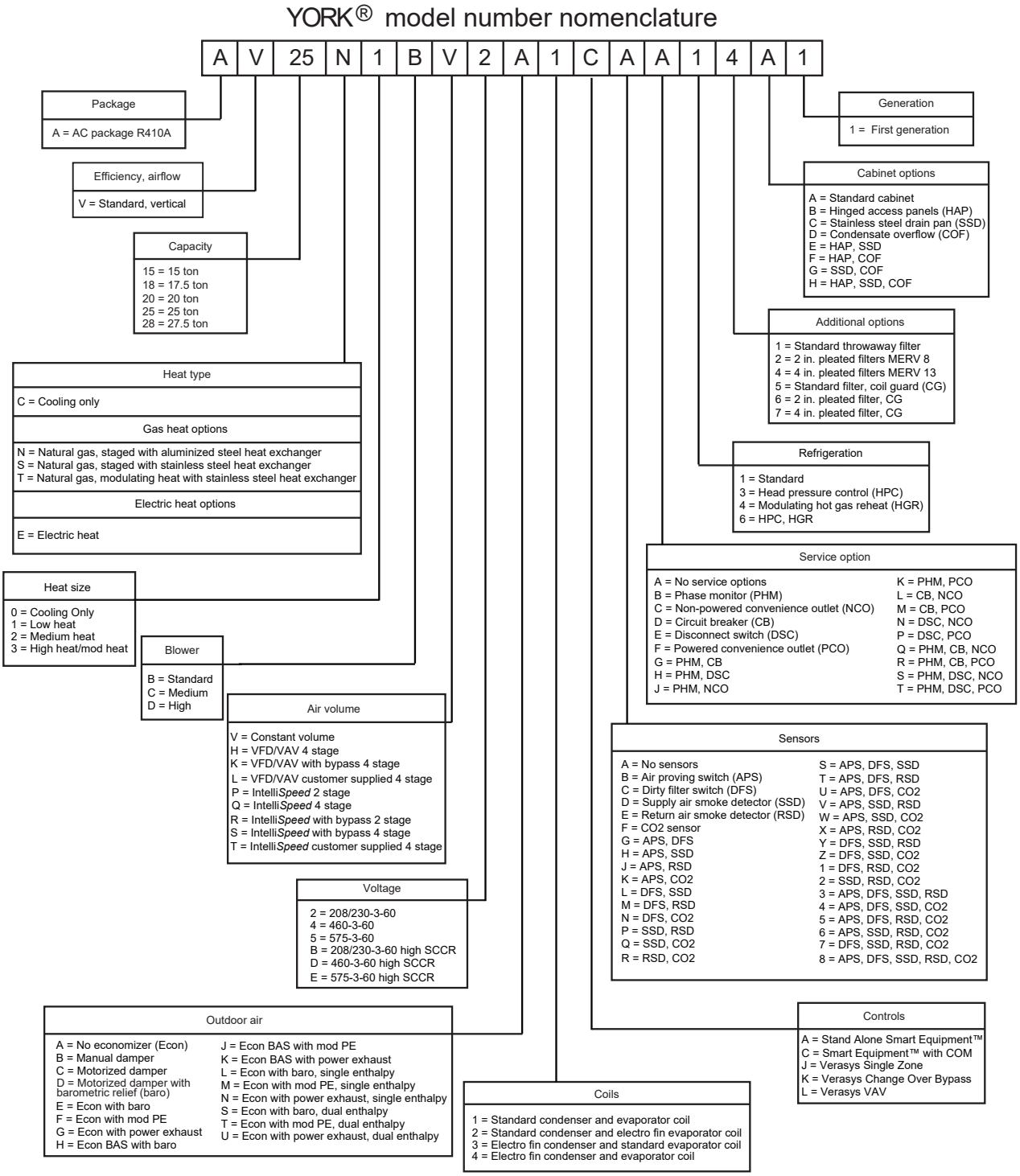
Improper installation may create a condition where the operation of the product could cause personal injury or property damage.

⚠ CAUTION

This system uses R-410A refrigerant which operates at higher pressures than R-22. No other refrigerant may be used in this system.

Nomenclature

Figure 1: Product nomenclature



Installation

Installation safety information

Read the following instructions before you install this appliance. This is an outdoor combination heating and cooling unit. The installer must assure that these instructions are made available to the consumer. The installer must instruct the consumer to retain the instructions for future reference.

- Refer to the unit rating plate for the approved type of gas for this product.
- Install this unit only in a location and position as specified in the Location section.
- Never test for gas leaks with an open flame. Use commercially available soap solution made specifically for the detection of leaks when you check all connections.
- Always install the furnace to operate within the furnace's intended temperature-rise range with the duct system and within the allowable external static pressure range. This information is specified on the unit name/rating plate. See Adjustment Of Temperature Rise.
- This equipment is not to be used for the temporary heating of buildings or structures under construction.
- Provide adequate combustion and ventilation air to the furnace space as specified in the Clearances section.

⚠ WARNING

FIRE OR EXPLOSION HAZARD

Failure to follow the safety warning exactly could result in serious injury, death, or property damage. Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.

Limitations

These units must be installed in accordance with national wiring regulations and the following standards.

Requirements in the U.S.A.

- National Electrical Code, ANSI/NFPA No. 70 - latest edition
- National Fuel Gas Code, ANSI Z223.1 - latest edition
- Gas-Fired Central Furnace Standard, ANSI Z21.47a. - latest edition
- Local building codes
- Local gas utility requirements

Requirements in Canada

- Canadian Electrical Code, CSA C22.1
- Installation Codes, CSA - B149.1
- Local plumbing and waste water codes
- Other applicable local codes

Refer to unit application data found in this document.

After the installation is complete, you must adjust gas fired units to obtain a temperature rise within the range specified on the unit rating plate.

If components are added to a unit to meet local codes, they are installed at the dealer’s and/or customer’s expense.

The size of the unit for the proposed installation must be based on a heat loss/heat gain calculation made according to the methods of the Air Conditioning Contractors of America (ACCA).

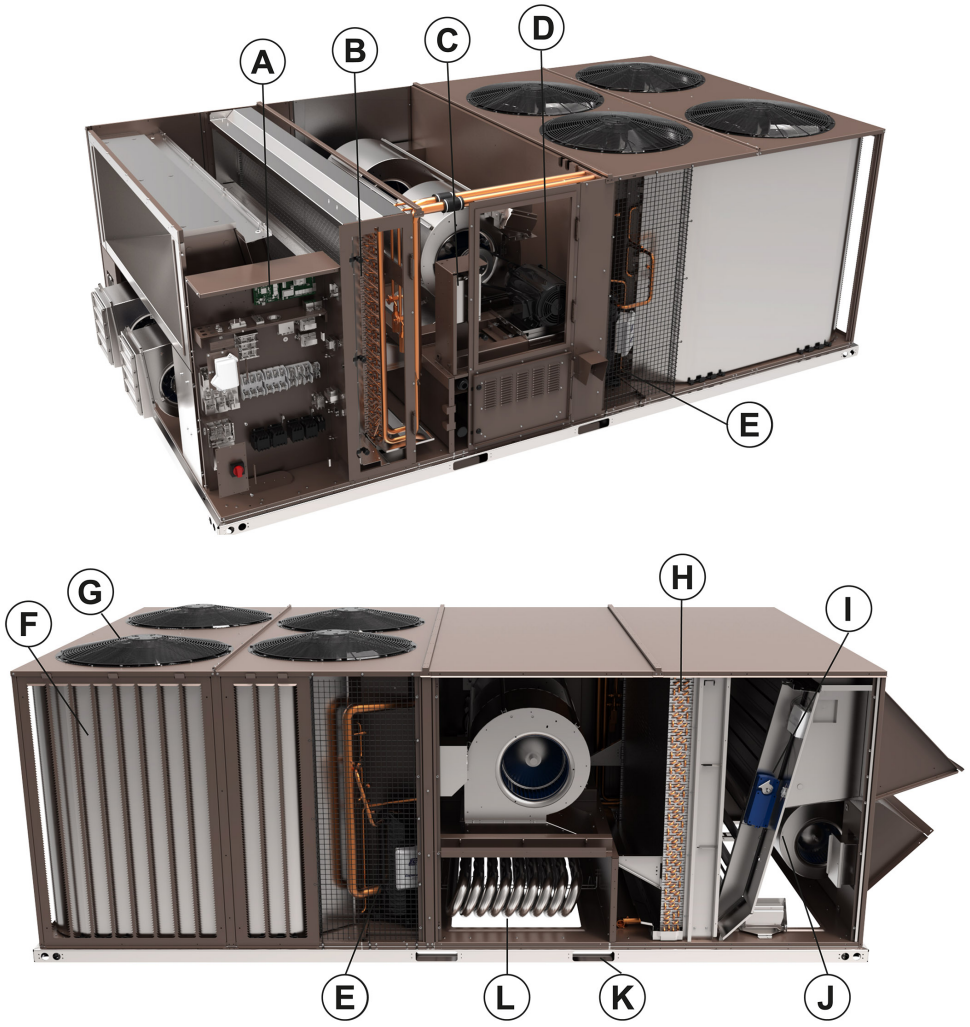
This furnace is not to be used for temporary heating of buildings or structures under construction.

NOTICE

The Smart Equipment™ control board used in this product can effectively operate the cooling system down to 0°F when this product is applied in a comfort cooling application for people. An economizer is typically included in this type of application. When you apply this product for process cooling applications (such as computer rooms or switchgear), call the applications department for Ducted Systems at 1-877-874-SERV for guidance. Additional accessories may be needed for stable operation at temperatures below 30°F.

Unit components

Figure 2: Component location



The previous figure shows the AVXX model. The following table lists the components of the unit.

Table 1: Component location table

Item	Description	Item	Description
A	Smart Equipment™ controls	G	Condenser fans
B	Filter access, 2-inch or 4-inch filter options	H	Copper tube/aluminum fin evaporator coil
C	Optional variable frequency drive	I	Optional economizer. Optional manual or motorized outside air dampers not shown.
D	Belt drive blower motor with dual centrifugal fan design	J	Optional powered exhaust. Optional barometric relief not shown.
E	Scroll compressors in various arrangements to produce 2 or 4 stages of cooling depending on the selected model	K	Full perimeter base rails with holes for overhead rigging
F	MicroChannel condenser coils	L	Optional staged or modulating gas heat with aluminized or stainless steel heat exchanger. Optional electric heat not shown.

Unit limitations

Table 2: AV15 to AV28 unit limitations

Unit voltage	Applied voltage		Outdoor DB temperature
	Minimum	Maximum	Maximum (°F)
208/230-3-60	187	252	125
460-3-60	432	504	125
575-3-60	540	630	125

Location

Use the following guidelines to select a suitable location for these units:

- The unit is designed for outdoor installation only.
- Condenser coils must have an unlimited supply of air. Where a choice of location is possible, position the unit on either the north or east side of the building.
- Suitable for mounting on roof curb.
- For ground level installation, use a level concrete slab with a minimum thickness of 4 inches. The length and width must be at least 6 inches greater than the unit base rails. Do not tie the slab to the building foundation.
- Roof structures must be able to support the weight of the unit and its options and accessories. The unit must be installed on a solid, level roof curb or appropriate angle iron frame.

Maintain level tolerance to 1/2 inch across the entire width and length of the unit.

WARNING

Excessive exposure of the furnace to contaminated combustion air will result in safety and performance related problems. Typical contaminates include the following items:

Permanent wave solution
Chlorinated waxes and cleaners
Chlorine based swimming pool chemicals
Water softening chemicals
Carbon tetrachloride
Halogen type refrigerants
Cleaning solvents (for example, perchloroethylene)
Printing inks
Paint removers
Varnishes
Hydrochloric acid
Cements and glues
Anti static fabric softeners for clothes dryers
Masonry acid washing materials

Clearances

All units require particular clearances for proper operation and service. The installer must make provisions for adequate combustion and ventilation air in accordance with section 5.3 of Air for Combustion and Ventilation of the National Fuel Gas Code, ANSI Z223.1 – latest edition (in the U.S.A.), or Sections 7.2, 7.3, or 7.4 of Gas Installation Codes, CSA-B149.1 (in Canada) - latest edition, and/or applicable provisions of the local building codes. See the Unit clearances table for the clearances required for combustible construction, servicing, and proper unit operation.

Detailed unit clearances are available in the Weights and dimensions section.

WARNING

Do not permit overhanging structures or shrubs to obstruct the condenser air discharge outlet, combustion air inlet, or vent outlets.

Removal of Fork Lift Tunnels

Prior to placing a unit on a roof curb, the protective fork lift tunnels must be removed from the underside of the unit.

1. To remove the protective fork lift tunnels, locate the fork pockets visible on the exterior of the unit base rail and shown in Figure 3.

Figure 3: Protective fork lift tunnels

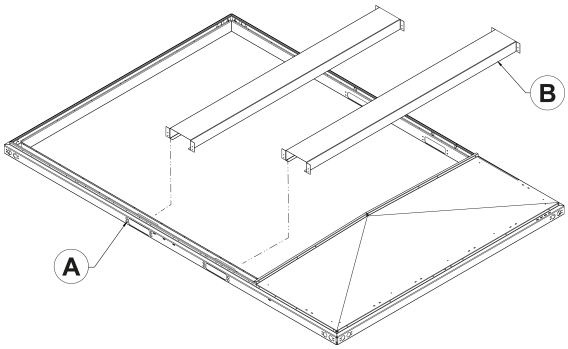


Table 3:

Item	Description
A	Example screw location
B	Fork Tunnel

2. Remove the 16 screws securing the fork tunnels to the unit base rail and remove the fork tunnels from the bottom of the unit as the unit is lifted.

   Note: The fork tunnels and screws can be discarded.

Rigging and handling

Exercise care when you move the unit. Do not remove any packaging until the unit is near the place of installation. To rig the unit, attach chain or cable slings to the lifting holes provided in the base rails. You must use spreader bars across the top of the unit. The spreader bars must have a length that exceeds the largest dimension across the unit.

CAUTION

If a unit is installed on a roof curb other than a York roof curb, you must apply gasketing to all surfaces that come in contact with the unit underside.

CAUTION

Before lifting the unit, make sure that the unit weight is distributed equally on the rigging cables so that it lifts evenly.

Units may be moved or lifted with a forklift from the side only.

The length of the forks must be a minimum of 90 inches.

CAUTION

All panels must be secured in place when the unit is lifted. The condenser coils must be protected from rigging cable damage with plywood or other suitable material.

Weights and dimensions

Figure 4: AV15 and AV18 physical dimensions

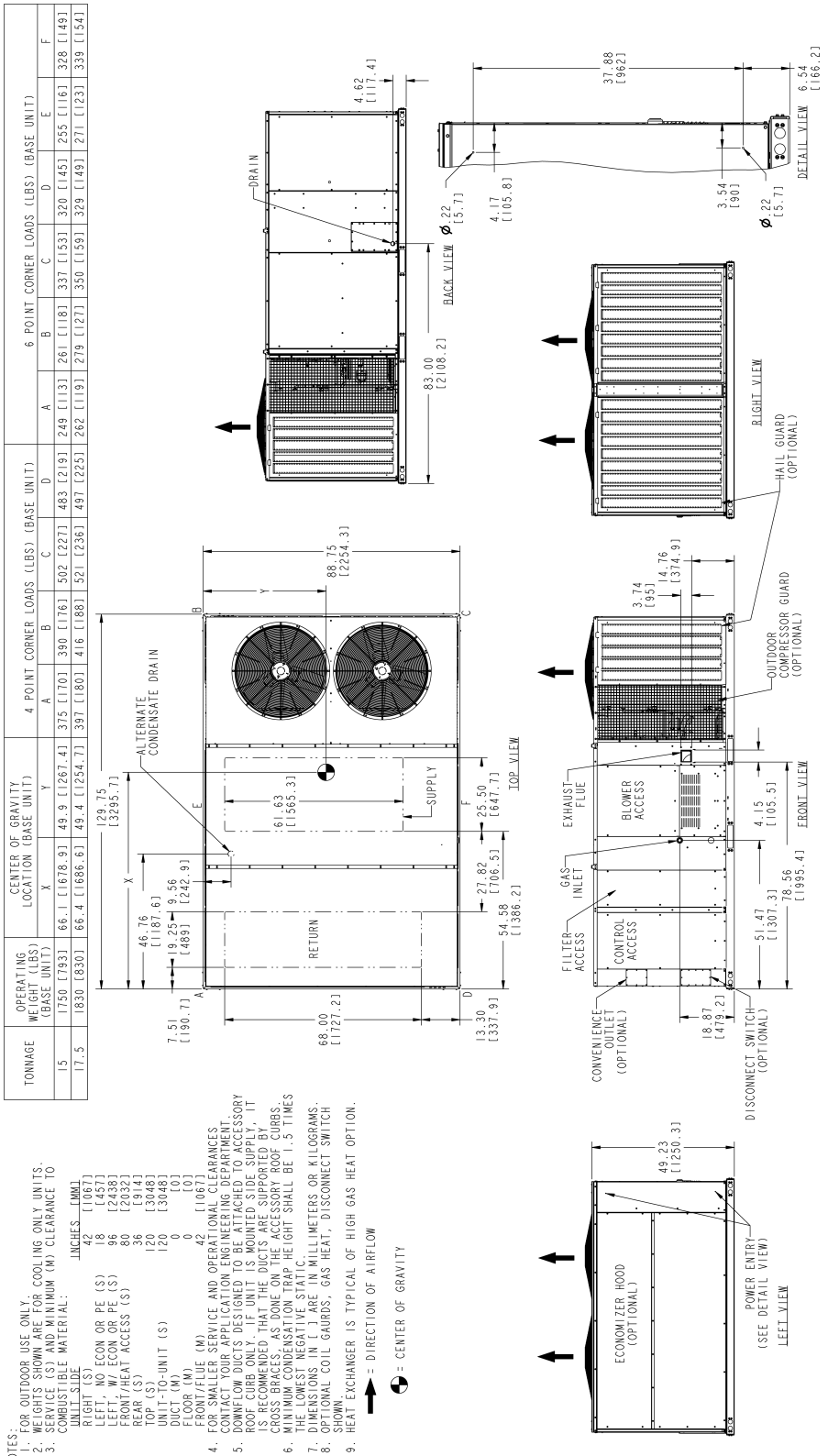


Figure 5: AV20 physical dimensions

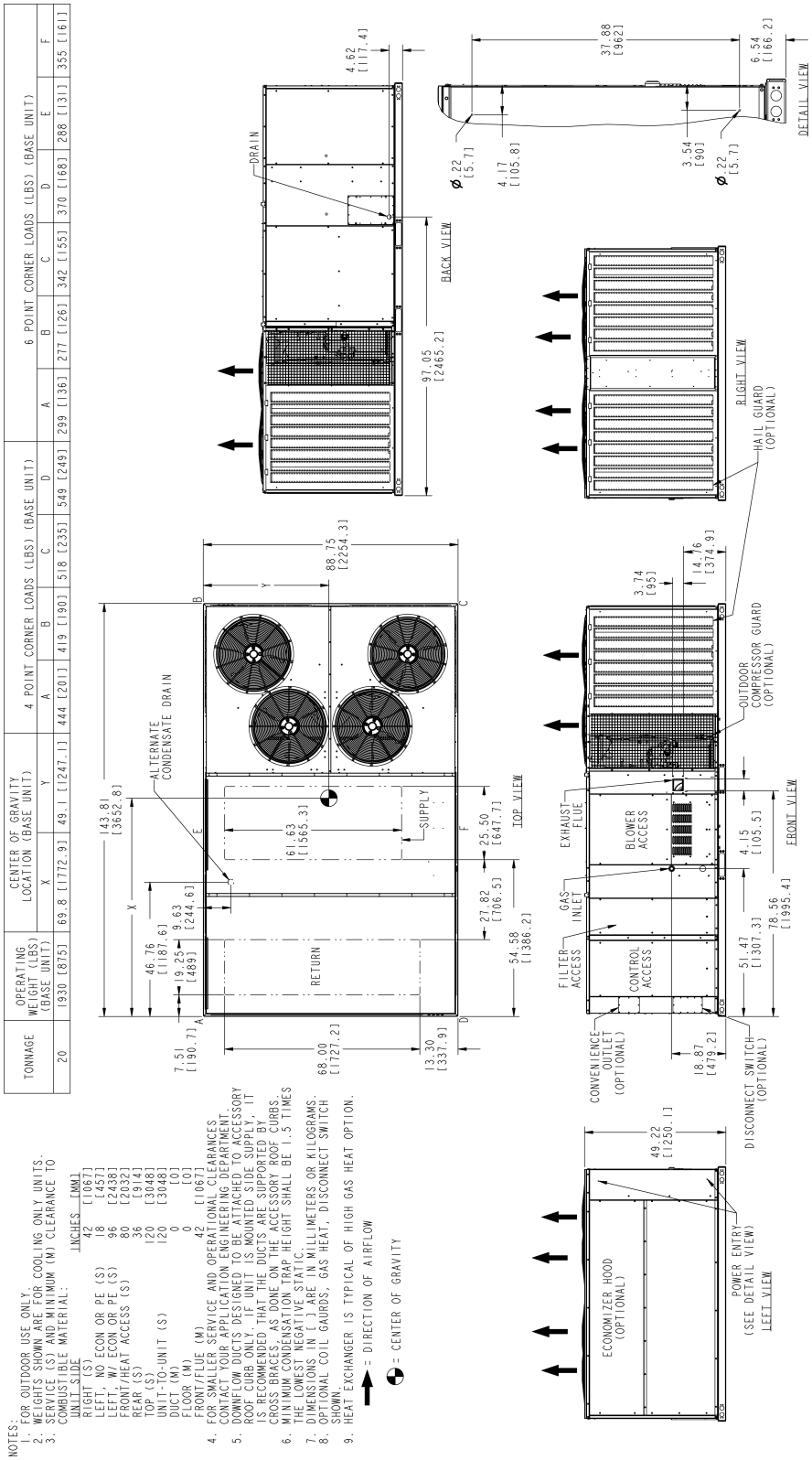


Figure 6: AV25 physical dimensions

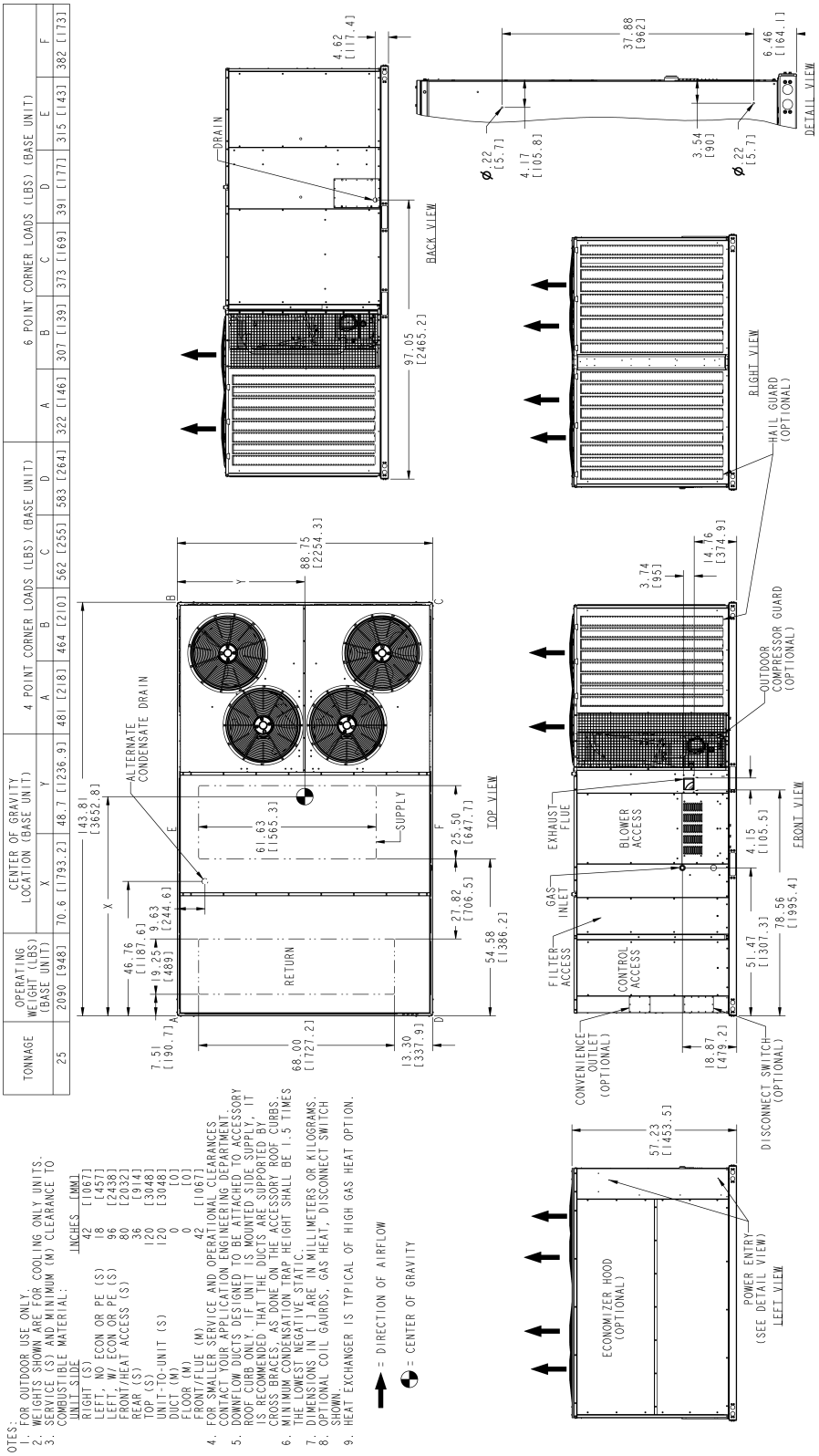
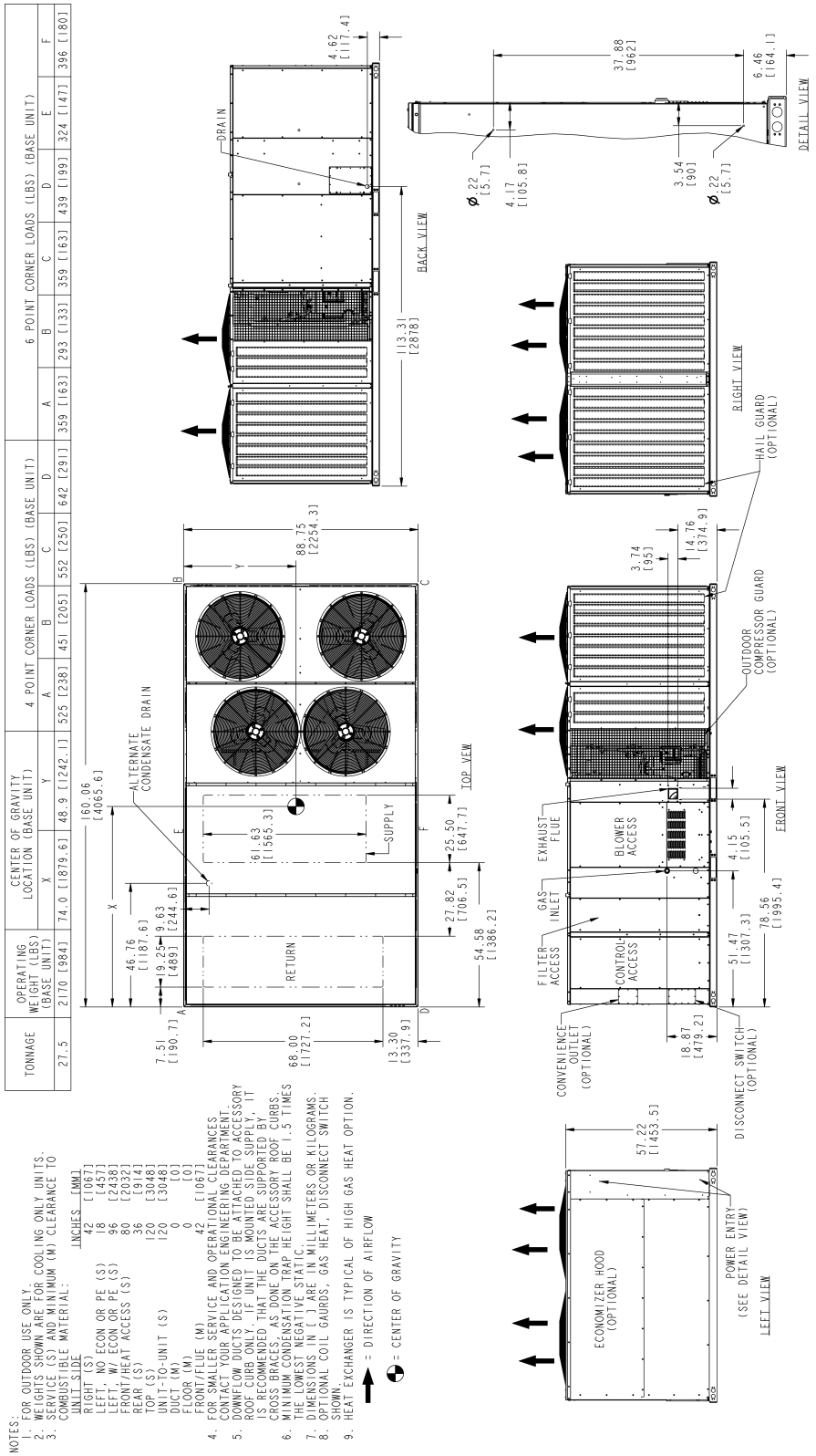
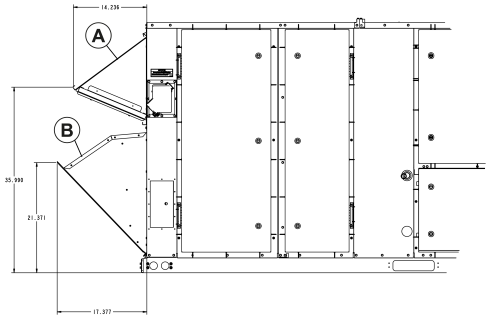


Figure 7: AV28 physical dimensions



Rain hood dimensions

Figure 8: Rain hood dimensions



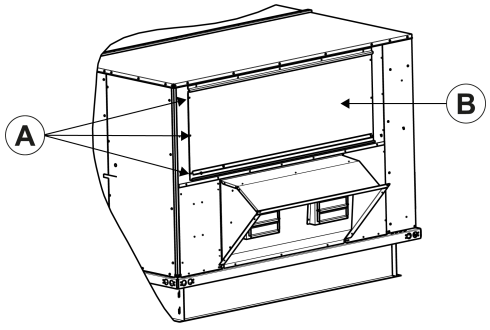
Item	Description
A	Economizer, manual damper, and motorized damper rain hood
B	Power exhaust rain hood

Outdoor Air Hood Assembly

After a unit with an economizer, manual damper, or motorized damper is installed in the field, the outside air hood will need to be assembled. To install the outdoor air hood, complete the following steps.

1. While transporting the unit, the hood top panel is used as a shipping cover attached to the unit exterior as shown in Figure 9.

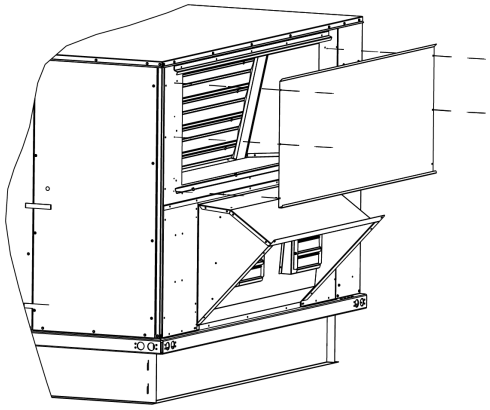
Figure 9: Hood top panel



Item	Description
A	Corner Screws
B	Hood Top Panel

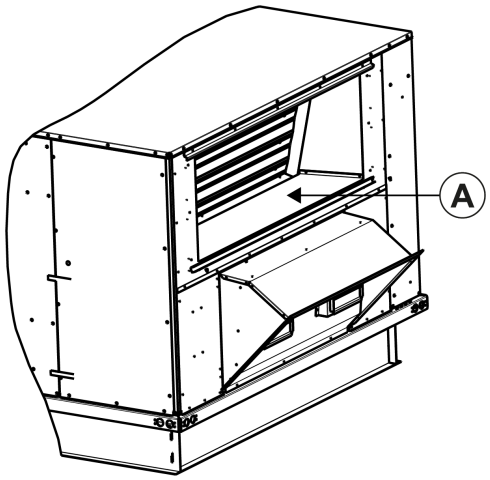
2. Remove the corner screws and the hood top panel as shown in Figure 9 and Figure 10. Keep both the screws and the top panel for use in a later step.

Figure 10: Removing the corner screws



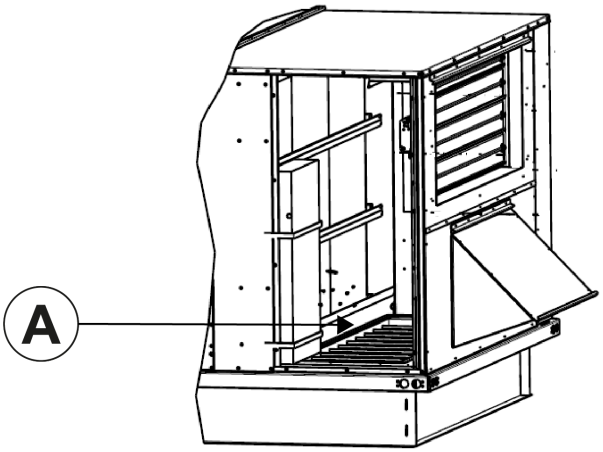
3. For units with an economizer, the additional outside air hood assembly parts are shipped behind the top panel removed in the previous step. This location is shown in Figure 11. For units with a manual or motorized damper, the additional outside air hood assembly parts are shipped in the return air section of the unit as shown in Figure 12.

Figure 11: Economizer hood assembly parts



Item	Description
A	Economizer hood assembly parts shipping location

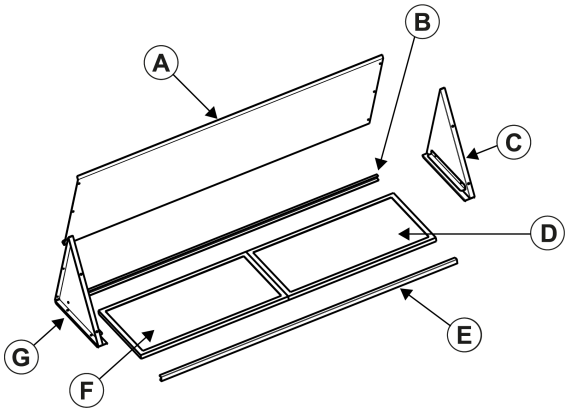
Figure 12: Manual or motorized damper hood assembly parts



Item	Description
A	Manual or motorized damper hood assembly parts shipping location

4. Before beginning assembly, check that you have all of the factory provided parts for the economizer outside air hood as shown in Figure 13.

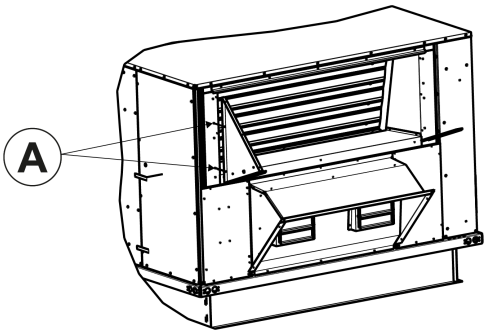
Figure 13: Economizer outside air hood parts



Item	Description
A	Hood Top Panel
B	Filter Channel 1
C	Right side panel sub-assembly
D	Filter 1
E	Filter Channel 2
F	Filter 2
G	Left side panel sub-assembly

5. Using two no. 10 screws from the hardware bag, fasten the left side panel sub-assembly on the unit as shown in Figure 14. Note that the flange should be oriented at the bottom of the side panel and facing the center of the unit.

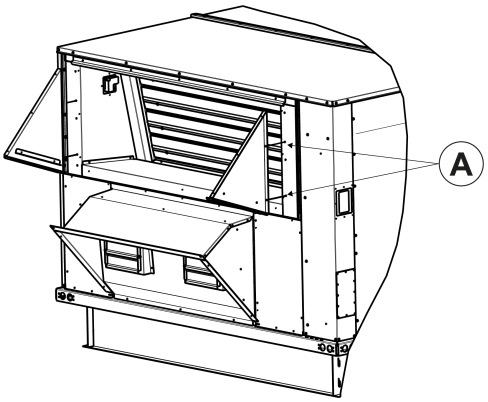
Figure 14: Fastening the left side panel



Item	Description
A	Screws

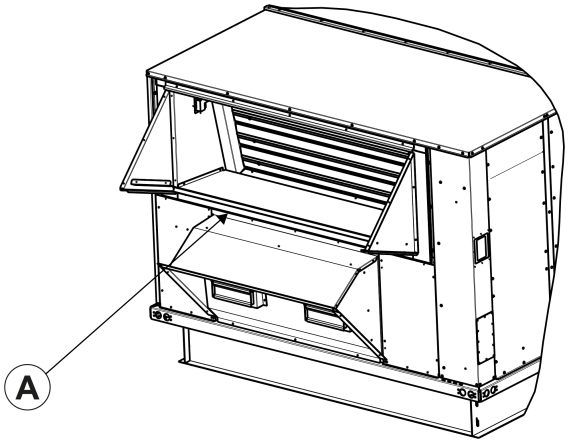
6. Using two no. 10 screws from the hardware bag, fasten the right side panel sub-assembly on the unit as shown in Figure 15. Note that the flange should be oriented at the bottom of the side panel and facing the center of the unit.

Figure 15: Right side panel



7. Prior to inserting the filter channel, ensure the open end of the channel is pointing away from the unit. The filters will be inserted into this opening. Insert filter channel 1 as shown in Figure 16. This should rest on top of the flange of both of the side panels installed in the previous step.

Figure 16: Filter Channel 1



Item	Description
A	Filter Channel 1

8. Insert the first filter into the filter channel to rest with one edge inside of the filter channel and the other on top of the flange of the side panel. See Figure 17.

Figure 17: Filter

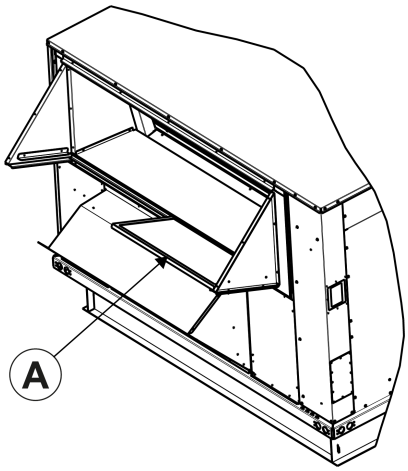
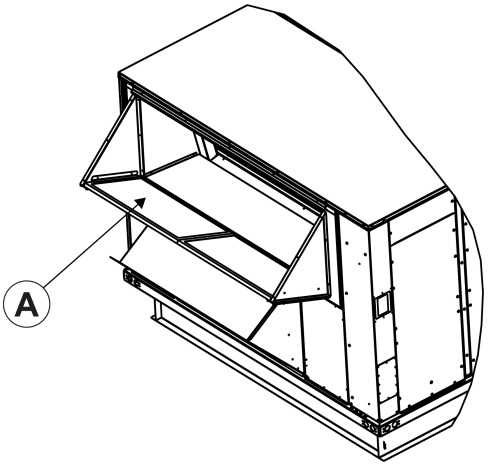


Table 4:

Item	Description
A	Filter

9. Insert the second filter into the filter channel in the same way the first filter was inserted in Step 8, and as shown in Figure 18.

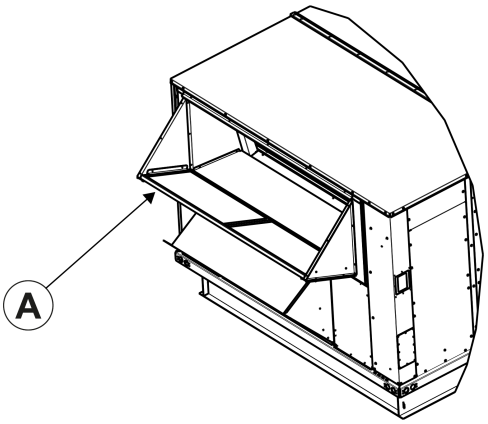
Figure 18: Filter



Item	Description
A	Filter

10. Insert filter channel 2 with the open end of the channel facing toward the unit and going over the end of the filters. See Figure 19.

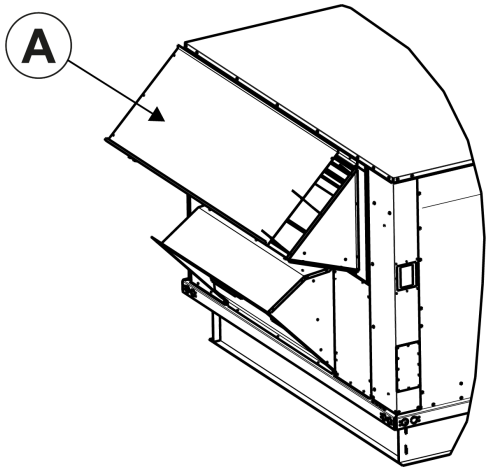
Figure 19: Inserting filter channel 2



Item	Description
A	Filter Channel 2

11. Taking the hood top panel removed in Step 2, hook the angled flange under the top bracket and then set on top of the side panels.. Using the screws removed earlier, attach the top panel to the side panels as shown in Figure 20.

Figure 20: Hood Top Panel



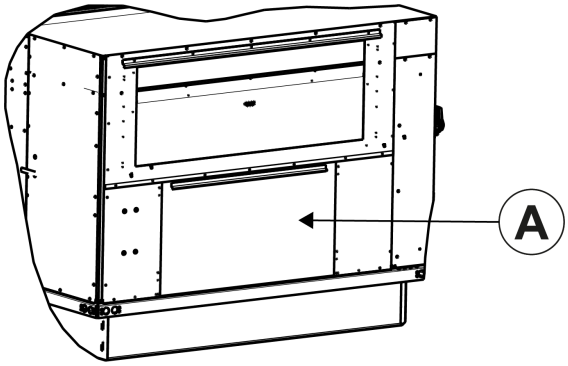
Item	Description
A	Hood Top Panel

Barometric Relief Hood Assembly

After a unit with barometric relief is installed in the field, the barometric relief hood will need to be assembled.
To install the barometric relief hood, complete the following steps.

1. While transporting the unit, the hood top panel is used as a shipping cover attached to the unit exterior as shown in Figure 21.

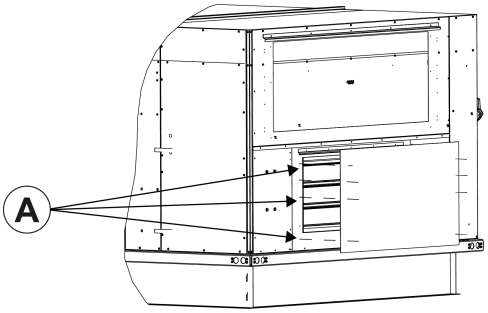
Figure 21: Hood Top Panel



Item	Description
A	Hood Top Panel

2. Remove the corner screws and the hood top panel as shown in Figure 22. Keep both the screws and the top panel for use in a later step.

Figure 22: Removing the corner screws

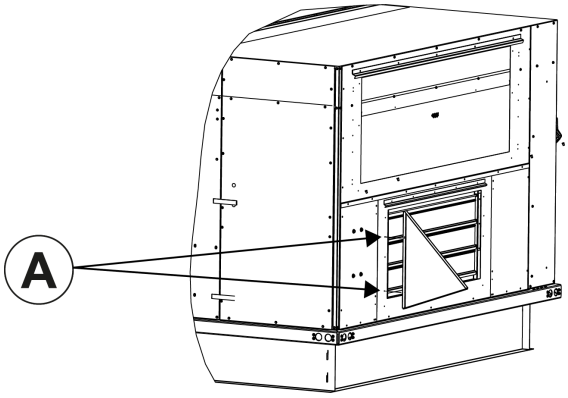


Item	Description
A	Corner Screws

3. Unscrew the two triangular hood sides from inside the barometric relief assembly.

4. Using two of the No. 10 screws removed in step 3, fasten the left side panel sub-assembly on the unit as shown in Figure 23.

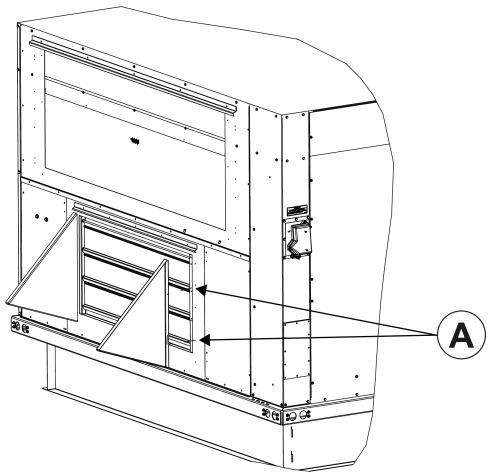
Figure 23: Fastening the left side panel sub-assembly



Item	Description
A	Screws

5. Using two of the No. 10 screws removed in step 3, fasten the right side panel sub-assembly on the unit as shown in Figure 24.

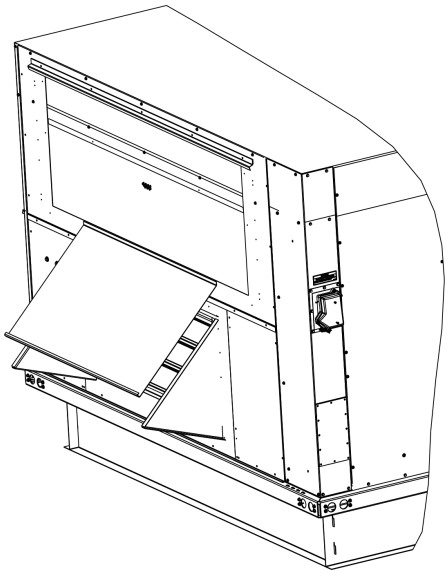
Figure 24: Fastening the right side panel sub-assembly



Item	Description
A	Screws

6. Taking the hood top panel removed in Step 2, hook the angled flange under the top bracket and then set on top of the side panels. Using the screws removed earlier, attach the top panel to the side panels as shown in Figure 25.

Figure 25: Attaching the top panel

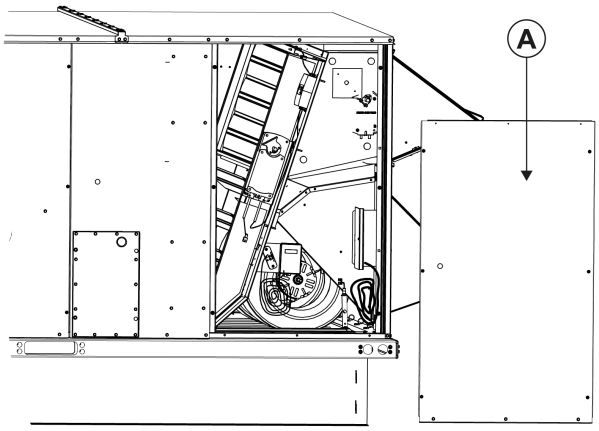


Power Exhaust fold out instructions

After the unit is installed in the field the power exhaust assembly requires field setup for operation. To setup the power exhaust assembly, complete the following steps.

1. Remove the return air access panel shown in Figure 26.

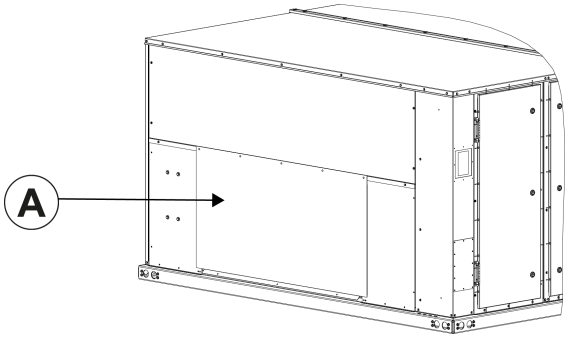
Figure 26: Removing the access panel



Item	Description
A	Return air access panel

2. Locate the power exhaust transit cover on the fresh air side of the unit as shown in Figure 27.

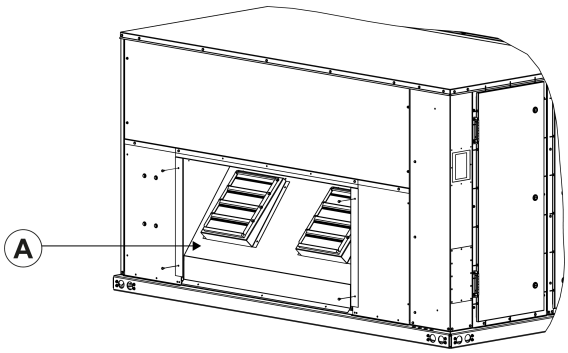
Figure 27: Cover



Item	Description
A	Cover

3. Remove the power exhaust transit cover by removing the screws at the top and bottom of the transit cover. Keep the screws for use in securing the power exhaust in a later step, the transit cover can be discarded.

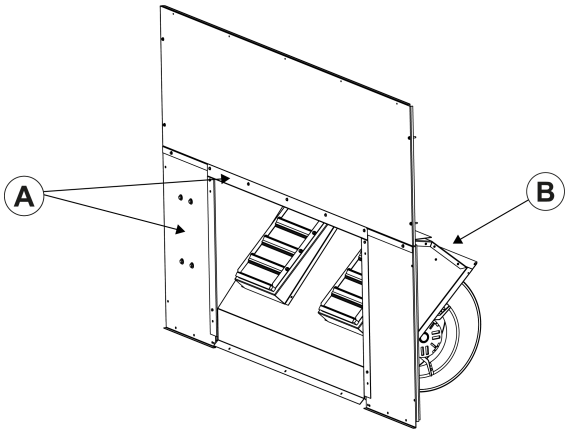
Figure 28: Removing the power exhaust transit cover



Item	Description
A	Power Exhaust Assembly

4. Before folding out the power exhaust assembly, ensure the wiring to the power exhaust motor is loose and not caught on internal components in the fresh air section of the unit. Visually locate the rear flange on the exhaust assembly shown in Figure 29, the mounting holes will need to be aligned with the through holes in the cabinet in the next steps.

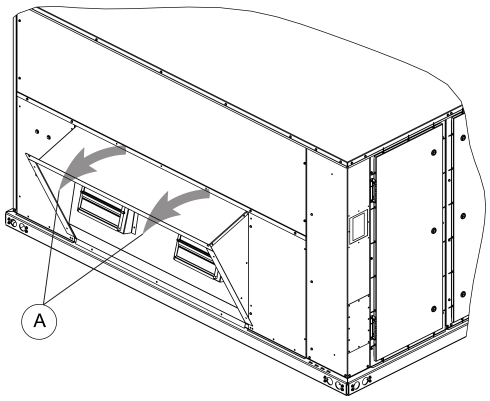
Figure 29: Rear flange location



Item	Description
A	Cabinet Parts
B	Rear Flange

5. From the outside of the unit, grabbing the top flange of the power exhaust assembly, pull the exhaust assembly away from the unit as shown in Figure 30. The assembly will rotate out and down using the base of the assembly as the pivot point.

Figure 30: Exhaust Assembly

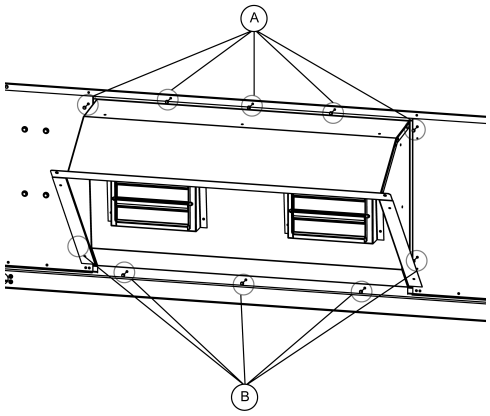


Item	Description
A	Pull-out direction

6. While keeping the power exhaust assembly pivoted in its operational position, match the holes on the rear flange of the power exhaust assembly that was located in Step 4 to the holes on the corresponding cabinet parts.

7. Use the screws removed in Step 3 to attach the cabinet frame to the power exhaust assembly in the locations shown in Figure 31.

Figure 31: Flange screw locations



Item	Description
A	Top flange scew locations
B	Bottom flange scew locations

8. Use caulk, gasket, or other sealing means to ensure a watertight seal around the power exhaust assembly.

9. For a constant volume power exhaust, replace the return air access panel removed in Step 1. The setup is now complete. For a modulating power exhaust, continue to the next section for setting the location of the building pressure sensor.

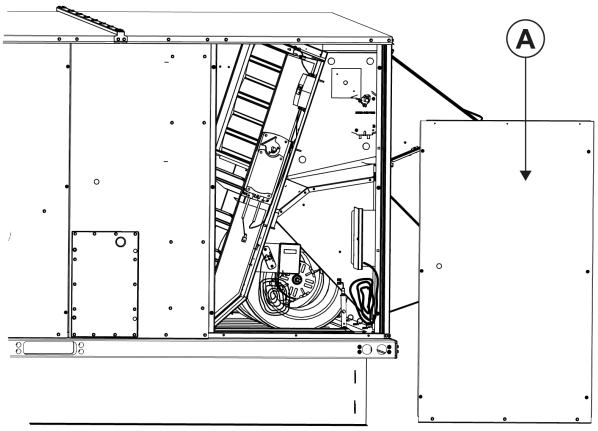
Relocation of RA pressure sensor

Field locating of building pressure sensor for modulating power exhaust

Complete these additional steps after completing the previous steps for field setup of a factory installed modulating power exhaust.

1. If not already removed, remove the return air access panel shown in Figure 32.

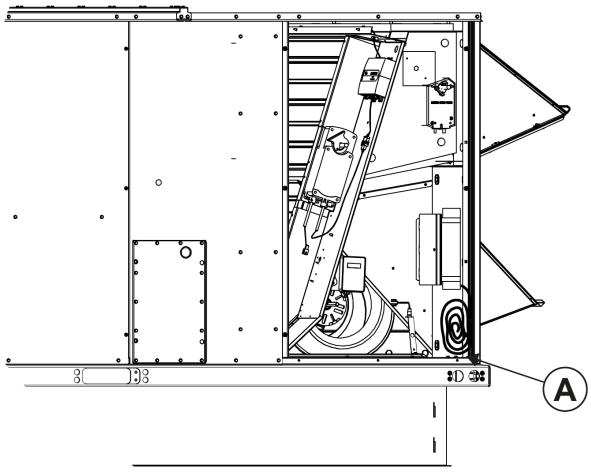
Figure 32: Removing the access panel



Item	Description
A	Return air access panel

2. The building pressure sensor and tubing are bundled from the factory and kept below the power exhaust control box as shown in Figure 33.

Figure 33: Building pressure sensor and tubing



Item	Description
A	RA Pressure sensor tube bundled

3. Cut the wire ties holding the tubing in place for shipping.

4. Lower the end of the tubing with the pressure sensor down into the return ductwork. Note that the provided sensor will negate the effects of return dynamic pressure to give a representative building pressure. If a different location for obtaining building pressure is desired, the tubing can be routed accordingly.

5. Use field-supplied gasket or other protective measures to keep the tube from rubbing on any sharp edges that could cut the tube over time.

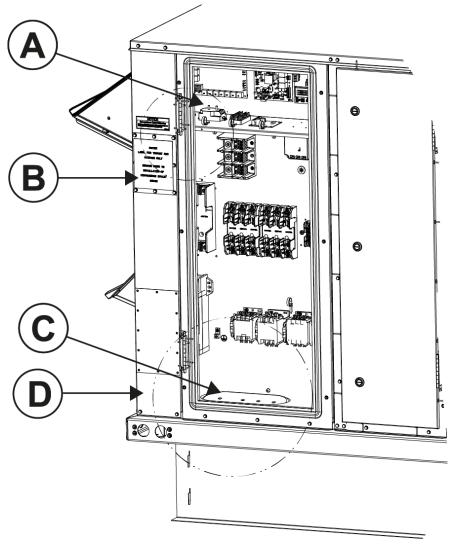
6. Replace the return air compartment access panel.

Pressure line connections for VAV

For VAV unit operation, field setup of the pressure lines is required to obtain readings of the supply duct pressure and building space pressure. Follow the instructions below to complete this setup.

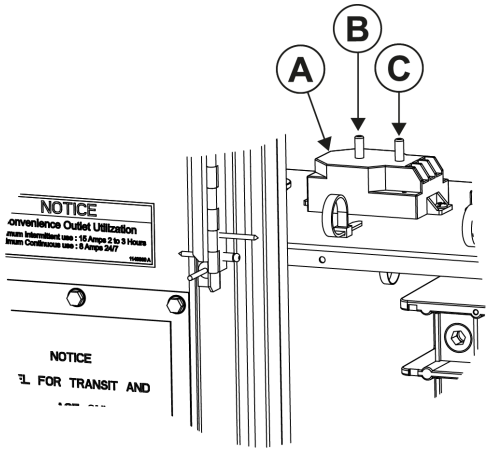
1. Open the control panel access door. The duct pressure sensor (DPS) will be located on the shelf as shown in Figure 34 and Figure 35.

Figure 34: Control Panel



Item	Description
A	Duct Pressure Sensor
B	See Figure 35
C	Dimple Embossment
D	See Figure 36

Figure 35: Duct Pressure Sensor detail

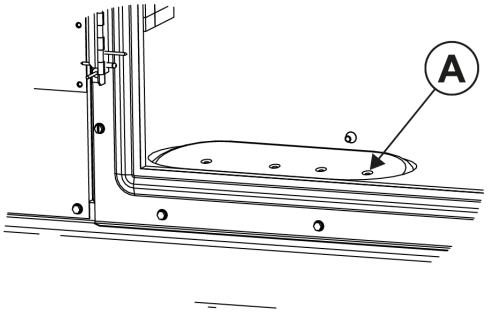


Item	Description
A	DPS
B	High Port
C	Low Port

2. For best results, use a pressure-transmitting tubing with 3/16 in. I.D. for tubing lengths of up to 100 feet, ¼ in. I.D. for tubing lengths up to 300 feet, and 3/8 in. I.D. for tubing lengths up to 900 feet.

3. Drill a hole in the dimpled embossment in the bottom of the control box shown in Figure 34 and Figure 36. Drill the hole in a size that will fit both the building pressure and supply-air pressure tubes. Use protective measures to ensure that the tubing will not develop a cut from contact with any sharp edges.

Figure 36: Dimple Embossment detail

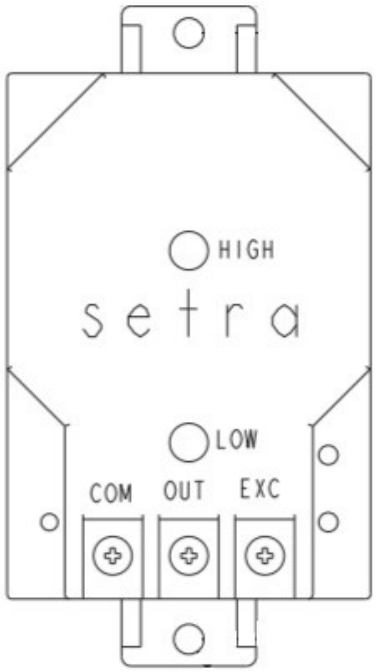


Item	Description
A	Deill holes here Pressure tubes

4. Determine the length of tubing required to run from the DPS (identified in Step 1), down through the hole drilled in the embossment in the bottom of the control box, and to the desired location for obtaining the building pressure.

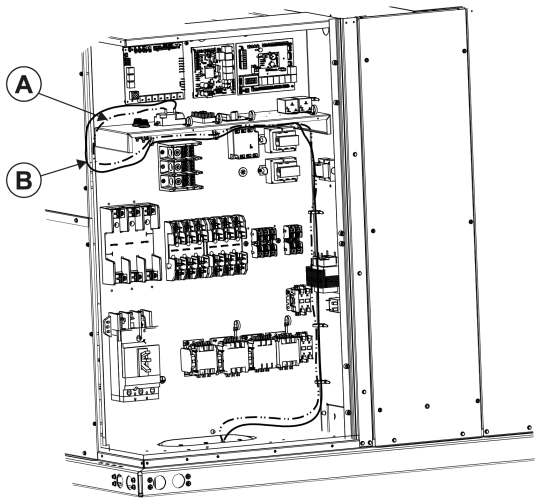
5. Connect the field-supplied tubing to the Low pressure port of the DPS. The Low and High ports can be identified by the sticker and embossment on the sensor and are shown in Figure 35 and Figure 37.

Figure 37: DPS Port Locations



6. Route the tubing through the control box and down through the hole drilled in the control box base embossment, as shown in Figure 38 .

Figure 38: Routing the tubing



Item	Description
A	High tube
B	Low tube

7. After exiting the unit base, route the tubing to the desired location for obtaining a constant building pressure reading.

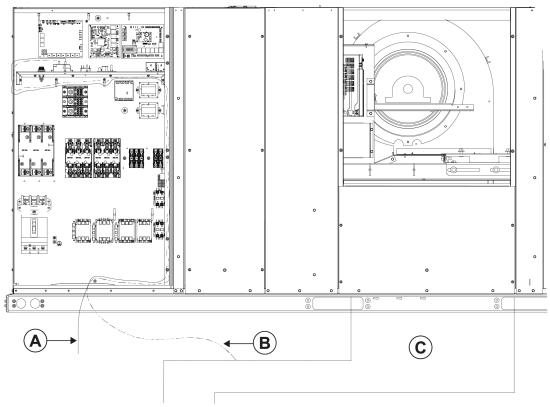
8. Determine the length of tubing required to run from the DPS (identified in Step 1), down through the hole drilled in the embossment in the bottom of the control box, and to the desired location for obtaining the supply-air duct pressure.

9. Connect the field-supplied tubing to the High pressure port of the DPS. The Low and High ports can be identified by the sticker and embossment on the sensor and are shown in Figure 36 and Figure 37.

10. Following the same path as the building pressure tubing in Step 6, route the tubing through the control box and down through the hole drilled in the control box base embossment, as shown in Figure 38. Route both tubes along the cable straps and use wire ties to secure the tubes to the cable straps.

11. After exiting the unit base, route the tubing to a field-supplied static pressure tap in the supply duct located at a point where constant pressure is expected. An example of the full tubing routing can be seen in Figure 39.

Figure 39: Routing the tubing



Item	Description
A	Low building pressure
B	High SA duct pressure
C	Supply air duct

12. To prevent an unstable signal due to air turbulence, there should be no obstructions, turns, or VAV terminal boxes up- or down-stream of the sensing tube location for at least a distance of 6 to 10 times the duct diameter.

Utilities entry

Table 5: Utilities entry

Entry description		Opening size diameter (in.)
Control wiring	Left	Field drilled[1] to maximum of 7/8 in.
	Bottom	Field drilled[1] to maximum of 7/8 in.
Power wiring	Left	Field drilled[1] to maximum of 3 in.
	Bottom	Field drilled[1] to maximum of 3 in.
Gas piping	Left[2, 3]	2-in. hole with ¾-in. grommet
	Bottom[2]	1-1/4 in. hole
Condensate drain	Front[4]	1-1/2-in. hole
	Bottom[3, 4]	2-in. hole with 1-1/4-in. grommet

1 Factory provided dimples show the hole location to facilitate the drilling of entry holes.
2 3/4 in. NPT gas piping is required.
3 You must insert the piping through the factory-installed grommet for a watertight seal.
4 1 in. NPT female connection piping is required.

ⓘ **Note:** You must field seal all entry holes to prevent rain water entry into the building.

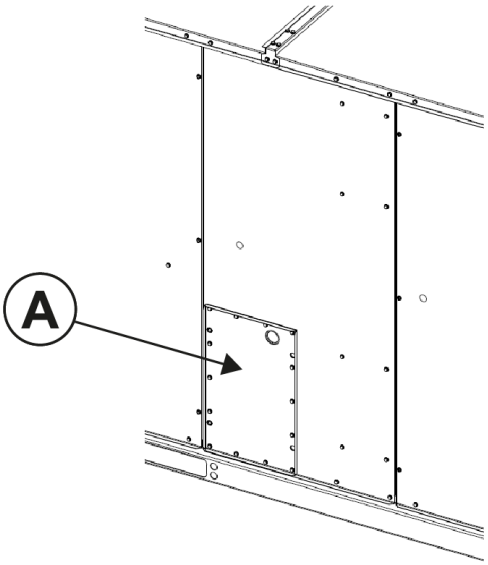
Condensate Drain Line installation

After a unit is installed in the field, the condensate drain line will need to be connected to the field supplied drain line. The orientation of the condensate drain connection is adjustable. The drain connection leaves the factory oriented to the rear of the cabinet for a through the side connection. The drain connection can be reoriented downward through the base pan for piping inside the roof curb. Separate instructions are included below for each orientation.

Through the side condensate drain:

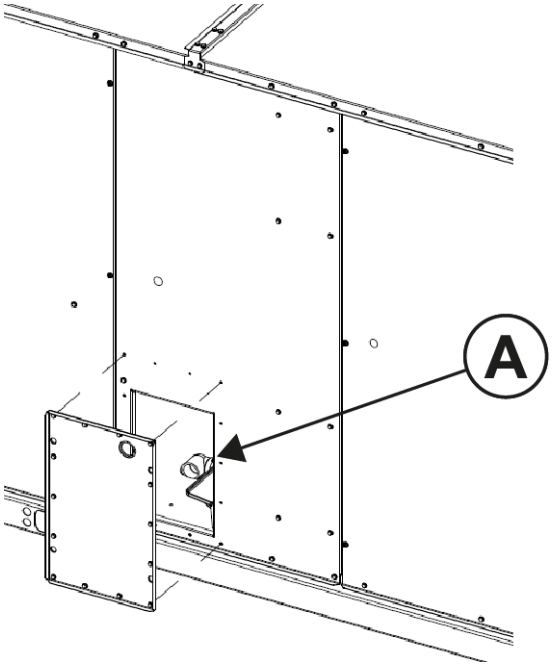
1. Remove the condensate drain line access patch plate shown in Figure 40 and Figure 41. Keep the screws for use in a later step.

Figure 40: Access Patch Plate



Item	Description
A	Access patch plate

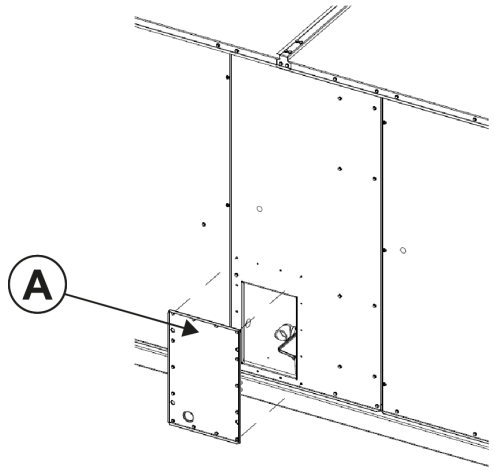
Figure 41: Patch Plate Removal



Item	Description
A	Threaded elbow

2. Rotate the patch plate 180° clockwise from its original orientation so that the drain line hole is in bottom left corner as shown in Figure 42.

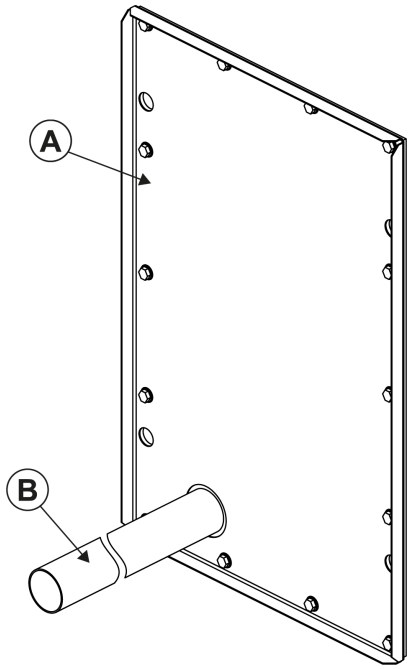
Figure 42: Access patch plate rotated orientation



Item	Description
A	Access patch plate rotated orientation

3. Pass the field-supplied condensate drain line through hole in the patch plate while it is detached from the unit. See Figure 43.

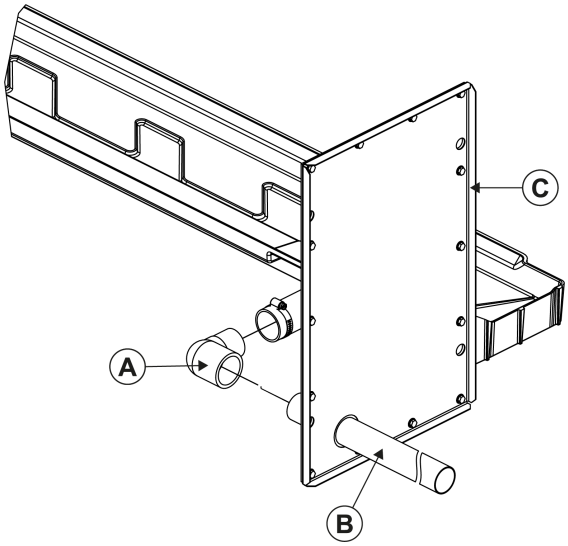
Figure 43: Detached Patch Plate



Item	Description
A	Access patch plate
B	Condensate drain line

4. Connect the drain line to the 1 inch NPT female connection on the elbow located inside of the unit. Ensure a proper seal is achieved between the drain line and the elbow. A diagram of the proper component orientation can be seen in Figure 44 .

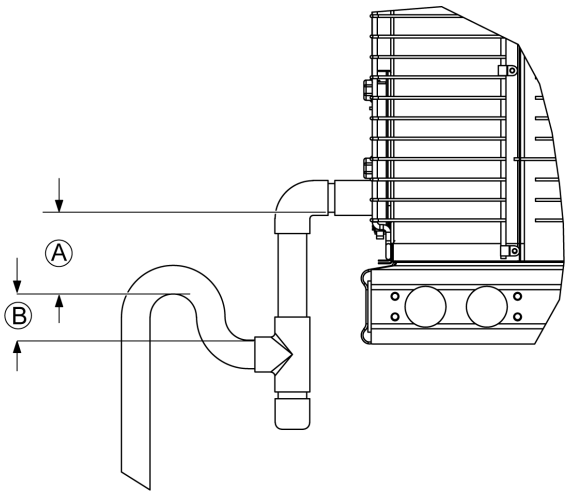
Figure 44: Proper component orientation



Item	Description
A	Threaded elbow
B	Drain line
C	Patch plate

5. Trap the condensate drain line per Figure 45. The trap and drain lines should be protected from freezing and the plumbing must conform to local codes. Use a sealing compound on male pipe threads.

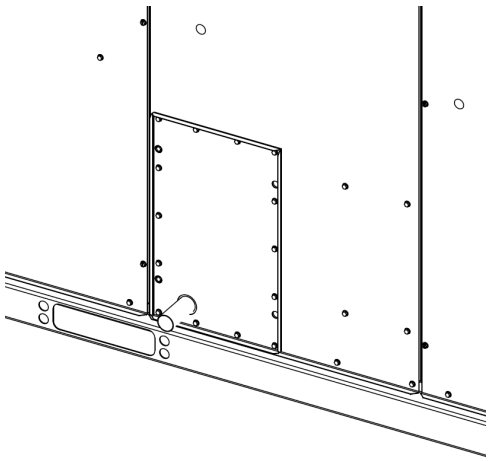
Figure 45: Trap and drain lines



Item	Description
A	3 in. minimum
B	2 in.

6. Using the screws that were removed in Step 1, attach the patch plate to the unit as shown in Figure 46. This will be in the same position the patch plate was rotated to in Step 2.

Figure 46: Attaching the patch plate



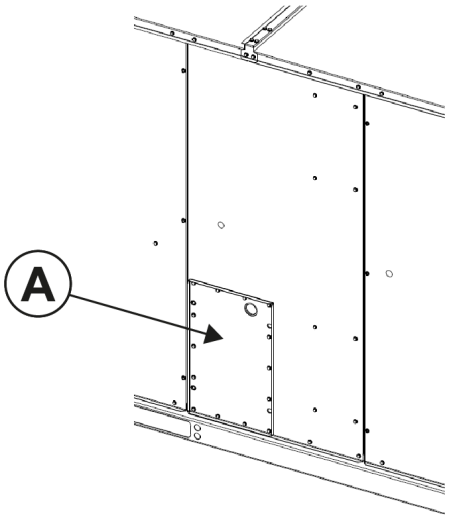
7. Use caulk, gasket, and/or other means to create a water-tight seal around the drain line where it passes through the patch plate to ensure no water enters the unit.

8. Ensure the drain line is installed horizontally level for proper drainage. If the drain line is allowed to sag outside of the unit then it will cause the elbow/tube assembly inside to lift upward and not allow proper drainage.

Through the base condensate drain:

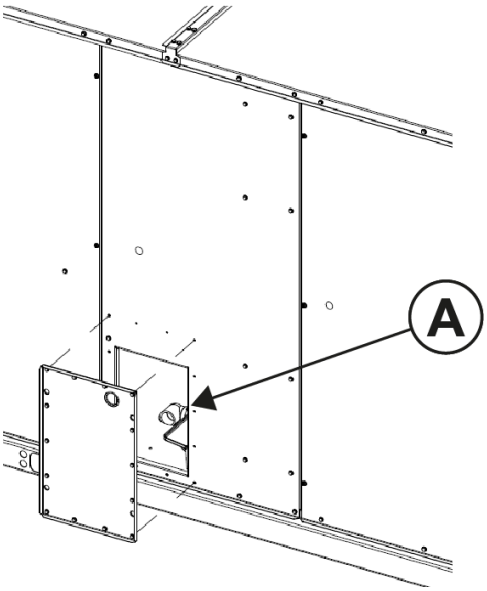
1. Remove the condensate drain line access patch plate shown in Figure 47 and Figure 48. Keep the screws for use in a later step.

Figure 47: Access patch plate



Item	Description
A	Access patch plate

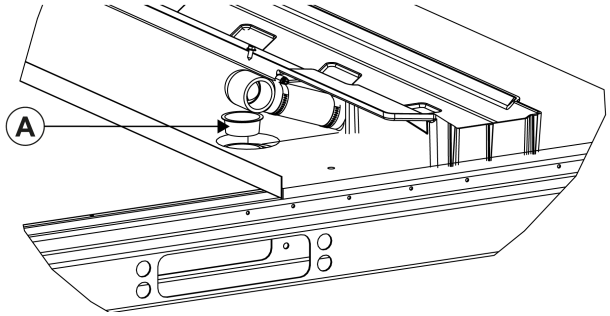
Figure 48: Access patch plate



Item	Description
A	Access patch plate rotated orientation

2. Remove the plug from the grommet under the threaded elbow shown in Figure 48 and Figure 49.

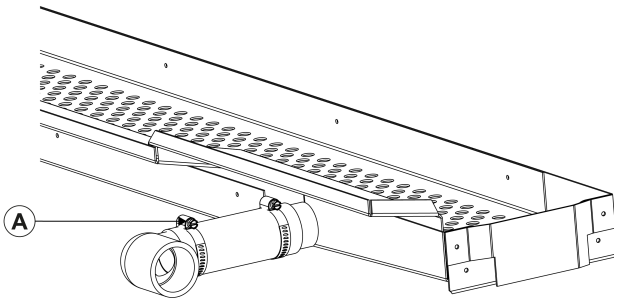
Figure 49: Removing the plug



Item	Description
A	Plug

3. Loosen the hose clamp holding the elbow to the hose. See Figure 50.

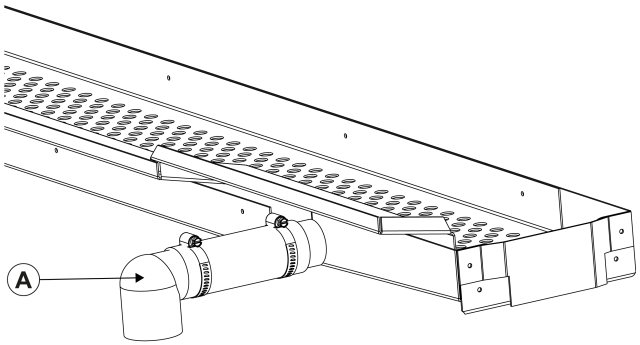
Figure 50: Loosening the hose clamp



Item	Description
A	Clamp

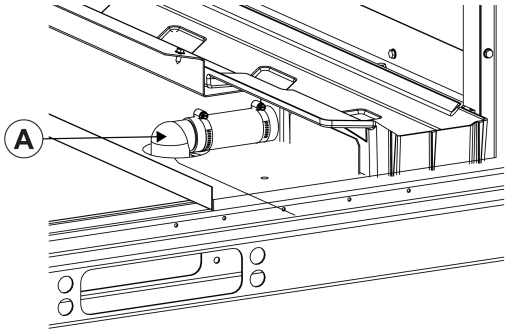
4. Rotate the elbow 90° so that the elbow points downward as shown in Figure 51. Push the elbow into the grommet as shown in Figure 52. Ensure that the hose from the drain pan to the elbow is horizontally level for proper drainage.

Figure 51: Rotating the elbow



Item	Description
A	Elbow rotated by 90°

Figure 52: Inserting the elbow

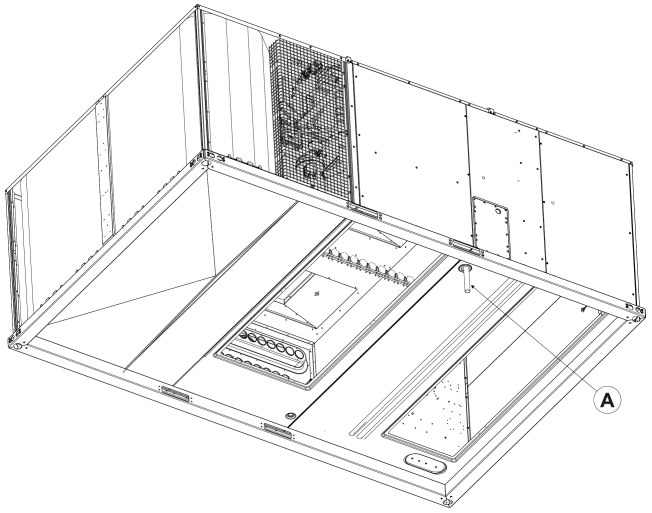


Item	Description
A	Elbow inserted into grommet

5. Tighten the hose clamp that was loosened in Step 3 to a maximum torque of 15 in-lbs.

6. From below the unit, connect the field supplied drain line to the 1 inch NPT female connection on the elbow that is now sticking out of the grommet in the unit base pan. Ensure a proper seal is achieved between the drain line and the elbow. The through the base connection location can be seen in Figure 53.

Figure 53: Connecting the drain line

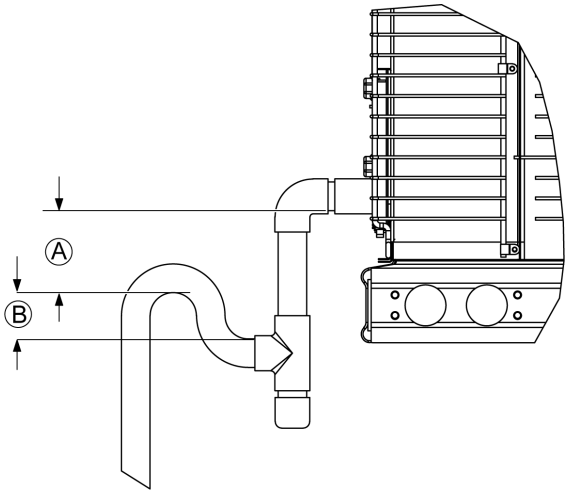


Item	Description
A	Field supplied pipe

7. Route the field supplied drain line to the building exterior.

8. Trap the condensate drain line per Figure 54. The trap and drain lines should be protected from freezing and the plumbing must conform to local codes. Use a sealing compound on male pipe threads.

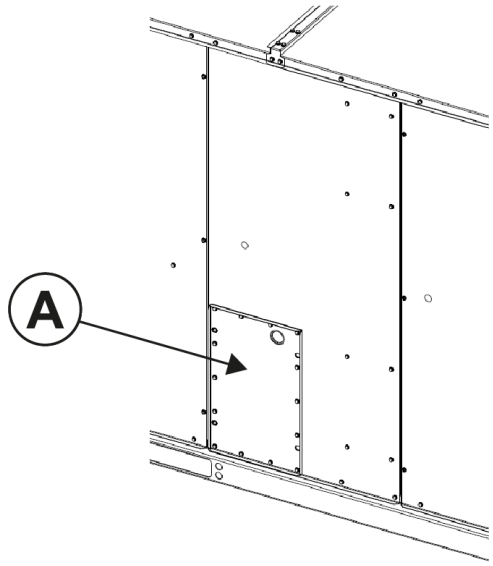
Figure 54: Trap and drain lines



Item	Description
A	3 in. minimum
B	2 in.

9. Using the screws that were removed in step 1, replace the patch plate in its original orientation as shown in Figure 55.

Figure 55: Access patch plate



Item	Description
A	Access patch plate

Accessory weights

Table 6: Unit accessory weights

Unit accessory	Unit size			
	15 to 17.5 ton	20 ton	25 ton	27.5 ton
Economizer	145	145	165	165
Motorized damper	65	65	75	75
Power exhaust	75	75	75	75
Barometric damper	50	50	50	50
Electric heat (75 kW)	75	75	75	75
Gas heat (largest)	155	155	155	155
Hail guards	75	80	100	125
Wood skid and shipping brackets	60	70	70	80
Roof curb	215	230	230	250

Table 7: Supply fan VFD weights

Supply fan motor	208/230V	460V	575V
2.9 HP	10	10	10
3.7 HP	10	10	10
5.3 HP	10	10	10
7.5 HP	15	15	15
10 HP	20	15	15
12 HP	20	15	15

ⓘ **Note:** Add 5 lbs. to the supply fan VFD weights if there is a bypass.

Roof curbs

The following figures show the roof curbs for the units. All dimensions are in inches.

Return air

Supply air

Figure 56: 1RC0443 and 1RC0446 roof curb dimensions

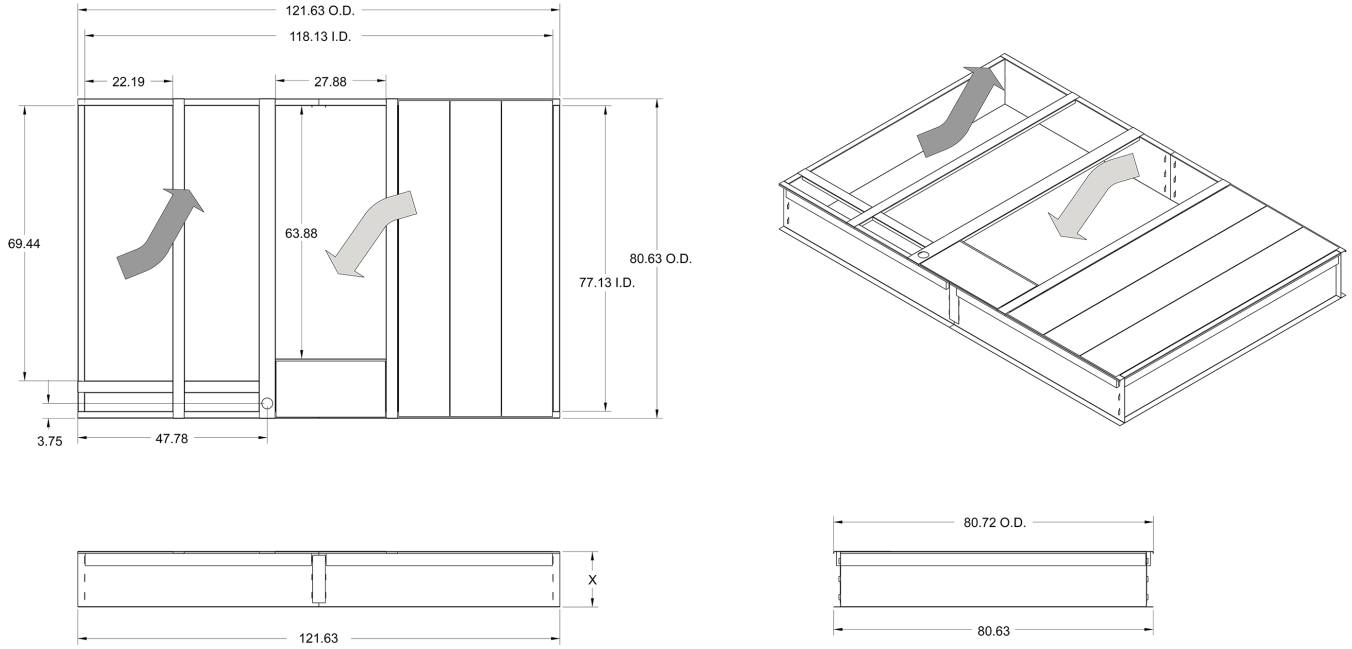


Table 8: 1RC0443 and 1RC0446 dimensions

Roof curb	X measurement (in.)
1RC0443	14
1RC0446	24

The following units are compatible with 1RC0443 and 1RC0446 roof curbs.

- AV15
- AV18

Figure 57: 1RC0444 and 1RC0447 roof curb dimensions

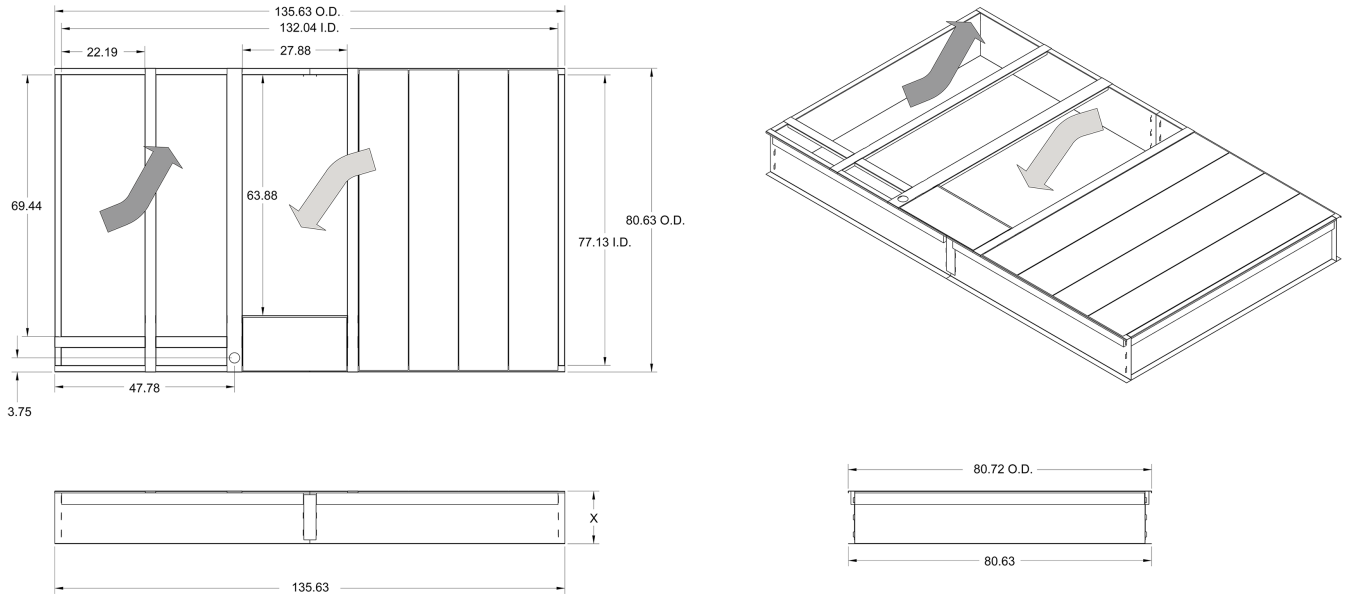


Table 9: 1RC0444 and 1RC0447 dimensions

Roof curb	X measurement (in.)
1RC0444	14
1RC0447	24

The following units are compatible with 1RC0444 and 1RC0447 roof curbs.

- AV20
- AV25

Figure 58: 1RC0445 and 1RC0448 roof curb dimensions

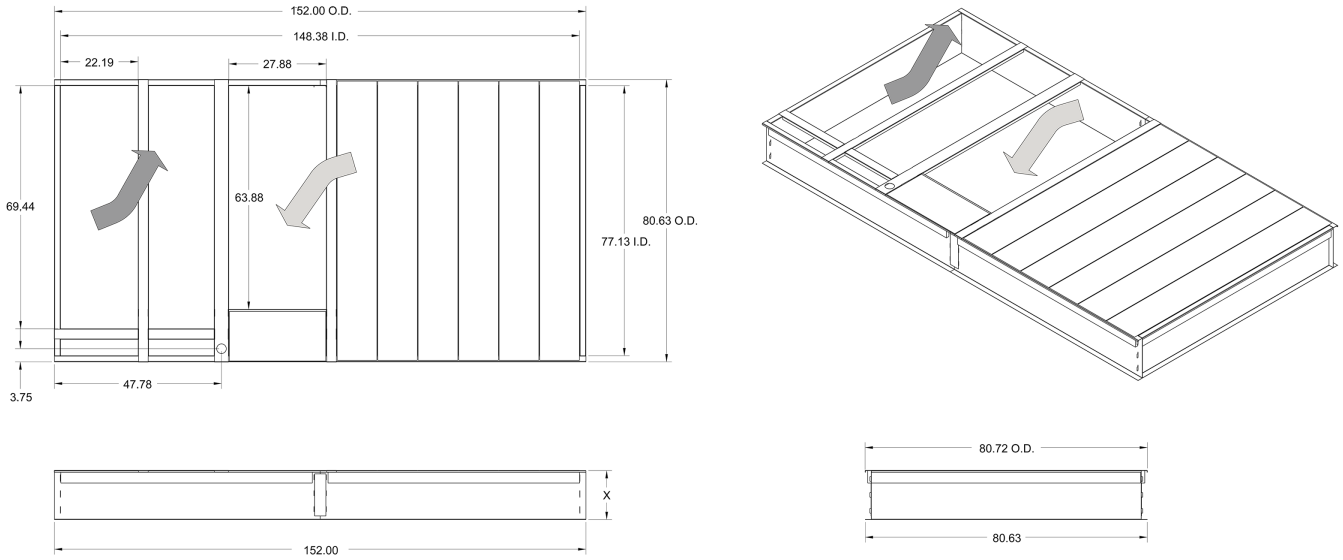


Table 10: 1RC0445 and 1RC0448 dimensions

Roof curb	X measurement (in.)
1RC0445	14
1RC0448	24

The following unit is compatible with 1RC0445 and 1RC0448 roof curbs.

- AV28

Figure 59: Roof curb cutaway

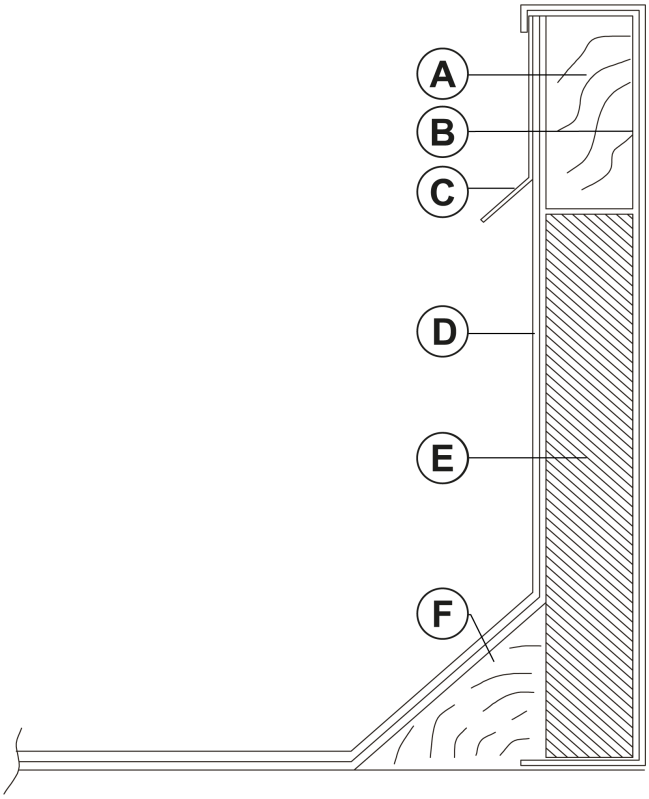


Table 11: Roof curb cutaway components

Item	Description	Item	Description
A	Wood nailer	D	Roof felt (field supplied)
B	Curb frame	E	Rigid insulation (field supplied)
C	Counter flashing (field supplied)	F	Cant strip (field supplied)

Ductwork

You must design and size ductwork according to the methods in Manual D of the Air Conditioning Contractors of America (ACCA) or as recommended by any other recognized authority such as ASHRAE or SMACNA. When you design the duct system, apply the following recommendations.

- Use a closed return duct system. This does not preclude the use of economizers or outdoor fresh air intake.
- Make the supply and return air duct connections at the unit with flexible joints to minimize noise.
- Design the supply and return air duct systems for the CFM and static pressure requirements of the job. Do not size them to match the dimensions of the duct connections on the unit.

See the Duct openings section for information on side and bottom air duct openings.

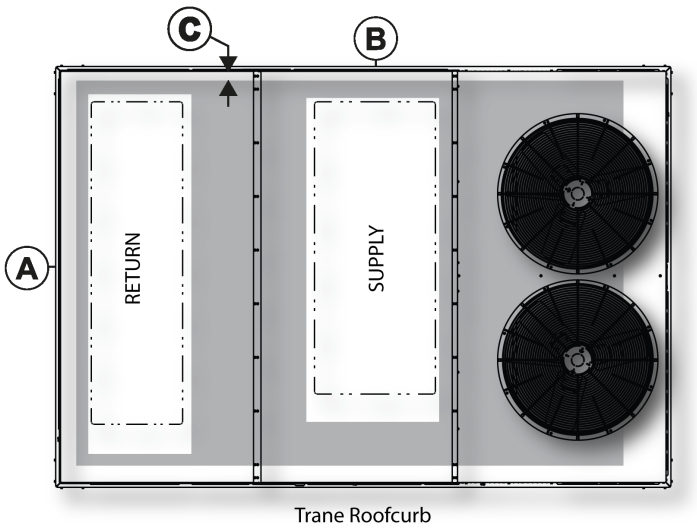
ⓘ **Note:** In Canada, it is recommended that the outlet duct be provided with a removable access panel. It is recommended that this opening is accessible when the unit is installed in service, and of a size such that smoke or reflected light may be observed inside the casing to indicate the presence of leaks in the heat exchanger. You must attach the cover in a manner adequate to prevent leakage.

Placing the equipment over a Trane Curb

When using this product to directly replace select Trane branded equipment without a transition curb, the placement of the unit on the existing Trane roof curb is required to follow these placement guidelines. The unit will be slightly longer and wider than the existing roof curb with the actual dimensional difference varying depending on tonnage. When positioning the unit on the roof curb the extra length and width will be left to overhang on the unit's right side (condenser end) and front (side with control access).
To properly align the supply and return air openings with the roof curb, complete the following step.

1. Leave a ½ in. gap between the unit baserail and the roof curb on both the left side (fresh air side) and back of the unit. See Figure 60

Figure 60: Roof Curb Positioning



Item	Description
A	Left of Unit
B	Back of Unit
C	½ in. Gap

Compressors

The scroll compressor used in this product is specifically designed to operate with R-410A refrigerant and cannot be interchanged.

⚠ CAUTION

This system uses R-410A refrigerant that operates at higher pressures than R-22. No other refrigerant may be used in this system.

The compressor also uses a polyolester (POE oil), Mobil 3MA POE. This oil is extremely hygroscopic, meaning it absorbs water readily. POE oil can absorb 15 times as much water as other oils designed for HCFC and CFC refrigerants. Take all the necessary precautions to avoid exposure of the oil to the atmosphere.

⚠ CAUTION

Do not leave the system open to the atmosphere. Unit damage could occur due to moisture being absorbed by the POE oil in the system. This type of oil is highly susceptible to moisture absorption

POE compressor lubricants are known to cause long term damage to some synthetic roofing materials.

CAUTION

Exposure, even if immediately cleaned up, may cause embrittlement (leading to cracking) to occur in one year or more. When you perform any service that may risk exposure of compressor oil to the roof, take precautions to protect the roofing.

Procedures that risk oil leakage include, but are not limited to the following:

- Compressor replacement
- Repairing refrigerant leaks
- Replacing refrigerant components such as the filter drier, pressure switch, metering device or coil

Units are shipped with compressor mountings that are factory-adjusted and ready for operation.

CAUTION

Do not loosen compressor mounting bolts.

Filters

Units are provided with the selected 2-inch or 4-inch filter and can easily be converted in the field to accept either size in the standard filter rack.

Always install filters ahead of evaporator coil. Keep the filters clean and replace them with filters of the same size and type. Dirty filters reduce the capacity of the unit and result in frosted coils or safety shutdown. See the physical data table for the number and size of filters needed for the unit.

Do not operate the unit without filters properly installed.

CAUTION

Make sure that panel latches are properly positioned on the unit to maintain an airtight seal.

Dirty filter switch pressure setting

If a factory installed dirty filter switch is present, the pressure setting of the switch can be changed via the adjustment screw that's accessible the the metal cover removed. A setting of 0.5 in. WC will serve as a general starting point but will likely need to be adjusted for the specific application to detect the increased pressure drop associated with a dirty filter.

Power and control wiring

Field wiring to the unit, fuses, and disconnects must conform to provisions of National Electrical Code (NEC), ANSI/NFPA No. 70 – Latest Edition (in U.S.A.), current Canadian Electrical Code C221, and/or local ordinances. The unit must be electrically grounded in accordance with NEC and CEC as specified above and/or local codes.

Voltage tolerances must be maintained at the compressor terminals during starting and running conditions. The voltage tolerances are indicated on the unit rating plate and in the unit limitations table.

CAUTION

208/230-3-60 units control transformers are factory wired for 230v power supply. Change the tap on the transformer for 208-3-60 operation. See the unit wiring diagram.

The internal wiring harnesses furnished with this unit are an integral part of the design certified unit. Field alteration to comply with electrical codes is not required.

If any of the wire supplied with the unit must be replaced, replacement wire must be of the type shown on the wiring diagram and the same minimum gauge as the replaced wire.

A disconnect should be used with these units. Factory and field installed disconnects are available.

CAUTION

Avoid damage to internal components if you drill holes to install a disconnect.

Note: Not all local codes allow the installation of a disconnect on the unit. Confirm compliance with local code before you install a disconnect on the unit.

Electrical line must be sized properly to carry the load.

Note: Use copper conductors only.

Each unit must be wired with a separate branch circuit fed directly from the meter panel and properly fused.

See the following figures for typical field wiring. Refer to the appropriate unit wiring diagram mounted inside the control doors for control circuit and power wiring information.

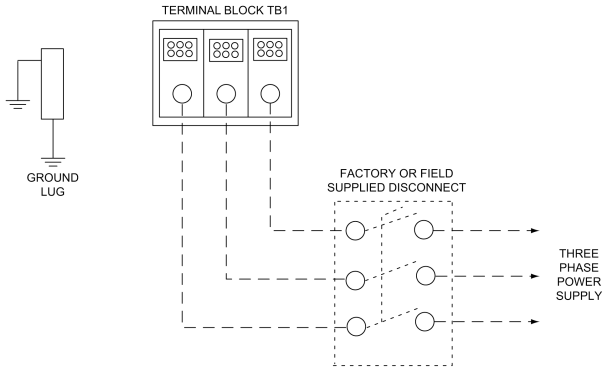
CAUTION

When you connect electrical power and control wiring to the unit, you must use water-proof connectors so that water or moisture cannot be drawn into the unit during normal operation. These water-proofing conditions also apply when you install a field-supplied disconnect switch.

Power wiring detail

Units are factory wired for the voltage shown on the unit nameplate. See the electrical data tables to size power wiring, fuses, and the disconnect switch. Power wiring is brought into the unit through the side of the unit or the basepan inside the curb.

Figure 61: Field wiring disconnect



Thermostat wiring

Install the thermostat on an inside wall approximately 56 inches above the floor. The thermostat must not be subject to drafts, sun exposure, or heat from electrical fixtures or appliances.

Follow the manufacturer's instructions enclosed with thermostat for the general installation procedure. Use color-coded, insulated wires to connect the thermostat to the unit. See the following table for control wire sizing and maximum length.

Table 12: Control wire sizes

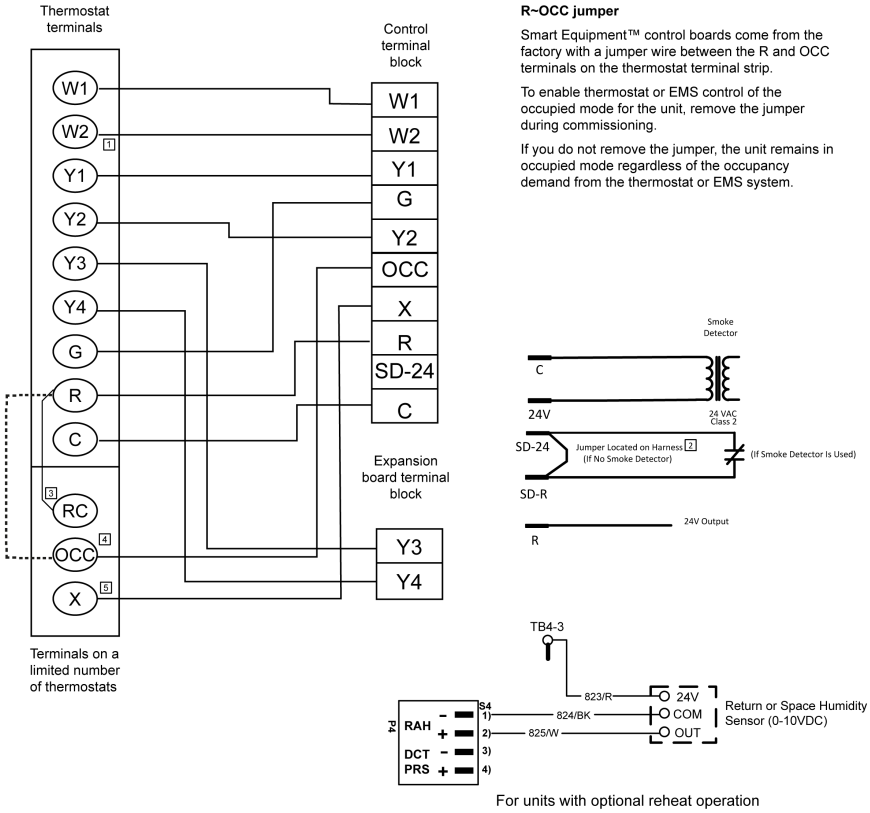
Wire size	Maximum length[1]
18 AWG	150 feet

1 From the unit to the thermostat and back to the unit.

CAUTION

208/230-3-60 and 380/415-3-50 units control transformers are factory wired for 230v and 415v power supply respectively. Change the tap on the transformer for 208-3-60 or 380-3-50 operation. See the unit wiring diagram.

Figure 62: Typical electronic thermostat field wiring



1 Second stage heating not required on single stage heating units.

2 Jumper is required if there is no Smoke Detector circuit.

3 Jumper is required for any combination of R, RC, or RH.

4 OCC is an output from the thermostat to indicate the Occupied condition.

5 X is an input to the thermostat to display Error Status conditions.

Convenience outlet cover installation

For units with a powered or non-powered convenience outlet, the convenience outlet cover is required to be installed in the field after the unit is installed.
To install the convenience outlet cover, complete the following steps.

1. The unit will leave the factory with a transit label covering the convenience outlet receptacle as shown in Figure 63. Remove and discard the convenience outlet transit label.

Figure 63: Convenience Outlet Transit Label

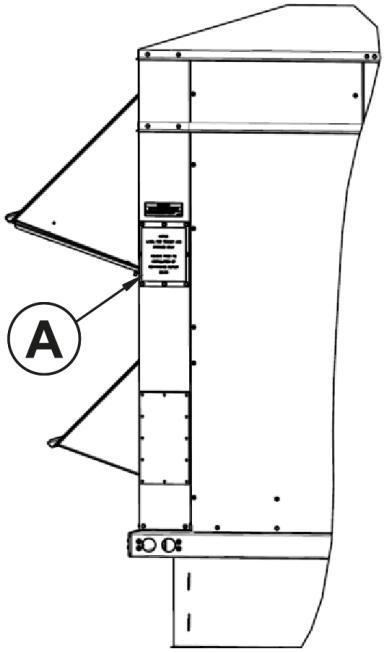


Table 13:

Item	Description
A	Convenience Outlet Transit Label

2. The convenience outlet cover will be shipped in the floor of the control box behind the high-voltage access panel as shown in Figure 64.

Figure 64: Location of Convenience Outlet Cover

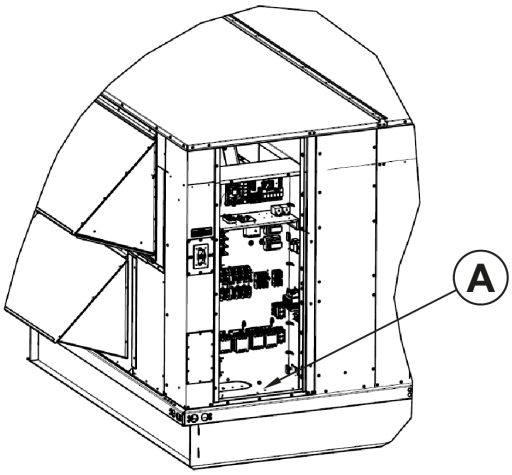
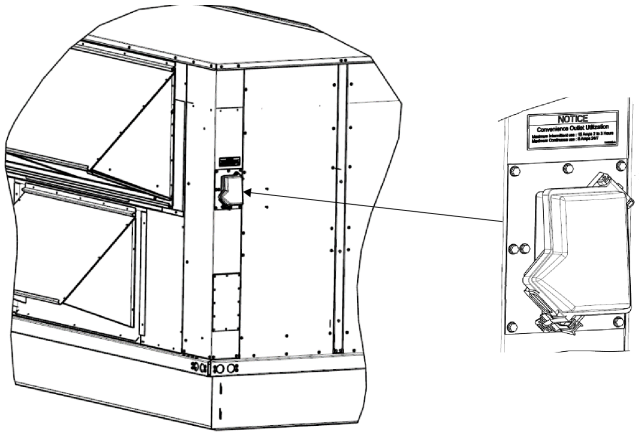


Table 14:

Item	Description
A	Location of Convenience Outlet Cover

3. To mount the cover, follow the cover manufacturer's installation instructions that are provided with the cover. The final assembly should resemble Figure 65.

Figure 65: Convenience Outlet Cover



CAUTION

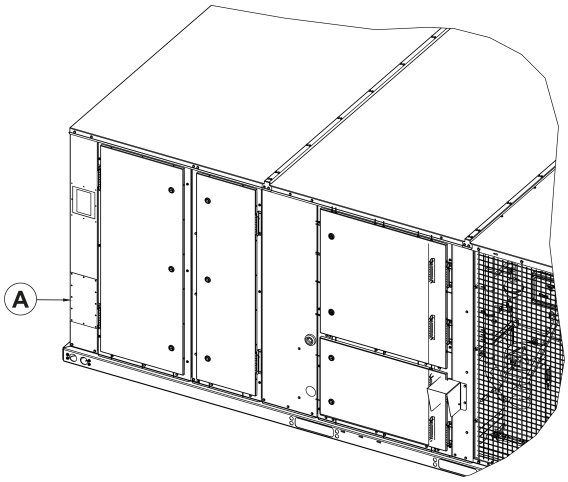
208/230-3-60 units with a factory-installed powered convenience outlet option are wired for 230v power supply. Change the tap on the transformer for 208-3-60 operation. See the unit wiring diagram.

Circuit Breaker and Service Disconnect Handle Installation

For units with a circuit breaker or a service disconnect, the disconnect handle is required to be assembled in the field after the unit is installed.

1. The unit will leave the factory with a patch plate covering the disconnect switch as shown in Figure 66.

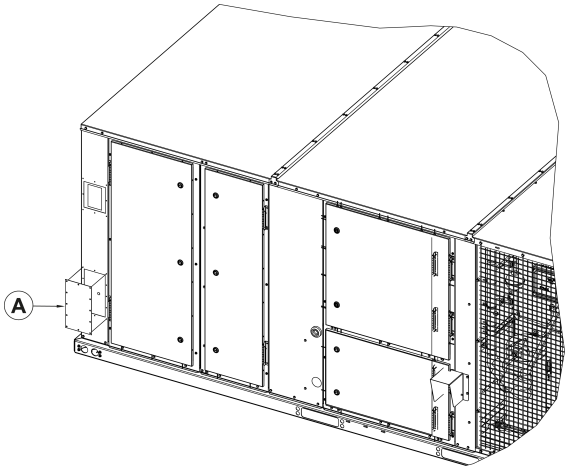
Figure 66: Patch plate



Item	Description
A	Patch plate

2. Remove the screws holding the patch plate to the unit cabinet as shown in Figure 67. Set aside the screws to be used in a later step. The patch plate can be discarded.

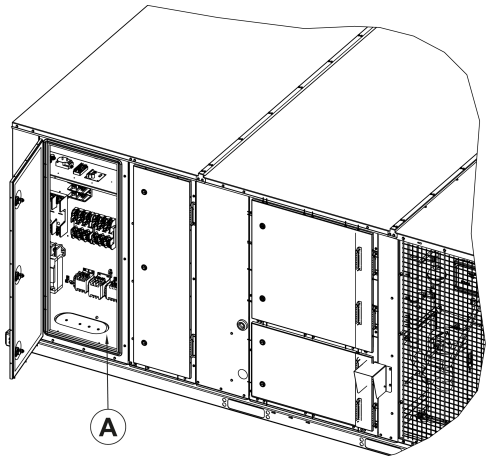
Figure 67: Removing the patch plate



Item	Description
A	Patch plate

3. The parts needed to complete the assembly are located in a box on the floor of the control box compartment as shown in Figure 68. These parts include the permanent mounting plate with a hole for the disconnect handle, the disconnect handle, the handle manufacturer's installation instruction, and the additional parts to connect the handle to the disconnect switch.

Figure 68: Disconnect handle and assembly parts

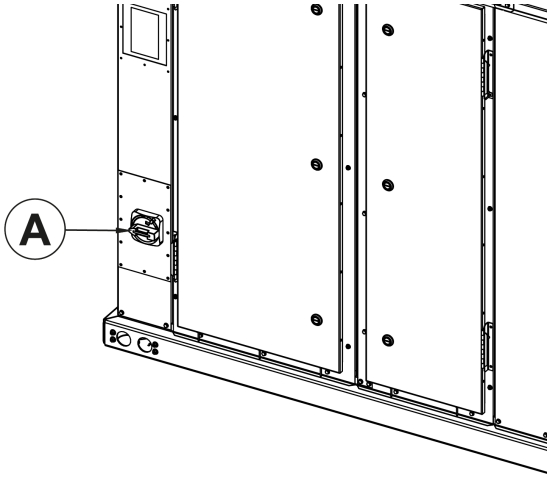


Item	Description
A	Control box floor

4. Attach the permanent mounting plate, gathered in Step 3, to the unit cabinet covering the opening that was created by removing the patch plate in Step 2. This should be attached using the screws removed in Step 2. Ensure the permanent mounting plate is attached with the hole aligned with the disconnect shaft.

5. To complete the field setup of the disconnect switch handle, follow the handle manufacturer's installation instructions that were included in the unit control box. These instructions will show the installation of the disconnect handle and rod. The final assembly should resemble Figure 69.

Figure 69: Disconnect handle



Item	Description
A	Disconnect handle

Electrical data

Constant volume standard static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 15: AV15 to AV28 constant volume standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	7.5	9.6	None	-	-	-	68.0	90	71	439	77.6	100	82	448
									2EH04502525	18.8	1	52.2	74.6	90	71	439	86.6	100	82	448
									2EH04505025	37.6	2	104.4	139.9	150	129	439	151.9	175	140	448
									2EH04507525	56.3	2	156.3	165.7	175	188	439	177.7	200	199	448
	230-3-60	25.0	190	25.0	190	2.1	7.5	8.7	None	-	-	-	68.0	90	71	445	76.7	100	81	454
									2EH04502525	23.0	1	57.7	81.5	90	75	445	92.4	100	85	454
									2EH04505025	45.9	2	115.2	153.4	175	141	445	164.3	175	151	454
									2EH04507525	68.9	2	173.0	182.4	200	208	445	193.3	200	218	454
	460-3-60	12.2	100	12.2	100	1.0	3.4	4.3	None	-	-	-	32.9	45	34	233	37.2	45	39	237
									2EH04502546	23.0	1	28.9	40.4	45	37	233	45.8	50	42	237
									2EH04505046	45.9	2	57.6	76.3	80	70	233	81.6	90	75	237
									2EH04507546	68.9	2	86.5	90.8	100	103	233	96.1	100	108	237
	575-3-60	9.3	72	9.3	72	0.9	2.8	3.5	None	-	-	-	25.5	30	27	170	29.0	35	31	174
									2EH04502558	23.0	1	23.1	32.4	35	30	170	36.8	40	34	174
									2EH04505058	45.9	2	46.1	61.1	70	56	170	65.5	70	60	174
									2EH04507558	68.9	2	69.2	72.7	80	83	170	77.1	80	87	174
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	10.2	9.6	None	-	-	-	77.3	100	81	504	86.9	110	92	514
									2EH04502525	18.8	1	52.2	78.0	100	81	504	90.0	110	92	514
									2EH04505025	37.6	2	104.4	143.3	150	132	504	155.3	175	143	514
									2EH04507525	56.3	2	156.3	169.1	200	191	504	181.1	200	203	514
	230-3-60	27.6	191	28.2	240	2.1	10.2	8.7	None	-	-	-	77.3	100	81	510	86.0	110	91	519
									2EH04502525	23.0	1	57.7	84.9	100	81	510	95.8	110	91	519
									2EH04505025	45.9	2	115.2	156.8	175	144	510	167.6	175	154	519
									2EH04507525	68.9	2	173.0	185.8	200	211	510	196.6	225	221	519
	460-3-60	12.8	100	14.7	130	1.0	4.8	4.3	None	-	-	-	38.0	50	39	270	42.3	50	44	274
									2EH04502546	23.0	1	28.9	42.1	50	39	270	47.5	50	44	274
									2EH04505046	45.9	2	57.6	78.0	80	72	270	83.4	90	77	274
									2EH04507546	68.9	2	86.5	92.5	100	105	270	97.9	110	110	274
	575-3-60	9.6	78	11.3	94	0.9	3.4	3.5	None	-	-	-	28.9	40	30	204	32.4	40	34	207
									2EH04502558	23.0	1	23.1	33.1	40	30	204	37.5	40	35	207
									2EH04505058	45.9	2	46.1	61.9	70	57	204	66.3	70	61	207
									2EH04507558	68.9	2	69.2	73.5	80	83	204	77.8	90	88	207
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	14.9	9.6	None	-	-	-	94.8	125	99	581	104.4	125	110	590
									2EH04502525	18.8	1	52.2	94.8	125	99	581	104.4	125	110	590
									2EH04505025	37.6	2	104.4	149.1	150	137	581	161.1	175	148	590
									2EH04507525	56.3	2	156.3	174.9	200	197	581	186.9	200	208	590
	230-3-60	28.2	240	34.0	240	2.3	15.0	8.7	None	-	-	-	94.9	125	99	582	103.6	125	109	591
									2EH04502525	23.0	1	57.7	94.9	125	99	582	103.6	125	109	591
									2EH04505025	45.9	2	115.2	162.8	175	150	582	173.6	175	160	591
									2EH04507525	68.9	2	173.0	191.8	225	216	582	202.6	225	226	591
	460-3-60	14.7	130	16.0	140	1.3	7.5	4.3	None	-	-	-	47.4	60	50	325	51.7	60	55	329
									2EH04502546	23.0	1	28.9	45.5	60	50	325	50.9	60	55	329
									2EH04505046	45.9	2	57.6	81.4	90	75	325	86.8	90	80	329
									2EH04507546	68.9	2	86.5	95.9	110	108	325	101.3	110	113	329
	575-3-60	11.3	94	12.9	108	1.1	5.6	3.5	None	-	-	-	37.4	50	39	246	40.9	50	43	250
									2EH04502558	23.0	1	23.1	35.9	50	39	246	40.3	50	43	250
									2EH04505058	45.9	2	46.1	64.6	70	59	246	69.0	70	63	250
									2EH04507558	68.9	2	69.2	76.2	90	86	246	80.6	90	90	250

Table 15: AV15 to AV28 constant volume standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	14.9	9.6	None	-	-	-	116.4	150	122	709	126.0	150	133	718
									2EH04502525	18.8	1	52.2	116.4	150	122	709	126.0	150	133	718
									2EH04505025	37.6	2	104.4	149.1	150	137	709	161.1	175	148	718
									2EH04507525	56.3	2	156.3	174.9	200	197	709	186.9	200	208	718
	230-3-60	41.0	304	41.0	304	2.3	15.0	8.7	None	-	-	-	116.5	150	122	710	125.2	150	132	719
									2EH04502525	23.0	1	57.7	116.5	150	122	710	125.2	150	132	719
									2EH04505025	45.9	2	115.2	162.8	175	150	710	173.6	175	160	719
									2EH04507525	68.9	2	173.0	191.8	225	216	710	202.6	225	226	719
	460-3-60	19.2	147	19.2	147	1.3	7.5	4.3	None	-	-	-	55.9	70	59	349	60.2	70	64	353
									2EH04502546	23.0	1	28.9	45.5	70	59	349	50.9	70	64	353
									2EH04505046	45.9	2	57.6	81.4	90	75	349	86.8	90	80	353
									2EH04507546	68.9	2	86.5	95.9	110	108	349	101.3	110	113	353
	575-3-60	16.7	122	16.7	122	1.1	5.6	3.5	None	-	-	-	47.6	60	50	288	51.1	60	54	292
									2EH04502558	23.0	1	23.1	35.9	60	50	288	40.3	60	54	292
									2EH04505058	45.9	2	46.1	64.6	70	59	288	69.0	70	63	292
									2EH04507558	68.9	2	69.2	76.2	90	86	288	80.6	90	90	292
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	19.8	9.6	None	-	-	-	143.6	175	150	740	153.2	200	161	750
									2EH04502525	18.8	1	52.2	143.6	175	150	740	153.2	200	161	750
									2EH04505025	37.6	2	104.4	155.3	175	150	740	167.3	200	161	750
									2EH04507525	56.3	2	156.3	181.1	200	203	740	193.1	200	214	750
	230-3-60	51.3	300	51.3	300	2.1	19.8	8.7	None	-	-	-	143.6	175	150	740	152.3	200	160	749
									2EH04502525	23.0	1	57.7	143.6	175	150	740	152.3	200	160	749
									2EH04505025	45.9	2	115.2	168.8	175	155	740	179.6	200	165	749
									2EH04507525	68.9	2	173.0	197.8	225	222	740	208.6	225	232	749
	460-3-60	22.4	150	22.4	150	1.0	9.9	4.3	None	-	-	-	64.3	80	68	371	68.6	90	72	376
									2EH04502546	23.0	1	28.9	48.5	80	68	371	53.9	90	72	376
									2EH04505046	45.9	2	57.6	84.4	90	78	371	89.8	90	83	376
									2EH04507546	68.9	2	86.5	98.9	110	111	371	104.3	110	116	376
	575-3-60	19.9	109	19.9	109	0.9	7.9	3.5	None	-	-	-	56.3	70	59	277	59.8	70	63	280
									2EH04502558	23.0	1	23.1	38.8	70	59	277	43.1	70	63	280
									2EH04505058	45.9	2	46.1	67.5	70	62	277	71.9	80	66	280
									2EH04507558	68.9	2	69.2	79.1	90	89	277	83.5	90	93	280

Table 16: AV15 to AV28 constant volume standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors (each) FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	7.5	5.0	9.6	None	-	-	-	78.0	100	82	460	87.6	110	93	469
										2EH04502525	18.8	1	52.2	87.1	100	82	460	99.1	110	93	469
										2EH04505025	37.6	2	104.4	152.4	175	140	460	164.4	175	151	469
										2EH04507525	56.3	2	156.3	178.2	200	200	460	190.2	200	211	469
	230-3-60	25.0	190	25.0	190	2.1	7.5	5.0	8.7	None	-	-	-	78.0	100	82	466	86.7	110	92	475
										2EH04502525	23.0	1	57.7	94.0	100	86	466	104.9	110	96	475
										2EH04505025	45.9	2	115.2	165.9	175	153	466	176.8	200	163	475
										2EH04507525	68.9	2	173.0	194.9	200	219	466	205.8	225	229	475
	460-3-60	12.2	100	12.2	100	1.0	3.4	2.2	4.3	None	-	-	-	37.3	45	39	242	41.6	50	44	247
										2EH04502546	23.0	1	28.9	45.9	50	42	242	51.3	60	47	247
										2EH04505046	45.9	2	57.6	81.8	90	75	242	87.1	90	80	247
										2EH04507546	68.9	2	86.5	96.3	100	108	242	101.6	110	113	247
	575-3-60	9.3	72	9.3	72	0.9	2.8	1.5	3.5	None	-	-	-	28.5	35	30	176	32.0	40	34	180
										2EH04502558	23.0	1	23.1	36.1	40	33	176	40.5	45	37	180
										2EH04505058	45.9	2	46.1	64.9	70	60	176	69.3	70	64	180
										2EH04507558	68.9	2	69.2	76.5	80	86	176	80.8	90	90	180

Table 16: AV15 to AV28 constant volume standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors (each) FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	10.2	5.0	9.6	None	-	-	-	87.3	110	92	525	96.9	125	103	535
										2EH04502525	18.8	1	52.2	90.5	110	92	525	102.5	125	103	535
										2EH04505025	37.6	2	104.4	155.8	175	143	525	167.8	175	154	535
										2EH04507525	56.3	2	156.3	181.6	200	203	525	193.6	200	214	535
	230-3-60	27.6	191	28.2	240	2.1	10.2	5.0	8.7	None	-	-	-	87.3	110	92	531	96.0	110	102	540
										2EH04502525	23.0	1	57.7	97.4	110	92	531	108.3	110	102	540
										2EH04505025	45.9	2	115.2	169.3	175	156	531	180.1	200	166	540
										2EH04507525	68.9	2	173.0	198.3	225	222	531	209.1	225	232	540
	460-3-60	12.8	100	14.7	130	1.0	4.8	2.2	4.3	None	-	-	-	42.4	50	45	279	46.7	60	49	284
										2EH04502546	23.0	1	28.9	47.6	50	44	279	53.0	60	49	284
										2EH04505046	45.9	2	57.6	83.5	90	77	279	88.9	90	82	284
										2EH04507546	68.9	2	86.5	98.0	110	110	279	103.4	110	115	284
	575-3-60	9.6	78	11.3	94	0.9	3.4	1.5	3.5	None	-	-	-	31.9	40	33	210	35.4	45	37	214
										2EH04502558	23.0	1	23.1	36.9	40	34	210	41.3	45	38	214
										2EH04505058	45.9	2	46.1	65.6	70	60	210	70.0	80	64	214
										2EH04507558	68.9	2	69.2	77.2	80	87	210	81.6	90	91	214
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	14.9	5.0	9.6	None	-	-	-	104.8	125	111	602	114.4	125	122	611
										2EH04502525	18.8	1	52.2	104.8	125	111	602	114.4	125	122	611
										2EH04505025	37.6	2	104.4	161.6	175	149	602	173.6	175	160	611
										2EH04507525	56.3	2	156.3	187.4	200	208	602	199.4	200	219	611
	230-3-60	28.2	240	34.0	240	2.3	15.0	5.0	8.7	None	-	-	-	104.9	125	111	603	113.6	125	121	612
										2EH04502525	23.0	1	57.7	104.9	125	111	603	114.3	125	121	612
										2EH04505025	45.9	2	115.2	175.3	200	161	603	186.1	200	171	612
										2EH04507525	68.9	2	173.0	204.3	225	228	603	215.1	225	238	612
	460-3-60	14.7	130	16.0	140	1.3	7.5	2.2	4.3	None	-	-	-	51.8	60	55	334	56.1	70	60	338
										2EH04502546	23.0	1	28.9	51.0	60	50	334	56.4	70	55	338
										2EH04505046	45.9	2	57.6	86.9	90	80	334	92.3	100	85	338
										2EH04507546	68.9	2	86.5	101.4	110	113	334	106.8	110	118	338
	575-3-60	11.3	94	12.9	108	1.1	5.6	1.5	3.5	None	-	-	-	40.4	50	43	252	43.9	50	47	256
										2EH04502558	23.0	1	23.1	39.6	50	39	252	44.0	50	43	256
										2EH04505058	45.9	2	46.1	68.4	70	63	252	72.8	80	67	256
										2EH04507558	68.9	2	69.2	80.0	90	89	252	84.3	90	93	256
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	14.9	5.0	9.6	None	-	-	-	126.4	150	134	730	136.0	175	145	739
										2EH04502525	18.8	1	52.2	126.4	150	134	730	136.0	175	145	739
										2EH04505025	37.6	2	104.4	161.6	175	149	730	173.6	175	160	739
										2EH04507525	56.3	2	156.3	187.4	200	208	730	199.4	200	219	739
	230-3-60	41.0	304	41.0	304	2.3	15.0	5.0	8.7	None	-	-	-	126.5	150	134	731	135.2	175	144	740
										2EH04502525	23.0	1	57.7	126.5	150	134	731	135.2	175	144	740
										2EH04505025	45.9	2	115.2	175.3	200	161	731	186.1	200	171	740
										2EH04507525	68.9	2	173.0	204.3	225	228	731	215.1	225	238	740
	460-3-60	19.2	147	19.2	147	1.3	7.5	2.2	4.3	None	-	-	-	60.3	70	64	358	64.6	80	69	362
										2EH04502546	23.0	1	28.9	51.0	70	59	358	56.4	80	64	362
										2EH04505046	45.9	2	57.6	86.9	90	80	358	92.3	100	85	362
										2EH04507546	68.9	2	86.5	101.4	110	113	358	106.8	110	118	362
	575-3-60	16.7	122	16.7	122	1.1	5.6	1.5	3.5	None	-	-	-	50.6	60	53	294	54.1	70	57	298
										2EH04502558	23.0	1	23.1	39.6	60	50	294	44.0	70	54	298
										2EH04505058	45.9	2	46.1	68.4	70	63	294	72.8	80	67	298
										2EH04507558	68.9	2	69.2	80.0	90	89	294	84.3	90	93	298

Table 16: AV15 to AV28 constant volume standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors (each) FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	19.8	5.0	9.6	None	-	-	-	153.6	200	162	761	163.2	200	173	771
										2EH04502525	18.8	1	52.2	153.6	200	162	761	163.2	200	173	771
										2EH04505025	37.6	2	104.4	167.8	200	162	761	179.8	200	173	771
										2EH04507525	56.3	2	156.3	193.6	200	214	761	205.6	225	225	771
	230-3-60	51.3	300	51.3	300	2.1	19.8	5.0	8.7	None	-	-	-	153.6	200	162	761	162.3	200	172	770
										2EH04502525	23.0	1	57.7	153.6	200	162	761	162.3	200	172	770
										2EH04505025	45.9	2	115.2	181.3	200	167	761	192.1	200	177	770
										2EH04507525	68.9	2	173.0	210.3	225	233	761	221.1	225	243	770
	460-3-60	22.4	150	22.4	150	1.0	9.9	2.2	4.3	None	-	-	-	68.7	90	73	380	73.0	90	78	385
										2EH04502546	23.0	1	28.9	54.0	90	68	380	59.4	90	72	385
										2EH04505046	45.9	2	57.6	89.9	90	83	380	95.3	100	88	385
										2EH04507546	68.9	2	86.5	104.4	110	116	380	109.8	110	121	385
	575-3-60	19.9	109	19.9	109	0.9	7.9	1.5	3.5	None	-	-	-	59.3	70	62	283	62.8	80	66	287
										2EH04502558	23.0	1	23.1	42.5	70	59	283	46.9	80	63	287
										2EH04505058	45.9	2	46.1	71.3	80	66	283	75.6	80	70	287
										2EH04507558	68.9	2	69.2	82.8	90	92	283	87.2	90	96	287

Table 17: AV15 to AV28 constant volume standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	7.5	6.7	9.6	None	-	-	-	81.4	100	86	452	91.0	110	97	462
										2EH04502525	18.8	1	52.2	91.4	100	86	452	103.4	110	97	462
										2EH04505025	37.6	2	104.4	156.6	175	144	452	168.6	175	155	462
										2EH04507525	56.3	2	156.3	182.4	200	204	452	194.4	200	215	462
	230-3-60	25.0	190	25.0	190	2.1	7.5	6.7	8.7	None	-	-	-	81.4	100	86	458	90.1	110	96	467
										2EH04502525	23.0	1	57.7	98.3	100	90	458	109.1	110	100	467
										2EH04505025	45.9	2	115.2	170.1	175	157	458	181.0	200	167	467
										2EH04507525	68.9	2	173.0	199.1	225	223	458	210.0	225	233	467
	460-3-60	12.2	100	12.2	100	1.0	3.4	3.4	4.3	None	-	-	-	39.7	50	42	240	44.0	50	47	244
										2EH04502546	23.0	1	28.9	48.9	50	45	240	54.3	60	50	244
										2EH04505046	45.9	2	57.6	84.8	90	78	240	90.1	100	83	244
										2EH04507546	68.9	2	86.5	99.3	110	111	240	104.6	110	116	244
	575-3-60	9.3	72	9.3	72	0.9	2.8	2.7	3.5	None	-	-	-	30.9	40	33	175	34.4	40	37	179
										2EH04502558	23.0	1	23.1	39.1	40	36	175	43.5	45	40	179
										2EH04505058	45.9	2	46.1	67.9	70	62	175	72.3	80	66	179
										2EH04507558	68.9	2	69.2	79.5	90	89	175	83.8	90	93	179
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	10.2	6.7	9.6	None	-	-	-	90.7	110	96	518	100.3	125	107	527
										2EH04502525	18.8	1	52.2	94.8	110	96	518	106.8	125	107	527
										2EH04505025	37.6	2	104.4	160.0	175	147	518	172.0	175	158	527
										2EH04507525	56.3	2	156.3	185.8	200	207	518	197.8	200	218	527
	230-3-60	27.6	191	28.2	240	2.1	10.2	6.7	8.7	None	-	-	-	90.7	110	96	523	99.4	125	106	532
										2EH04502525	23.0	1	57.7	101.6	110	96	523	112.5	125	106	532
										2EH04505025	45.9	2	115.2	173.5	175	160	523	184.4	200	170	532
										2EH04507525	68.9	2	173.0	202.5	225	226	523	213.4	225	236	532
	460-3-60	12.8	100	14.7	130	1.0	4.8	3.4	4.3	None	-	-	-	44.8	50	47	277	49.1	60	52	281
										2EH04502546	23.0	1	28.9	50.6	60	47	277	56.0	60	52	281
										2EH04505046	45.9	2	57.6	86.5	90	80	277	91.9	100	85	281
										2EH04507546	68.9	2	86.5	101.0	110	113	277	106.4	110	118	281
	575-3-60	9.6	78	11.3	94	0.9	3.4	2.7	3.5	None	-	-	-	34.3	45	36	209	37.8	45	40	213
										2EH04502558	23.0	1	23.1	39.9	45	37	209	44.3	45	41	213
										2EH04505058	45.9	2	46.1	68.6	70	63	209	73.0	80	67	213
										2EH04507558	68.9	2	69.2	80.2	90	90	209	84.6	90	94	213

Table 17: AV15 to AV28 constant volume standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	14.9	6.7	9.6	None	-	-	-	108.2	125	115	594	117.8	150	126	604
										2EH04502525	18.8	1	52.2	108.2	125	115	594	117.8	150	126	604
										2EH04505025	37.6	2	104.4	165.9	175	153	594	177.9	200	164	604
										2EH04507525	56.3	2	156.3	191.7	200	212	594	203.7	225	223	604
	230-3-60	28.2	240	34.0	240	2.3	15.0	6.7	8.7	None	-	-	-	108.3	125	115	596	117.0	150	125	604
										2EH04502525	23.0	1	57.7	108.3	125	115	596	118.5	150	125	604
										2EH04505025	45.9	2	115.2	179.5	200	165	596	190.4	200	175	604
										2EH04507525	68.9	2	173.0	208.5	225	232	596	219.4	225	242	604
	460-3-60	14.7	130	16.0	140	1.3	7.5	3.4	4.3	None	-	-	-	54.2	70	58	332	58.5	70	63	336
										2EH04502546	23.0	1	28.9	54.0	70	58	332	59.4	70	63	336
										2EH04505046	45.9	2	57.6	89.9	90	83	332	95.3	100	88	336
										2EH04507546	68.9	2	86.5	104.4	110	116	332	109.8	110	121	336
	575-3-60	11.3	94	12.9	108	1.1	5.6	2.7	3.5	None	-	-	-	42.8	50	46	251	46.3	50	50	255
										2EH04502558	23.0	1	23.1	42.6	50	46	251	47.0	50	50	255
										2EH04505058	45.9	2	46.1	71.4	80	66	251	75.8	80	70	255
										2EH04507558	68.9	2	69.2	83.0	90	92	251	87.3	90	96	255
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	14.9	6.7	9.6	None	-	-	-	129.8	150	137	722	139.4	175	148	732
										2EH04502525	18.8	1	52.2	129.8	150	137	722	139.4	175	148	732
										2EH04505025	37.6	2	104.4	165.9	175	153	722	177.9	200	164	732
										2EH04507525	56.3	2	156.3	191.7	200	212	722	203.7	225	223	732
	230-3-60	41.0	304	41.0	304	2.3	15.0	6.7	8.7	None	-	-	-	129.9	150	138	724	138.6	175	148	732
										2EH04502525	23.0	1	57.7	129.9	150	138	724	138.6	175	148	732
										2EH04505025	45.9	2	115.2	179.5	200	165	724	190.4	200	175	732
										2EH04507525	68.9	2	173.0	208.5	225	232	724	219.4	225	242	732
	460-3-60	19.2	147	19.2	147	1.3	7.5	3.4	4.3	None	-	-	-	62.7	80	67	356	67.0	80	72	360
										2EH04502546	23.0	1	28.9	54.0	80	67	356	59.4	80	72	360
										2EH04505046	45.9	2	57.6	89.9	90	83	356	95.3	100	88	360
										2EH04507546	68.9	2	86.5	104.4	110	116	356	109.8	110	121	360
	575-3-60	16.7	122	16.7	122	1.1	5.6	2.7	3.5	None	-	-	-	53.0	60	56	293	56.5	70	60	297
										2EH04502558	23.0	1	23.1	42.6	60	56	293	47.0	70	60	297
										2EH04505058	45.9	2	46.1	71.4	80	66	293	75.8	80	70	297
										2EH04507558	68.9	2	69.2	83.0	90	92	293	87.3	90	96	297
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	19.8	6.7	9.6	None	-	-	-	157.0	200	166	753	166.6	200	177	763
										2EH04502525	18.8	1	52.2	157.0	200	166	753	166.6	200	177	763
										2EH04505025	37.6	2	104.4	172.0	200	166	753	184.0	200	177	763
										2EH04507525	56.3	2	156.3	197.8	200	218	753	209.8	225	229	763
	230-3-60	51.3	300	51.3	300	2.1	19.8	6.7	8.7	None	-	-	-	157.0	200	166	753	165.7	200	176	762
										2EH04502525	23.0	1	57.7	157.0	200	166	753	165.7	200	176	762
										2EH04505025	45.9	2	115.2	185.5	200	171	753	196.4	200	181	762
										2EH04507525	68.9	2	173.0	214.5	225	237	753	225.4	250	247	762
	460-3-60	22.4	150	22.4	150	1.0	9.9	3.4	4.3	None	-	-	-	71.1	90	75	378	75.4	90	80	382
										2EH04502546	23.0	1	28.9	57.0	90	75	378	62.4	90	80	382
										2EH04505046	45.9	2	57.6	92.9	100	85	378	98.3	100	90	382
										2EH04507546	68.9	2	86.5	107.4	110	119	378	112.8	125	124	382
	575-3-60	19.9	109	19.9	109	0.9	7.9	2.7	3.5	None	-	-	-	61.7	80	65	282	65.2	80	69	286
										2EH04502558	23.0	1	23.1	45.5	80	65	282	49.9	80	69	286
										2EH04505058	45.9	2	46.1	74.3	80	68	282	78.6	80	72	286
										2EH04507558	68.9	2	69.2	85.8	90	95	282	90.2	100	99	286

Constant volume medium static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 18: AV15 to AV28 constant volume medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	10.2	9.6	None	-	-	-	70.7	90	74	453	80.3	100	85	463
									2EH04502525	18.8	1	52.2	78.0	90	74	453	90.0	100	85	463
									2EH04505025	37.6	2	104.4	143.3	150	132	453	155.3	175	143	463
									2EH04507525	56.3	2	156.3	169.1	200	191	453	181.1	200	203	463
	230-3-60	25.0	190	25.0	190	2.1	10.2	8.7	None	-	-	-	70.7	90	74	459	79.4	100	84	468
									2EH04502525	23.0	1	57.7	84.9	90	78	459	95.8	100	88	468
									2EH04505025	45.9	2	115.2	156.8	175	144	459	167.6	175	154	468
									2EH04507525	68.9	2	173.0	185.8	200	211	459	196.6	225	221	468
	460-3-60	12.2	100	12.2	100	1.0	4.8	4.3	None	-	-	-	34.3	45	36	240	38.6	50	41	244
									2EH04502546	23.0	1	28.9	42.1	45	39	240	47.5	50	44	244
									2EH04505046	45.9	2	57.6	78.0	80	72	240	83.4	90	77	244
									2EH04507546	68.9	2	86.5	92.5	100	105	240	97.9	110	110	244
	575-3-60	9.3	72	9.3	72	0.9	3.4	3.5	None	-	-	-	26.1	35	27	176	29.6	35	31	179
									2EH04502558	23.0	1	23.1	33.1	35	30	176	37.5	40	35	179
									2EH04505058	45.9	2	46.1	61.9	70	57	176	66.3	70	61	179
									2EH04507558	68.9	2	69.2	73.5	80	83	176	77.8	90	88	179
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	14.9	9.6	None	-	-	-	82.0	110	86	522	91.6	110	97	532
									2EH04502525	18.8	1	52.2	83.9	110	86	522	95.9	110	97	532
									2EH04505025	37.6	2	104.4	149.1	150	137	522	161.1	175	148	532
									2EH04507525	56.3	2	156.3	174.9	200	197	522	186.9	200	208	532
	230-3-60	27.6	191	28.2	240	2.1	15.0	8.7	None	-	-	-	82.1	110	86	524	90.8	110	96	533
									2EH04502525	23.0	1	57.7	90.9	110	86	524	101.8	110	96	533
									2EH04505025	45.9	2	115.2	162.8	175	150	524	173.6	175	160	533
									2EH04507525	68.9	2	173.0	191.8	225	216	524	202.6	225	226	533
	460-3-60	12.8	100	14.7	130	1.0	7.5	4.3	None	-	-	-	40.7	50	43	280	45.0	50	47	284
									2EH04502546	23.0	1	28.9	45.5	50	43	280	50.9	60	47	284
									2EH04505046	45.9	2	57.6	81.4	90	75	280	86.8	90	80	284
									2EH04507546	68.9	2	86.5	95.9	110	108	280	101.3	110	113	284
	575-3-60	9.6	78	11.3	94	0.9	5.6	3.5	None	-	-	-	31.1	40	33	211	34.6	45	37	215
									2EH04502558	23.0	1	23.1	35.9	40	33	211	40.3	45	37	215
									2EH04505058	45.9	2	46.1	64.6	70	59	211	69.0	70	63	215
									2EH04507558	68.9	2	69.2	76.2	90	86	211	80.6	90	90	215
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	19.8	9.6	None	-	-	-	99.7	125	105	619	109.3	125	116	629
									2EH04502525	18.8	1	52.2	99.7	125	105	619	109.3	125	116	629
									2EH04505025	37.6	2	104.4	155.3	175	143	619	167.3	175	154	629
									2EH04507525	56.3	2	156.3	181.1	200	203	619	193.1	200	214	629
	230-3-60	28.2	240	34.0	240	2.3	19.8	8.7	None	-	-	-	99.7	125	105	619	108.4	125	115	628
									2EH04502525	23.0	1	57.7	99.7	125	105	619	108.4	125	115	628
									2EH04505025	45.9	2	115.2	168.8	175	155	619	179.6	200	165	628
									2EH04507525	68.9	2	173.0	197.8	225	222	619	208.6	225	232	628
	460-3-60	14.7	130	16.0	140	1.3	9.9	4.3	None	-	-	-	49.8	60	53	341	54.1	70	58	345
									2EH04502546	23.0	1	28.9	48.5	60	53	341	53.9	70	58	345
									2EH04505046	45.9	2	57.6	84.4	90	78	341	89.8	90	83	345
									2EH04507546	68.9	2	86.5	98.9	110	111	341	104.3	110	116	345
	575-3-60	11.3	94	12.9	108	1.1	7.9	3.5	None	-	-	-	39.7	50	42	262	43.2	50	46	265
									2EH04502558	23.0	1	23.1	38.8	50	42	262	43.1	50	46	265
									2EH04505058	45.9	2	46.1	67.5	70	62	262	71.9	80	66	265
									2EH04507558	68.9	2	69.2	79.1	90	89	262	83.5	90	93	265

Table 18: AV15 to AV28 constant volume medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	19.8	9.6	None	-	-	-	121.3	150	128	747	130.9	150	139	757
									2EH04502525	18.8	1	52.2	121.3	150	128	747	130.9	150	139	757
									2EH04505025	37.6	2	104.4	155.3	175	143	747	167.3	175	154	757
									2EH04507525	56.3	2	156.3	181.1	200	203	747	193.1	200	214	757
	230-3-60	41.0	304	41.0	304	2.3	19.8	8.7	None	-	-	-	121.3	150	128	747	130.0	150	138	756
									2EH04502525	23.0	1	57.7	121.3	150	128	747	130.0	150	138	756
									2EH04505025	45.9	2	115.2	168.8	175	155	747	179.6	200	165	756
									2EH04507525	68.9	2	173.0	197.8	225	222	747	208.6	225	232	756
	460-3-60	19.2	147	19.2	147	1.3	9.9	4.3	None	-	-	-	58.3	70	62	365	62.6	80	66	369
									2EH04502546	23.0	1	28.9	48.5	70	62	365	53.9	80	66	369
									2EH04505046	45.9	2	57.6	84.4	90	78	365	89.8	90	83	369
									2EH04507546	68.9	2	86.5	98.9	110	111	365	104.3	110	116	369
	575-3-60	16.7	122	16.7	122	1.1	7.9	3.5	None	-	-	-	49.9	60	53	304	53.4	70	57	307
									2EH04502558	23.0	1	23.1	38.8	60	53	304	43.1	70	57	307
									2EH04505058	45.9	2	46.1	67.5	70	62	304	71.9	80	66	307
									2EH04507558	68.9	2	69.2	79.1	90	89	304	83.5	90	93	307
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	25.4	9.6	None	-	-	-	149.2	200	157	778	158.8	200	168	788
									2EH04502525	18.8	1	52.2	149.2	200	157	778	158.8	200	168	788
									2EH04505025	37.6	2	104.4	162.3	200	157	778	174.3	200	168	788
									2EH04507525	56.3	2	156.3	188.1	200	209	778	200.1	225	220	788
	230-3-60	51.3	300	51.3	300	2.1	25.4	8.7	None	-	-	-	149.2	200	157	778	157.9	200	167	787
									2EH04502525	23.0	1	57.7	149.2	200	157	778	157.9	200	167	787
									2EH04505025	45.9	2	115.2	175.8	200	162	778	186.6	200	172	787
									2EH04507525	68.9	2	173.0	204.8	225	228	778	215.6	225	238	787
	460-3-60	22.4	150	22.4	150	1.0	12.7	4.3	None	-	-	-	67.1	80	71	390	71.4	90	76	395
									2EH04502546	23.0	1	28.9	52.0	80	71	390	57.4	90	76	395
									2EH04505046	45.9	2	57.6	87.9	90	81	390	93.3	100	86	395
									2EH04507546	68.9	2	86.5	102.4	110	114	390	107.8	110	119	395
	575-3-60	19.9	109	19.9	109	0.9	10.5	3.5	None	-	-	-	58.9	70	62	308	62.4	80	66	311
									2EH04502558	23.0	1	23.1	42.0	70	62	308	46.4	80	66	311
									2EH04505058	45.9	2	46.1	70.8	80	65	308	75.1	80	69	311
									2EH04507558	68.9	2	69.2	82.3	90	92	308	86.7	90	96	311

Table 19: AV15 to AV28 constant volume medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	10.2	5.0	9.6	None	-	-	-	80.7	100	86	474	90.3	110	97	484
										2EH04502525	18.8	1	52.2	90.5	100	86	474	102.5	110	97	484
										2EH04505025	37.6	2	104.4	155.8	175	143	474	167.8	175	154	484
										2EH04507525	56.3	2	156.3	181.6	200	203	474	193.6	200	214	484
	230-3-60	25.0	190	25.0	190	2.1	10.2	5.0	8.7	None	-	-	-	80.7	100	86	480	89.4	110	96	489
										2EH04502525	23.0	1	57.7	97.4	100	90	480	108.3	110	100	489
										2EH04505025	45.9	2	115.2	169.3	175	156	480	180.1	200	166	489
										2EH04507525	68.9	2	173.0	198.3	225	222	480	209.1	225	232	489
	460-3-60	12.2	100	12.2	100	1.0	4.8	2.2	4.3	None	-	-	-	38.7	50	41	249	43.0	50	46	254
										2EH04502546	23.0	1	28.9	47.6	50	44	249	53.0	60	49	254
										2EH04505046	45.9	2	57.6	83.5	90	77	249	88.9	90	82	254
										2EH04507546	68.9	2	86.5	98.0	110	110	249	103.4	110	115	254
	575-3-60	9.3	72	9.3	72	0.9	3.4	1.5	3.5	None	-	-	-	29.1	35	31	182	32.6	40	35	186
										2EH04502558	23.0	1	23.1	36.9	40	34	182	41.3	45	38	186
										2EH04505058	45.9	2	46.1	65.6	70	60	182	70.0	80	64	186
										2EH04507558	68.9	2	69.2	77.2	80	87	182	81.6	90	91	186

Table 19: AV15 to AV28 constant volume medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	14.9	5.0	9.6	None	-	-	-	92.0	110	98	543	101.6	125	109	553
										2EH04502525	18.8	1	52.2	96.4	110	98	543	108.4	125	109	553
										2EH04505025	37.6	2	104.4	161.6	175	149	543	173.6	175	160	553
										2EH04507525	56.3	2	156.3	187.4	200	208	543	199.4	200	219	553
	230-3-60	27.6	191	28.2	240	2.1	15.0	5.0	8.7	None	-	-	-	92.1	110	98	545	100.8	125	108	554
										2EH04502525	23.0	1	57.7	103.4	110	98	545	114.3	125	108	554
										2EH04505025	45.9	2	115.2	175.3	200	161	545	186.1	200	171	554
										2EH04507525	68.9	2	173.0	204.3	225	228	545	215.1	225	238	554
	460-3-60	12.8	100	14.7	130	1.0	7.5	2.2	4.3	None	-	-	-	45.1	50	48	289	49.4	60	53	293
										2EH04502546	23.0	1	28.9	51.0	60	47	289	56.4	60	52	293
										2EH04505046	45.9	2	57.6	86.9	90	80	289	92.3	100	85	293
										2EH04507546	68.9	2	86.5	101.4	110	113	289	106.8	110	118	293
	575-3-60	9.6	78	11.3	94	0.9	5.6	1.5	3.5	None	-	-	-	34.1	45	36	218	37.6	45	40	221
										2EH04502558	23.0	1	23.1	39.6	45	36	218	44.0	45	40	221
										2EH04505058	45.9	2	46.1	68.4	70	63	218	72.8	80	67	221
										2EH04507558	68.9	2	69.2	80.0	90	89	218	84.3	90	93	221
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	19.8	5.0	9.6	None	-	-	-	109.7	125	116	640	119.3	150	127	650
										2EH04502525	18.8	1	52.2	109.7	125	116	640	119.3	150	127	650
										2EH04505025	37.6	2	104.4	167.8	175	154	640	179.8	200	165	650
										2EH04507525	56.3	2	156.3	193.6	200	214	640	205.6	225	225	650
	230-3-60	28.2	240	34.0	240	2.3	19.8	5.0	8.7	None	-	-	-	109.7	125	116	640	118.4	150	126	649
										2EH04502525	23.0	1	57.7	109.7	125	116	640	120.3	150	126	649
										2EH04505025	45.9	2	115.2	181.3	200	167	640	192.1	200	177	649
										2EH04507525	68.9	2	173.0	210.3	225	233	640	221.1	225	243	649
	460-3-60	14.7	130	16.0	140	1.3	9.9	2.2	4.3	None	-	-	-	54.2	70	58	350	58.5	70	63	354
										2EH04502546	23.0	1	28.9	54.0	70	53	350	59.4	70	58	354
										2EH04505046	45.9	2	57.6	89.9	90	83	350	95.3	100	88	354
										2EH04507546	68.9	2	86.5	104.4	110	116	350	109.8	110	121	354
	575-3-60	11.3	94	12.9	108	1.1	7.9	1.5	3.5	None	-	-	-	42.7	50	45	268	46.2	50	49	272
										2EH04502558	23.0	1	23.1	42.5	50	42	268	46.9	50	46	272
										2EH04505058	45.9	2	46.1	71.3	80	66	268	75.6	80	70	272
										2EH04507558	68.9	2	69.2	82.8	90	92	268	87.2	90	96	272
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	19.8	5.0	9.6	None	-	-	-	131.3	150	139	768	140.9	175	150	778
										2EH04502525	18.8	1	52.2	131.3	150	139	768	140.9	175	150	778
										2EH04505025	37.6	2	104.4	167.8	175	154	768	179.8	200	165	778
										2EH04507525	56.3	2	156.3	193.6	200	214	768	205.6	225	225	778
	230-3-60	41.0	304	41.0	304	2.3	19.8	5.0	8.7	None	-	-	-	131.3	150	139	768	140.0	175	149	777
										2EH04502525	23.0	1	57.7	131.3	150	139	768	140.0	175	149	777
										2EH04505025	45.9	2	115.2	181.3	200	167	768	192.1	200	177	777
										2EH04507525	68.9	2	173.0	210.3	225	233	768	221.1	225	243	777
	460-3-60	19.2	147	19.2	147	1.3	9.9	2.2	4.3	None	-	-	-	62.7	80	67	374	67.0	80	72	378
										2EH04502546	23.0	1	28.9	54.0	80	62	374	59.4	80	66	378
										2EH04505046	45.9	2	57.6	89.9	90	83	374	95.3	100	88	378
										2EH04507546	68.9	2	86.5	104.4	110	116	374	109.8	110	121	378
	575-3-60	16.7	122	16.7	122	1.1	7.9	1.5	3.5	None	-	-	-	52.9	60	56	310	56.4	70	60	314
										2EH04502558	23.0	1	23.1	42.5	60	53	310	46.9	70	57	314
										2EH04505058	45.9	2	46.1	71.3	80	66	310	75.6	80	70	314
										2EH04507558	68.9	2	69.2	82.8	90	92	310	87.2	90	96	314

Table 19: AV15 to AV28 constant volume medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	25.4	5.0	9.6	None	-	-	-	159.2	200	168	799	168.8	200	179	809
										2EH04502525	18.8	1	52.2	159.2	200	168	799	168.8	200	179	809
										2EH04505025	37.6	2	104.4	174.8	200	168	799	186.8	200	179	809
										2EH04507525	56.3	2	156.3	200.6	225	220	799	212.6	225	231	809
	230-3-60	51.3	300	51.3	300	2.1	25.4	5.0	8.7	None	-	-	-	159.2	200	168	799	167.9	200	178	808
										2EH04502525	23.0	1	57.7	159.2	200	168	799	167.9	200	178	808
										2EH04505025	45.9	2	115.2	188.3	200	173	799	199.1	200	183	808
										2EH04507525	68.9	2	173.0	217.3	225	240	799	228.1	250	250	808
	460-3-60	22.4	150	22.4	150	1.0	12.7	2.2	4.3	None	-	-	-	71.5	90	76	399	75.8	90	81	404
										2EH04502546	23.0	1	28.9	57.5	90	71	399	62.9	90	76	404
										2EH04505046	45.9	2	57.6	93.4	100	86	399	98.8	100	91	404
										2EH04507546	68.9	2	86.5	107.9	110	119	399	113.3	125	124	404
	575-3-60	19.9	109	19.9	109	0.9	10.5	1.5	3.5	None	-	-	-	61.9	80	65	314	65.4	80	69	317
										2EH04502558	23.0	1	23.1	45.8	80	62	314	50.1	80	66	317
										2EH04505058	45.9	2	46.1	74.5	80	69	314	78.9	80	73	317
										2EH04507558	68.9	2	69.2	86.1	90	95	314	90.5	100	99	317

Table 20: AV15 to AV28 constant volume medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr Exh Motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	10.2	6.7	9.6	None	-	-	-	84.1	100	89	467	93.7	110	101	476
										2EH04502525	18.8	1	52.2	94.8	100	89	467	106.8	110	101	476
										2EH04505025	37.6	2	104.4	160.0	175	147	467	172.0	175	158	476
										2EH04507525	56.3	2	156.3	185.8	200	207	467	197.8	200	218	476
	230-3-60	25.0	190	25.0	190	2.1	10.2	6.7	8.7	None	-	-	-	84.1	100	89	472	92.8	110	99	481
										2EH04502525	23.0	1	57.7	101.6	110	93	472	112.5	125	104	481
										2EH04505025	45.9	2	115.2	173.5	175	160	472	184.4	200	170	481
										2EH04507525	68.9	2	173.0	202.5	225	226	472	213.4	225	236	481
	460-3-60	12.2	100	12.2	100	1.0	4.8	3.4	4.3	None	-	-	-	41.1	50	44	247	45.4	50	49	251
										2EH04502546	23.0	1	28.9	50.6	60	47	247	56.0	60	52	251
										2EH04505046	45.9	2	57.6	86.5	90	80	247	91.9	100	85	251
										2EH04507546	68.9	2	86.5	101.0	110	113	247	106.4	110	118	251
	575-3-60	9.3	72	9.3	72	0.9	3.4	2.7	3.5	None	-	-	-	31.5	40	34	181	35.0	40	38	185
										2EH04502558	23.0	1	23.1	39.9	40	37	181	44.3	45	41	185
										2EH04505058	45.9	2	46.1	68.6	70	63	181	73.0	80	67	185
										2EH04507558	68.9	2	69.2	80.2	90	90	181	84.6	90	94	185
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	14.9	6.7	9.6	None	-	-	-	95.4	110	102	536	105.0	125	113	545
										2EH04502525	18.8	1	52.2	100.6	110	102	536	112.6	125	113	545
										2EH04505025	37.6	2	104.4	165.9	175	153	536	177.9	200	164	545
										2EH04507525	56.3	2	156.3	191.7	200	212	536	203.7	225	223	545
	230-3-60	27.6	191	28.2	240	2.1	15.0	6.7	8.7	None	-	-	-	95.5	110	102	537	104.2	125	112	546
										2EH04502525	23.0	1	57.7	107.6	110	102	537	118.5	125	112	546
										2EH04505025	45.9	2	115.2	179.5	200	165	537	190.4	200	175	546
										2EH04507525	68.9	2	173.0	208.5	225	232	537	219.4	225	242	546
	460-3-60	12.8	100	14.7	130	1.0	7.5	3.4	4.3	None	-	-	-	47.5	60	50	286	51.8	60	55	291
										2EH04502546	23.0	1	28.9	54.0	60	50	286	59.4	60	55	291
										2EH04505046	45.9	2	57.6	89.9	90	83	286	95.3	100	88	291
										2EH04507546	68.9	2	86.5	104.4	110	116	286	109.8	110	121	291
	575-3-60	9.6	78	11.3	94	0.9	5.6	2.7	3.5	None	-	-	-	36.5	45	39	217	40.0	50	43	220
										2EH04502558	23.0	1	23.1	42.6	45	39	217	47.0	50	43	220
										2EH04505058	45.9	2	46.1	71.4	80	66	217	75.8	80	70	220
										2EH04507558	68.9	2	69.2	83.0	90	92	217	87.3	90	96	220

Table 20: AV15 to AV28 constant volume medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr Exh Motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	19.8	6.7	9.6	None	-	-	-	113.1	125	120	633	122.7	150	131	642
										2EH04502525	18.8	1	52.2	113.1	125	120	633	122.7	150	131	642
										2EH04505025	37.6	2	104.4	172.0	175	158	633	184.0	200	169	642
										2EH04507525	56.3	2	156.3	197.8	200	218	633	209.8	225	229	642
	230-3-60	28.2	240	34.0	240	2.3	19.8	6.7	8.7	None	-	-	-	113.1	125	120	633	121.8	150	130	641
										2EH04502525	23.0	1	57.7	113.6	125	120	633	124.5	150	130	641
										2EH04505025	45.9	2	115.2	185.5	200	171	633	196.4	200	181	641
										2EH04507525	68.9	2	173.0	214.5	225	237	633	225.4	250	247	641
	460-3-60	14.7	130	16.0	140	1.3	9.9	3.4	4.3	None	-	-	-	56.6	70	60	348	60.9	70	65	352
										2EH04502546	23.0	1	28.9	57.0	70	60	348	62.4	70	65	352
										2EH04505046	45.9	2	57.6	92.9	100	85	348	98.3	100	90	352
										2EH04507546	68.9	2	86.5	107.4	110	119	348	112.8	125	124	352
	575-3-60	11.3	94	12.9	108	1.1	7.9	2.7	3.5	None	-	-	-	45.1	50	48	267	48.6	60	52	271
										2EH04502558	23.0	1	23.1	45.5	50	48	267	49.9	60	52	271
										2EH04505058	45.9	2	46.1	74.3	80	68	267	78.6	80	72	271
										2EH04507558	68.9	2	69.2	85.8	90	95	267	90.2	100	99	271
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	19.8	6.7	9.6	None	-	-	-	134.7	175	143	761	144.3	175	154	770
										2EH04502525	18.8	1	52.2	134.7	175	143	761	144.3	175	154	770
										2EH04505025	37.6	2	104.4	172.0	175	158	761	184.0	200	169	770
										2EH04507525	56.3	2	156.3	197.8	200	218	761	209.8	225	229	770
	230-3-60	41.0	304	41.0	304	2.3	19.8	6.7	8.7	None	-	-	-	134.7	175	143	761	143.4	175	153	769
										2EH04502525	23.0	1	57.7	134.7	175	143	761	143.4	175	153	769
										2EH04505025	45.9	2	115.2	185.5	200	171	761	196.4	200	181	769
										2EH04507525	68.9	2	173.0	214.5	225	237	761	225.4	250	247	769
	460-3-60	19.2	147	19.2	147	1.3	9.9	3.4	4.3	None	-	-	-	65.1	80	69	372	69.4	80	74	376
										2EH04502546	23.0	1	28.9	57.0	80	69	372	62.4	80	74	376
										2EH04505046	45.9	2	57.6	92.9	100	85	372	98.3	100	90	376
										2EH04507546	68.9	2	86.5	107.4	110	119	372	112.8	125	124	376
	575-3-60	16.7	122	16.7	122	1.1	7.9	2.7	3.5	None	-	-	-	55.3	70	59	309	58.8	70	63	313
										2EH04502558	23.0	1	23.1	45.5	70	59	309	49.9	70	63	313
										2EH04505058	45.9	2	46.1	74.3	80	68	309	78.6	80	72	313
										2EH04507558	68.9	2	69.2	85.8	90	95	309	90.2	100	99	313
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	25.4	6.7	9.6	None	-	-	-	162.6	200	172	791	172.2	200	183	801
										2EH04502525	18.8	1	52.2	162.6	200	172	791	172.2	200	183	801
										2EH04505025	37.6	2	104.4	179.0	200	172	791	191.0	200	183	801
										2EH04507525	56.3	2	156.3	204.8	225	224	791	216.8	225	235	801
	230-3-60	51.3	300	51.3	300	2.1	25.4	6.7	8.7	None	-	-	-	162.6	200	172	791	171.3	200	182	800
										2EH04502525	23.0	1	57.7	162.6	200	172	791	171.3	200	182	800
										2EH04505025	45.9	2	115.2	192.5	200	177	791	203.4	225	187	800
										2EH04507525	68.9	2	173.0	221.5	225	244	791	232.4	250	254	800
	460-3-60	22.4	150	22.4	150	1.0	12.7	3.4	4.3	None	-	-	-	73.9	90	79	397	78.2	100	83	401
										2EH04502546	23.0	1	28.9	60.5	90	79	397	65.9	100	83	401
										2EH04505046	45.9	2	57.6	96.4	100	89	397	101.8	110	94	401
										2EH04507546	68.9	2	86.5	110.9	125	122	397	116.3	125	127	401
	575-3-60	19.9	109	19.9	109	0.9	10.5	2.7	3.5	None	-	-	-	64.3	80	68	313	67.8	80	72	316
										2EH04502558	23.0	1	23.1	48.8	80	68	313	53.1	80	72	316
										2EH04505058	45.9	2	46.1	77.5	80	71	313	81.9	90	75	316
										2EH04507558	68.9	2	69.2	89.1	90	98	313	93.5	100	102	316

Constant volume high static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 21: AV15 to AV28 constant volume high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	14.9	9.6	None	-	-	-	75.4	100	79	471	85.0	110	91	481
									2EH04502525	18.8	1	52.2	83.9	100	79	471	95.9	110	91	481
									2EH04505025	37.6	2	104.4	149.1	150	137	471	161.1	175	148	481
									2EH04507525	56.3	2	156.3	174.9	200	197	471	186.9	200	208	481
	230-3-60	25.0	190	25.0	190	2.1	15.0	8.7	None	-	-	-	75.5	100	80	473	84.2	100	90	482
									2EH04502525	23.0	1	57.7	90.9	100	84	473	101.8	110	94	482
									2EH04505025	45.9	2	115.2	162.8	175	150	473	173.6	175	160	482
									2EH04507525	68.9	2	173.0	191.8	225	216	473	202.6	225	226	482
	460-3-60	12.2	100	12.2	100	1.0	7.5	4.3	None	-	-	-	37.0	45	39	250	41.3	50	44	254
									2EH04502546	23.0	1	28.9	45.5	50	42	250	50.9	60	47	254
									2EH04505046	45.9	2	57.6	81.4	90	75	250	86.8	90	80	254
									2EH04507546	68.9	2	86.5	95.9	110	108	250	101.3	110	113	254
	575-3-60	9.3	72	9.3	72	0.9	5.6	3.5	None	-	-	-	28.3	35	30	183	31.8	40	34	187
									2EH04502558	23.0	1	23.1	35.9	40	33	183	40.3	45	37	187
									2EH04505058	45.9	2	46.1	64.6	70	59	183	69.0	70	63	187
									2EH04507558	68.9	2	69.2	76.2	90	86	183	80.6	90	90	187
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	19.8	9.6	None	-	-	-	86.9	110	92	561	96.5	110	103	571
									2EH04502525	18.8	1	52.2	90.0	110	92	561	102.0	110	103	571
									2EH04505025	37.6	2	104.4	155.3	175	143	561	167.3	175	154	571
									2EH04507525	56.3	2	156.3	181.1	200	203	561	193.1	200	214	571
	230-3-60	27.6	191	28.2	240	2.1	19.8	8.7	None	-	-	-	86.9	110	92	561	95.6	110	102	570
									2EH04502525	23.0	1	57.7	96.9	110	92	561	107.8	110	102	570
									2EH04505025	45.9	2	115.2	168.8	175	155	561	179.6	200	165	570
									2EH04507525	68.9	2	173.0	197.8	225	222	561	208.6	225	232	570
	460-3-60	12.8	100	14.7	130	1.0	9.9	4.3	None	-	-	-	43.1	50	45	296	47.4	60	50	300
									2EH04502546	23.0	1	28.9	48.5	50	45	296	53.9	60	50	300
									2EH04505046	45.9	2	57.6	84.4	90	78	296	89.8	90	83	300
									2EH04507546	68.9	2	86.5	98.9	110	111	296	104.3	110	116	300
	575-3-60	9.6	78	11.3	94	0.9	7.9	3.5	None	-	-	-	33.4	40	35	227	36.9	45	39	230
									2EH04502558	23.0	1	23.1	38.8	40	36	227	43.1	45	40	230
									2EH04505058	45.9	2	46.1	67.5	70	62	227	71.9	80	66	230
									2EH04507558	68.9	2	69.2	79.1	90	89	227	83.5	90	93	230
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	25.4	9.6	None	-	-	-	105.3	125	111	657	114.9	125	122	667
									2EH04502525	18.8	1	52.2	105.3	125	111	657	114.9	125	122	667
									2EH04505025	37.6	2	104.4	162.3	175	149	657	174.3	175	160	667
									2EH04507525	56.3	2	156.3	188.1	200	209	657	200.1	225	220	667
	230-3-60	28.2	240	34.0	240	2.3	25.4	8.7	None	-	-	-	105.3	125	111	657	114.0	125	121	666
									2EH04502525	23.0	1	57.7	105.3	125	111	657	114.8	125	121	666
									2EH04505025	45.9	2	115.2	175.8	200	162	657	186.6	200	172	666
									2EH04507525	68.9	2	173.0	204.8	225	228	657	215.6	225	238	666
	460-3-60	14.7	130	16.0	140	1.3	12.7	4.3	None	-	-	-	52.6	60	56	360	56.9	70	61	364
									2EH04502546	23.0	1	28.9	52.0	60	56	360	57.4	70	61	364
									2EH04505046	45.9	2	57.6	87.9	90	81	360	93.3	100	86	364
									2EH04507546	68.9	2	86.5	102.4	110	114	360	107.8	110	119	364
	575-3-60	11.3	94	12.9	108	1.1	10.5	3.5	None	-	-	-	42.3	50	45	292	45.8	50	49	296
									2EH04502558	23.0	1	23.1	42.0	50	45	292	46.4	50	49	296
									2EH04505058	45.9	2	46.1	70.8	80	65	292	75.1	80	69	296
									2EH04507558	68.9	2	69.2	82.3	90	92	292	86.7	90	96	296

Table 21: AV15 to AV28 constant volume high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	25.4	9.6	None	-	-	-	126.9	150	134	785	136.5	175	145	795
									2EH04502525	18.8	1	52.2	126.9	150	134	785	136.5	175	145	795
									2EH04505025	37.6	2	104.4	162.3	175	149	785	174.3	175	160	795
									2EH04507525	56.3	2	156.3	188.1	200	209	785	200.1	225	220	795
	230-3-60	41.0	304	41.0	304	2.3	25.4	8.7	None	-	-	-	126.9	150	134	785	135.6	175	144	794
									2EH04502525	23.0	1	57.7	126.9	150	134	785	135.6	175	144	794
									2EH04505025	45.9	2	115.2	175.8	200	162	785	186.6	200	172	794
									2EH04507525	68.9	2	173.0	204.8	225	228	785	215.6	225	238	794
	460-3-60	19.2	147	19.2	147	1.3	12.7	4.3	None	-	-	-	61.1	80	65	384	65.4	80	70	388
									2EH04502546	23.0	1	28.9	52.0	80	65	384	57.4	80	70	388
									2EH04505046	45.9	2	57.6	87.9	90	81	384	93.3	100	86	388
									2EH04507546	68.9	2	86.5	102.4	110	114	384	107.8	110	119	388
	575-3-60	16.7	122	16.7	122	1.1	10.5	3.5	None	-	-	-	52.5	60	56	334	56.0	70	60	338
									2EH04502558	23.0	1	23.1	42.0	60	56	334	46.4	70	60	338
									2EH04505058	45.9	2	46.1	70.8	80	65	334	75.1	80	69	338
									2EH04507558	68.9	2	69.2	82.3	90	92	334	86.7	90	96	338
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	30.2	9.6	None	-	-	-	154.0	200	162	808	163.6	200	173	818
									2EH04502525	18.8	1	52.2	154.0	200	162	808	163.6	200	173	818
									2EH04505025	37.6	2	104.4	168.3	200	162	808	180.3	200	173	818
									2EH04507525	56.3	2	156.3	194.1	200	214	808	206.1	225	226	818
	230-3-60	51.3	300	51.3	300	2.1	30.2	8.7	None	-	-	-	154.0	200	162	808	162.7	200	172	817
									2EH04502525	23.0	1	57.7	154.0	200	162	808	162.7	200	172	817
									2EH04505025	45.9	2	115.2	181.8	200	167	808	192.6	200	177	817
									2EH04507525	68.9	2	173.0	210.8	225	234	808	221.6	225	244	817
	460-3-60	22.4	150	22.4	150	1.0	15.1	4.3	None	-	-	-	69.5	90	73	405	73.8	90	78	410
									2EH04502546	23.0	1	28.9	55.0	90	73	405	60.4	90	78	410
									2EH04505046	45.9	2	57.6	90.9	100	84	405	96.3	100	89	410
									2EH04507546	68.9	2	86.5	105.4	110	117	405	110.8	110	122	410
	575-3-60	19.9	109	19.9	109	0.9	12.0	3.5	None	-	-	-	60.4	80	64	296	63.9	80	68	300
									2EH04502558	23.0	1	23.1	43.9	80	64	296	48.3	80	68	300
									2EH04505058	45.9	2	46.1	72.6	80	67	296	77.0	80	71	300
									2EH04507558	68.9	2	69.2	84.2	90	93	296	88.6	90	97	300

Table 22: AV15 to AV28 constant volume high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	14.9	5.0	9.6	None	-	-	-	85.4	110	91	492	95.0	110	102	502
										2EH04502525	18.8	1	52.2	96.4	110	91	492	108.4	110	102	502
										2EH04505025	37.6	2	104.4	161.6	175	149	492	173.6	175	160	502
										2EH04507525	56.3	2	156.3	187.4	200	208	492	199.4	200	219	502
	230-3-60	25.0	190	25.0	190	2.1	15.0	5.0	8.7	None	-	-	-	85.5	110	91	494	94.2	110	101	503
										2EH04502525	23.0	1	57.7	103.4	110	95	494	114.3	125	105	503
										2EH04505025	45.9	2	115.2	175.3	200	161	494	186.1	200	171	503
										2EH04507525	68.9	2	173.0	204.3	225	228	494	215.1	225	238	503
	460-3-60	12.2	100	12.2	100	1.0	7.5	2.2	4.3	None	-	-	-	41.4	50	44	259	45.7	50	49	263
										2EH04502546	23.0	1	28.9	51.0	60	47	259	56.4	60	52	263
										2EH04505046	45.9	2	57.6	86.9	90	80	259	92.3	100	85	263
										2EH04507546	68.9	2	86.5	101.4	110	113	259	106.8	110	118	263
	575-3-60	9.3	72	9.3	72	0.9	5.6	1.5	3.5	None	-	-	-	31.3	40	33	190	34.8	40	37	193
										2EH04502558	23.0	1	23.1	39.6	40	36	190	44.0	45	40	193
										2EH04505058	45.9	2	46.1	68.4	70	63	190	72.8	80	67	193
										2EH04507558	68.9	2	69.2	80.0	90	89	190	84.3	90	93	193

Table 22: AV15 to AV28 constant volume high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	19.8	5.0	9.6	None	-	-	-	96.9	125	103	582	106.5	125	114	592
										2EH04502525	18.8	1	52.2	102.5	125	103	582	114.5	125	114	592
										2EH04505025	37.6	2	104.4	167.8	175	154	582	179.8	200	165	592
										2EH04507525	56.3	2	156.3	193.6	200	214	582	205.6	225	225	592
	230-3-60	27.6	191	28.2	240	2.1	19.8	5.0	8.7	None	-	-	-	96.9	125	103	582	105.6	125	113	591
										2EH04502525	23.0	1	57.7	109.4	125	103	582	120.3	125	113	591
										2EH04505025	45.9	2	115.2	181.3	200	167	582	192.1	200	177	591
										2EH04507525	68.9	2	173.0	210.3	225	233	582	221.1	225	243	591
	460-3-60	12.8	100	14.7	130	1.0	9.9	2.2	4.3	None	-	-	-	47.5	60	50	305	51.8	60	55	309
										2EH04502546	23.0	1	28.9	54.0	60	50	305	59.4	60	55	309
										2EH04505046	45.9	2	57.6	89.9	90	83	305	95.3	100	88	309
										2EH04507546	68.9	2	86.5	104.4	110	116	305	109.8	110	121	309
	575-3-60	9.6	78	11.3	94	0.9	7.9	1.5	3.5	None	-	-	-	36.4	45	39	233	39.9	50	43	237
										2EH04502558	23.0	1	23.1	42.5	45	39	233	46.9	50	43	237
										2EH04505058	45.9	2	46.1	71.3	80	66	233	75.6	80	70	237
										2EH04507558	68.9	2	69.2	82.8	90	92	233	87.2	90	96	237
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	25.4	5.0	9.6	None	-	-	-	115.3	125	123	678	124.9	150	134	688
										2EH04502525	18.8	1	52.2	115.3	125	123	678	124.9	150	134	688
										2EH04505025	37.6	2	104.4	174.8	175	161	678	186.8	200	172	688
										2EH04507525	56.3	2	156.3	200.6	225	220	678	212.6	225	231	688
	230-3-60	28.2	240	34.0	240	2.3	25.4	5.0	8.7	None	-	-	-	115.3	125	123	678	124.0	150	133	687
										2EH04502525	23.0	1	57.7	116.4	125	123	678	127.3	150	133	687
										2EH04505025	45.9	2	115.2	188.3	200	173	678	199.1	200	183	687
										2EH04507525	68.9	2	173.0	217.3	225	240	678	228.1	250	250	687
	460-3-60	14.7	130	16.0	140	1.3	12.7	2.2	4.3	None	-	-	-	57.0	70	61	369	61.3	70	66	373
										2EH04502546	23.0	1	28.9	57.5	70	56	369	62.9	70	61	373
										2EH04505046	45.9	2	57.6	93.4	100	86	369	98.8	100	91	373
										2EH04507546	68.9	2	86.5	107.9	110	119	369	113.3	125	124	373
	575-3-60	11.3	94	12.9	108	1.1	10.5	1.5	3.5	None	-	-	-	45.3	50	48	299	48.8	60	52	302
										2EH04502558	23.0	1	23.1	45.8	50	45	299	50.1	60	49	302
										2EH04505058	45.9	2	46.1	74.5	80	69	299	78.9	80	73	302
										2EH04507558	68.9	2	69.2	86.1	90	95	299	90.5	100	99	302
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	25.4	5.0	9.6	None	-	-	-	136.9	175	146	806	146.5	175	157	816
										2EH04502525	18.8	1	52.2	136.9	175	146	806	146.5	175	157	816
										2EH04505025	37.6	2	104.4	174.8	175	161	806	186.8	200	172	816
										2EH04507525	56.3	2	156.3	200.6	225	220	806	212.6	225	231	816
	230-3-60	41.0	304	41.0	304	2.3	25.4	5.0	8.7	None	-	-	-	136.9	175	146	806	145.6	175	156	815
										2EH04502525	23.0	1	57.7	136.9	175	146	806	145.6	175	156	815
										2EH04505025	45.9	2	115.2	188.3	200	173	806	199.1	200	183	815
										2EH04507525	68.9	2	173.0	217.3	225	240	806	228.1	250	250	815
	460-3-60	19.2	147	19.2	147	1.3	12.7	2.2	4.3	None	-	-	-	65.5	80	70	393	69.8	80	75	397
										2EH04502546	23.0	1	28.9	57.5	80	65	393	62.9	80	70	397
										2EH04505046	45.9	2	57.6	93.4	100	86	393	98.8	100	91	397
										2EH04507546	68.9	2	86.5	107.9	110	119	393	113.3	125	124	397
	575-3-60	16.7	122	16.7	122	1.1	10.5	1.5	3.5	None	-	-	-	55.5	70	59	341	59.0	70	63	344
										2EH04502558	23.0	1	23.1	45.8	70	56	341	50.1	70	60	344
										2EH04505058	45.9	2	46.1	74.5	80	69	341	78.9	80	73	344
										2EH04507558	68.9	2	69.2	86.1	90	95	341	90.5	100	99	344

Table 22: AV15 to AV28 constant volume high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	30.2	5.0	9.6	None	-	-	-	164.0	200	174	829	173.6	200	185	839
										2EH04502525	18.8	1	52.2	164.0	200	174	829	173.6	200	185	839
										2EH04505025	37.6	2	104.4	180.8	200	174	829	192.8	200	185	839
										2EH04507525	56.3	2	156.3	206.6	225	226	829	218.6	225	237	839
	230-3-60	51.3	300	51.3	300	2.1	30.2	5.0	8.7	None	-	-	-	164.0	200	174	829	172.7	200	184	838
										2EH04502525	23.0	1	57.7	164.0	200	174	829	172.7	200	184	838
										2EH04505025	45.9	2	115.2	194.3	200	179	829	205.1	225	189	838
										2EH04507525	68.9	2	173.0	223.3	250	245	829	234.1	250	255	838
	460-3-60	22.4	150	22.4	150	1.0	15.1	2.2	4.3	None	-	-	-	73.9	90	79	414	78.2	100	83	419
										2EH04502546	23.0	1	28.9	60.5	90	73	414	65.9	100	78	419
										2EH04505046	45.9	2	57.6	96.4	100	89	414	101.8	110	94	419
										2EH04507546	68.9	2	86.5	110.9	125	122	414	116.3	125	127	419
	575-3-60	19.9	109	19.9	109	0.9	12.0	1.5	3.5	None	-	-	-	63.4	80	67	303	66.9	80	71	306
										2EH04502558	23.0	1	23.1	47.6	80	64	303	52.0	80	68	306
										2EH04505058	45.9	2	46.1	76.4	80	70	303	80.8	90	74	306
										2EH04507558	68.9	2	69.2	88.0	90	97	303	92.3	100	101	306

Table 23: AV15 to AV28 constant volume high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	14.9	6.7	9.6	None	-	-	-	88.8	110	95	485	98.4	110	106	494
										2EH04502525	18.8	1	52.2	100.6	110	95	485	112.6	125	106	494
										2EH04505025	37.6	2	104.4	165.9	175	153	485	177.9	200	164	494
										2EH04507525	56.3	2	156.3	191.7	200	212	485	203.7	225	223	494
	230-3-60	25.0	190	25.0	190	2.1	15.0	6.7	8.7	None	-	-	-	88.9	110	95	486	97.6	110	105	495
										2EH04502525	23.0	1	57.7	107.6	110	99	486	118.5	125	109	495
										2EH04505025	45.9	2	115.2	179.5	200	165	486	190.4	200	175	495
										2EH04507525	68.9	2	173.0	208.5	225	232	486	219.4	225	242	495
	460-3-60	12.2	100	12.2	100	1.0	7.5	3.4	4.3	None	-	-	-	43.8	50	47	256	48.1	60	52	261
										2EH04502546	23.0	1	28.9	54.0	60	50	256	59.4	60	55	261
										2EH04505046	45.9	2	57.6	89.9	90	83	256	95.3	100	88	261
										2EH04507546	68.9	2	86.5	104.4	110	116	256	109.8	110	121	261
	575-3-60	9.3	72	9.3	72	0.9	5.6	2.7	3.5	None	-	-	-	33.7	40	36	189	37.2	45	40	192
										2EH04502558	23.0	1	23.1	42.6	45	39	189	47.0	50	43	192
										2EH04505058	45.9	2	46.1	71.4	80	66	189	75.8	80	70	192
										2EH04507558	68.9	2	69.2	83.0	90	92	189	87.3	90	96	192
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	19.8	6.7	9.6	None	-	-	-	100.3	125	107	574	109.9	125	118	584
										2EH04502525	18.8	1	52.2	106.8	125	107	574	118.8	125	118	584
										2EH04505025	37.6	2	104.4	172.0	175	158	574	184.0	200	169	584
										2EH04507525	56.3	2	156.3	197.8	200	218	574	209.8	225	229	584
	230-3-60	27.6	191	28.2	240	2.1	19.8	6.7	8.7	None	-	-	-	100.3	125	107	574	109.0	125	117	583
										2EH04502525	23.0	1	57.7	113.6	125	107	574	124.5	125	117	583
										2EH04505025	45.9	2	115.2	185.5	200	171	574	196.4	200	181	583
										2EH04507525	68.9	2	173.0	214.5	225	237	574	225.4	250	247	583
	460-3-60	12.8	100	14.7	130	1.0	9.9	3.4	4.3	None	-	-	-	49.9	60	53	302	54.2	60	58	307
										2EH04502546	23.0	1	28.9	57.0	60	53	302	62.4	70	58	307
										2EH04505046	45.9	2	57.6	92.9	100	85	302	98.3	100	90	307
										2EH04507546	68.9	2	86.5	107.4	110	119	302	112.8	125	124	307
	575-3-60	9.6	78	11.3	94	0.9	7.9	2.7	3.5	None	-	-	-	38.8	50	41	232	42.3	50	45	236
										2EH04502558	23.0	1	23.1	45.5	50	42	232	49.9	50	46	236
										2EH04505058	45.9	2	46.1	74.3	80	68	232	78.6	80	72	236
										2EH04507558	68.9	2	69.2	85.8	90	95	232	90.2	100	99	236

Table 23: AV15 to AV28 constant volume high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	25.4	6.7	9.6	None	-	-	-	118.7	150	127	671	128.3	150	138	680
										2EH04502525	18.8	1	52.2	118.7	150	127	671	128.3	150	138	680
										2EH04505025	37.6	2	104.4	179.0	200	165	671	191.0	200	176	680
										2EH04507525	56.3	2	156.3	204.8	225	224	671	216.8	225	235	680
	230-3-60	28.2	240	34.0	240	2.3	25.4	6.7	8.7	None	-	-	-	118.7	150	127	671	127.4	150	137	679
										2EH04502525	23.0	1	57.7	120.6	150	127	671	131.5	150	137	679
										2EH04505025	45.9	2	115.2	192.5	200	177	671	203.4	225	187	679
										2EH04507525	68.9	2	173.0	221.5	225	244	671	232.4	250	254	679
	460-3-60	14.7	130	16.0	140	1.3	12.7	3.4	4.3	None	-	-	-	59.4	70	64	367	63.7	70	69	371
										2EH04502546	23.0	1	28.9	60.5	70	64	367	65.9	70	69	371
										2EH04505046	45.9	2	57.6	96.4	100	89	367	101.8	110	94	371
										2EH04507546	68.9	2	86.5	110.9	125	122	367	116.3	125	127	371
	575-3-60	11.3	94	12.9	108	1.1	10.5	2.7	3.5	None	-	-	-	47.7	60	51	298	51.2	60	55	301
										2EH04502558	23.0	1	23.1	48.8	60	51	298	53.1	60	55	301
										2EH04505058	45.9	2	46.1	77.5	80	71	298	81.9	90	75	301
										2EH04507558	68.9	2	69.2	89.1	90	98	298	93.5	100	102	301
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	25.4	6.7	9.6	None	-	-	-	140.3	175	150	799	149.9	175	161	808
										2EH04502525	18.8	1	52.2	140.3	175	150	799	149.9	175	161	808
										2EH04505025	37.6	2	104.4	179.0	200	165	799	191.0	200	176	808
										2EH04507525	56.3	2	156.3	204.8	225	224	799	216.8	225	235	808
	230-3-60	41.0	304	41.0	304	2.3	25.4	6.7	8.7	None	-	-	-	140.3	175	150	799	149.0	175	160	807
										2EH04502525	23.0	1	57.7	140.3	175	150	799	149.0	175	160	807
										2EH04505025	45.9	2	115.2	192.5	200	177	799	203.4	225	187	807
										2EH04507525	68.9	2	173.0	221.5	225	244	799	232.4	250	254	807
	460-3-60	19.2	147	19.2	147	1.3	12.7	3.4	4.3	None	-	-	-	67.9	80	73	391	72.2	90	78	395
										2EH04502546	23.0	1	28.9	60.5	80	73	391	65.9	90	78	395
										2EH04505046	45.9	2	57.6	96.4	100	89	391	101.8	110	94	395
										2EH04507546	68.9	2	86.5	110.9	125	122	391	116.3	125	127	395
	575-3-60	16.7	122	16.7	122	1.1	10.5	2.7	3.5	None	-	-	-	57.9	70	62	340	61.4	70	66	343
										2EH04502558	23.0	1	23.1	48.8	70	62	340	53.1	70	66	343
										2EH04505058	45.9	2	46.1	77.5	80	71	340	81.9	90	75	343
										2EH04507558	68.9	2	69.2	89.1	90	98	340	93.5	100	102	343
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	30.2	6.7	9.6	None	-	-	-	167.4	200	178	821	177.0	225	189	831
										2EH04502525	18.8	1	52.2	167.4	200	178	821	177.0	225	189	831
										2EH04505025	37.6	2	104.4	185.0	200	178	821	197.0	225	189	831
										2EH04507525	56.3	2	156.3	210.8	225	230	821	222.8	225	241	831
	230-3-60	51.3	300	51.3	300	2.1	30.2	6.7	8.7	None	-	-	-	167.4	200	178	821	176.1	225	188	830
										2EH04502525	23.0	1	57.7	167.4	200	178	821	176.1	225	188	830
										2EH04505025	45.9	2	115.2	198.5	200	183	821	209.4	225	193	830
										2EH04507525	68.9	2	173.0	227.5	250	249	821	238.4	250	259	830
	460-3-60	22.4	150	22.4	150	1.0	15.1	3.4	4.3	None	-	-	-	76.3	90	81	412	80.6	100	86	416
										2EH04502546	23.0	1	28.9	63.5	90	81	412	68.9	100	86	416
										2EH04505046	45.9	2	57.6	99.4	100	91	412	104.8	110	96	416
										2EH04507546	68.9	2	86.5	113.9	125	125	412	119.3	125	130	416
	575-3-60	19.9	109	19.9	109	0.9	12.0	2.7	3.5	None	-	-	-	65.8	80	70	302	69.3	80	74	305
										2EH04502558	23.0	1	23.1	50.6	80	70	302	55.0	80	74	305
										2EH04505058	45.9	2	46.1	79.4	80	73	302	83.8	90	77	305
										2EH04507558	68.9	2	69.2	91.0	100	100	302	95.3	100	104	305

VFD 2 stage standard static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 24: AV15 to AV28 VFD 2 stage standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	13.2	9.6	None	-	-	-	73.7	90	78	452	83.3	100	89	461
									2EH04502525	18.8	1	52.2	81.8	90	78	452	93.8	100	89	461
									2EH04505025	37.6	2	104.4	147.0	150	135	452	159.0	175	146	461
									2EH04507525	56.3	2	156.3	172.8	200	195	452	184.8	200	206	461
	230-3-60	25.0	190	25.0	190	2.1	13.2	8.7	None	-	-	-	73.7	90	78	459	82.4	100	88	468
									2EH04502525	23.0	1	57.7	88.6	90	82	459	99.5	100	92	468
									2EH04505025	45.9	2	115.2	160.5	175	148	459	171.4	175	158	468
									2EH04507525	68.9	2	173.0	189.5	225	214	459	200.4	225	224	468
	460-3-60	12.2	100	12.2	100	1.0	6.1	4.3	None	-	-	-	35.6	45	37	240	39.9	50	42	244
									2EH04502546	23.0	1	28.9	43.8	45	40	240	49.1	50	45	244
									2EH04505046	45.9	2	57.6	79.6	80	73	240	85.0	90	78	244
									2EH04507546	68.9	2	86.5	94.1	110	106	240	99.5	110	111	244
	575-3-60	9.3	72	9.3	72	0.9	5.9	3.5	None	-	-	-	28.6	35	30	174	32.1	40	34	178
									2EH04502558	23.0	1	23.1	36.3	40	33	174	40.6	45	37	178
									2EH04505058	45.9	2	46.1	65.0	70	60	174	69.4	70	64	178
									2EH04507558	68.9	2	69.2	76.6	90	86	174	81.0	90	90	178
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	13.2	9.6	None	-	-	-	80.3	100	84	514	89.9	110	95	523
									2EH04502525	18.8	1	52.2	81.8	100	84	514	93.8	110	95	523
									2EH04505025	37.6	2	104.4	147.0	150	135	514	159.0	175	146	523
									2EH04507525	56.3	2	156.3	172.8	200	195	514	184.8	200	206	523
	230-3-60	27.6	191	28.2	240	2.1	13.2	8.7	None	-	-	-	80.3	100	84	522	89.0	110	94	530
									2EH04502525	23.0	1	57.7	88.6	100	84	522	99.5	110	94	530
									2EH04505025	45.9	2	115.2	160.5	175	148	522	171.4	175	158	530
									2EH04507525	68.9	2	173.0	189.5	225	214	522	200.4	225	224	530
	460-3-60	12.8	100	14.7	130	1.0	6.1	4.3	None	-	-	-	39.3	50	41	276	43.6	50	46	280
									2EH04502546	23.0	1	28.9	43.8	50	41	276	49.1	50	46	280
									2EH04505046	45.9	2	57.6	79.6	80	73	276	85.0	90	78	280
									2EH04507546	68.9	2	86.5	94.1	110	106	276	99.5	110	111	280
	575-3-60	9.6	78	11.3	94	0.9	7.0	3.5	None	-	-	-	32.5	40	34	216	36.0	45	38	220
									2EH04502558	23.0	1	23.1	37.6	40	35	216	42.0	45	39	220
									2EH04505058	45.9	2	46.1	66.4	70	61	216	70.8	80	65	220
									2EH04507558	68.9	2	69.2	78.0	90	88	216	82.3	90	92	220
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	20.4	9.6	None	-	-	-	100.3	125	106	602	109.9	125	117	612
									2EH04502525	18.8	1	52.2	100.3	125	106	602	109.9	125	117	612
									2EH04505025	37.6	2	104.4	156.0	175	144	602	168.0	175	155	612
									2EH04507525	56.3	2	156.3	181.8	200	203	602	193.8	200	214	612
	230-3-60	28.2	240	34.0	240	2.3	20.4	8.7	None	-	-	-	100.3	125	106	601	109.0	125	116	610
									2EH04502525	23.0	1	57.7	100.3	125	106	601	109.0	125	116	610
									2EH04505025	45.9	2	115.2	169.5	175	156	601	180.4	200	166	610
									2EH04507525	68.9	2	173.0	198.5	225	222	601	209.4	225	232	610
	460-3-60	14.7	130	16.0	140	1.3	9.9	4.3	None	-	-	-	49.8	60	53	332	54.1	70	58	336
									2EH04502546	23.0	1	28.9	48.5	60	53	332	53.9	70	58	336
									2EH04505046	45.9	2	57.6	84.4	90	78	332	89.8	90	83	336
									2EH04507546	68.9	2	86.5	98.9	110	111	332	104.3	110	116	336
	575-3-60	11.3	94	12.9	108	1.1	7.0	3.5	None	-	-	-	38.8	50	41	251	42.3	50	45	254
									2EH04502558	23.0	1	23.1	37.6	50	41	251	42.0	50	45	254
									2EH04505058	45.9	2	46.1	66.4	70	61	251	70.8	80	65	254
									2EH04507558	68.9	2	69.2	78.0	90	88	251	82.3	90	92	254

Table 24: AV15 to AV28 VFD 2 stage standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	20.4	9.6	None	-	-	-	121.9	150	128	730	131.5	150	139	740
									2EH04502525	18.8	1	52.2	121.9	150	128	730	131.5	150	139	740
									2EH04505025	37.6	2	104.4	156.0	175	144	730	168.0	175	155	740
									2EH04507525	56.3	2	156.3	181.8	200	203	730	193.8	200	214	740
	230-3-60	41.0	304	41.0	304	2.3	20.4	8.7	None	-	-	-	121.9	150	128	729	130.6	150	138	738
									2EH04502525	23.0	1	57.7	121.9	150	128	729	130.6	150	138	738
									2EH04505025	45.9	2	115.2	169.5	175	156	729	180.4	200	166	738
									2EH04507525	68.9	2	173.0	198.5	225	222	729	209.4	225	232	738
	460-3-60	19.2	147	19.2	147	1.3	9.9	4.3	None	-	-	-	58.3	70	62	356	62.6	80	66	360
									2EH04502546	23.0	1	28.9	48.5	70	62	356	53.9	80	66	360
									2EH04505046	45.9	2	57.6	84.4	90	78	356	89.8	90	83	360
									2EH04507546	68.9	2	86.5	98.9	110	111	356	104.3	110	116	360
	575-3-60	16.7	122	16.7	122	1.1	7.0	3.5	None	-	-	-	49.0	60	52	293	52.5	60	56	296
									2EH04502558	23.0	1	23.1	37.6	60	52	293	42.0	60	56	296
									2EH04505058	45.9	2	46.1	66.4	70	61	293	70.8	80	65	296
									2EH04507558	68.9	2	69.2	78.0	90	88	293	82.3	90	92	296
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	30.0	9.6	None	-	-	-	153.8	200	162	740	163.4	200	173	750
									2EH04502525	18.8	1	52.2	153.8	200	162	740	163.4	200	173	750
									2EH04505025	37.6	2	104.4	168.0	200	162	740	180.0	200	173	750
									2EH04507525	56.3	2	156.3	193.8	200	214	740	205.8	225	225	750
	230-3-60	51.3	300	51.3	300	2.1	30.0	8.7	None	-	-	-	153.8	200	162	740	162.5	200	172	749
									2EH04502525	23.0	1	57.7	153.8	200	162	740	162.5	200	172	749
									2EH04505025	45.9	2	115.2	181.5	200	167	740	192.4	200	177	749
									2EH04507525	68.9	2	173.0	210.5	225	233	740	221.4	225	243	749
	460-3-60	22.4	150	22.4	150	1.0	14.3	4.3	None	-	-	-	68.7	90	73	371	73.0	90	78	376
									2EH04502546	23.0	1	28.9	54.0	90	73	371	59.4	90	78	376
									2EH04505046	45.9	2	57.6	89.9	90	83	371	95.3	100	88	376
									2EH04507546	68.9	2	86.5	104.4	110	116	371	109.8	110	121	376
	575-3-60	19.9	109	19.9	109	0.9	10.5	3.5	None	-	-	-	58.9	70	62	277	62.4	80	66	280
									2EH04502558	23.0	1	23.1	42.0	70	62	277	46.4	80	66	280
									2EH04505058	45.9	2	46.1	70.8	80	65	277	75.1	80	69	280
									2EH04507558	68.9	2	69.2	82.3	90	92	277	86.7	90	96	280

Table 25: AV15 to AV28 VFD 2 stage standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	13.2	5.0	9.6	None	-	-	-	83.7	100	89	473	93.3	110	100	482
										2EH04502525	18.8	1	52.2	94.3	100	89	473	106.3	110	100	482
										2EH04505025	37.6	2	104.4	159.5	175	147	473	171.5	175	158	482
										2EH04507525	56.3	2	156.3	185.3	200	206	473	197.3	200	217	482
	230-3-60	25.0	190	25.0	190	2.1	13.2	5.0	8.7	None	-	-	-	83.7	100	89	480	92.4	110	99	489
										2EH04502525	23.0	1	57.7	101.1	110	93	480	112.0	125	103	489
										2EH04505025	45.9	2	115.2	173.0	175	159	480	183.9	200	169	489
										2EH04507525	68.9	2	173.0	202.0	225	226	480	212.9	225	236	489
	460-3-60	12.2	100	12.2	100	1.0	6.1	2.2	4.3	None	-	-	-	40.0	50	42	249	44.3	50	47	254
										2EH04502546	23.0	1	28.9	49.3	50	45	249	54.6	60	50	254
										2EH04505046	45.9	2	57.6	85.1	90	78	249	90.5	100	83	254
										2EH04507546	68.9	2	86.5	99.6	110	112	249	105.0	110	116	254
	575-3-60	9.3	72	9.3	72	0.9	5.9	1.5	3.5	None	-	-	-	31.6	40	34	181	35.1	40	38	184
										2EH04502558	23.0	1	23.1	40.0	45	37	181	44.4	45	41	184
										2EH04505058	45.9	2	46.1	68.8	70	63	181	73.1	80	67	184
										2EH04507558	68.9	2	69.2	80.3	90	90	181	84.7	90	94	184

Table 25: AV15 to AV28 VFD 2 stage standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	13.2	5.0	9.6	None	-	-	-	90.3	110	96	535	99.9	125	107	544
										2EH04502525	18.8	1	52.2	94.3	110	96	535	106.3	125	107	544
										2EH04505025	37.6	2	104.4	159.5	175	147	535	171.5	175	158	544
										2EH04507525	56.3	2	156.3	185.3	200	206	535	197.3	200	217	544
	230-3-60	27.6	191	28.2	240	2.1	13.2	5.0	8.7	None	-	-	-	90.3	110	96	543	99.0	125	106	551
										2EH04502525	23.0	1	57.7	101.1	110	96	543	112.0	125	106	551
										2EH04505025	45.9	2	115.2	173.0	175	159	543	183.9	200	169	551
										2EH04507525	68.9	2	173.0	202.0	225	226	543	212.9	225	236	551
	460-3-60	12.8	100	14.7	130	1.0	6.1	2.2	4.3	None	-	-	-	43.7	50	46	285	48.0	60	51	289
										2EH04502546	23.0	1	28.9	49.3	50	45	285	54.6	60	50	289
										2EH04505046	45.9	2	57.6	85.1	90	78	285	90.5	100	83	289
										2EH04507546	68.9	2	86.5	99.6	110	112	285	105.0	110	116	289
	575-3-60	9.6	78	11.3	94	0.9	7.0	1.5	3.5	None	-	-	-	35.5	45	38	222	39.0	50	42	226
										2EH04502558	23.0	1	23.1	41.4	45	38	222	45.8	50	42	226
										2EH04505058	45.9	2	46.1	70.1	80	65	222	74.5	80	69	226
										2EH04507558	68.9	2	69.2	81.7	90	91	222	86.1	90	95	226
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	20.4	5.0	9.6	None	-	-	-	110.3	125	117	623	119.9	150	128	633
										2EH04502525	18.8	1	52.2	110.3	125	117	623	119.9	150	128	633
										2EH04505025	37.6	2	104.4	168.5	175	155	623	180.5	200	166	633
										2EH04507525	56.3	2	156.3	194.3	200	215	623	206.3	225	226	633
	230-3-60	28.2	240	34.0	240	2.3	20.4	5.0	8.7	None	-	-	-	110.3	125	117	622	119.0	150	127	631
										2EH04502525	23.0	1	57.7	110.3	125	117	622	121.0	150	127	631
										2EH04505025	45.9	2	115.2	182.0	200	167	622	192.9	200	177	631
										2EH04507525	68.9	2	173.0	211.0	225	234	622	221.9	225	244	631
	460-3-60	14.7	130	16.0	140	1.3	9.9	2.2	4.3	None	-	-	-	54.2	70	58	341	58.5	70	63	345
										2EH04502546	23.0	1	28.9	54.0	70	53	341	59.4	70	58	345
										2EH04505046	45.9	2	57.6	89.9	90	83	341	95.3	100	88	345
										2EH04507546	68.9	2	86.5	104.4	110	116	341	109.8	110	121	345
	575-3-60	11.3	94	12.9	108	1.1	7.0	1.5	3.5	None	-	-	-	41.8	50	44	257	45.3	50	48	261
										2EH04502558	23.0	1	23.1	41.4	50	41	257	45.8	50	45	261
										2EH04505058	45.9	2	46.1	70.1	80	65	257	74.5	80	69	261
										2EH04507558	68.9	2	69.2	81.7	90	91	257	86.1	90	95	261
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	20.4	5.0	9.6	None	-	-	-	131.9	150	140	751	141.5	175	151	761
										2EH04502525	18.8	1	52.2	131.9	150	140	751	141.5	175	151	761
										2EH04505025	37.6	2	104.4	168.5	175	155	751	180.5	200	166	761
										2EH04507525	56.3	2	156.3	194.3	200	215	751	206.3	225	226	761
	230-3-60	41.0	304	41.0	304	2.3	20.4	5.0	8.7	None	-	-	-	131.9	150	140	750	140.6	175	150	759
										2EH04502525	23.0	1	57.7	131.9	150	140	750	140.6	175	150	759
										2EH04505025	45.9	2	115.2	182.0	200	167	750	192.9	200	177	759
										2EH04507525	68.9	2	173.0	211.0	225	234	750	221.9	225	244	759
	460-3-60	19.2	147	19.2	147	1.3	9.9	2.2	4.3	None	-	-	-	62.7	80	67	365	67.0	80	72	369
										2EH04502546	23.0	1	28.9	54.0	80	62	365	59.4	80	66	369
										2EH04505046	45.9	2	57.6	89.9	90	83	365	95.3	100	88	369
										2EH04507546	68.9	2	86.5	104.4	110	116	365	109.8	110	121	369
	575-3-60	16.7	122	16.7	122	1.1	7.0	1.5	3.5	None	-	-	-	52.0	60	55	299	55.5	70	59	303
										2EH04502558	23.0	1	23.1	41.4	60	52	299	45.8	70	56	303
										2EH04505058	45.9	2	46.1	70.1	80	65	299	74.5	80	69	303
										2EH04507558	68.9	2	69.2	81.7	90	91	299	86.1	90	95	303

Table 25: AV15 to AV28 VFD 2 stage standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	30.0	5.0	9.6	None	-	-	-	163.8	200	174	761	173.4	200	185	771
										2EH04502525	18.8	1	52.2	163.8	200	174	761	173.4	200	185	771
										2EH04505025	37.6	2	104.4	180.5	200	174	761	192.5	200	185	771
										2EH04507525	56.3	2	156.3	206.3	225	226	761	218.3	225	237	771
	230-3-60	51.3	300	51.3	300	2.1	30.0	5.0	8.7	None	-	-	-	163.8	200	174	761	172.5	200	184	770
										2EH04502525	23.0	1	57.7	163.8	200	174	761	172.5	200	184	770
										2EH04505025	45.9	2	115.2	194.0	200	178	761	204.9	225	188	770
										2EH04507525	68.9	2	173.0	223.0	250	245	761	233.9	250	255	770
	460-3-60	22.4	150	22.4	150	1.0	14.3	2.2	4.3	None	-	-	-	73.1	90	78	380	77.4	90	83	385
										2EH04502546	23.0	1	28.9	59.5	90	73	380	64.9	90	78	385
										2EH04505046	45.9	2	57.6	95.4	100	88	380	100.8	110	93	385
										2EH04507546	68.9	2	86.5	109.9	110	121	380	115.3	125	126	385
	575-3-60	19.9	109	19.9	109	0.9	10.5	1.5	3.5	None	-	-	-	61.9	80	65	283	65.4	80	69	287
										2EH04502558	23.0	1	23.1	45.8	80	62	283	50.1	80	66	287
										2EH04505058	45.9	2	46.1	74.5	80	69	283	78.9	80	73	287
										2EH04507558	68.9	2	69.2	86.1	90	95	283	90.5	100	99	287

Table 26: AV15 to AV28 VFD 2 stage standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors (each) FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	13.2	6.7	9.6	None	-	-	-	87.1	110	93	465	96.7	110	104	475
										2EH04502525	18.8	1	52.2	98.5	110	93	465	110.5	125	104	475
										2EH04505025	37.6	2	104.4	163.8	175	151	465	175.8	200	162	475
										2EH04507525	56.3	2	156.3	189.6	200	210	465	201.6	225	221	475
	230-3-60	25.0	190	25.0	190	2.1	13.2	6.7	8.7	None	-	-	-	87.1	110	93	472	95.8	110	103	481
										2EH04502525	23.0	1	57.7	105.4	110	97	472	116.3	125	107	481
										2EH04505025	45.9	2	115.2	177.3	200	163	472	188.1	200	173	481
										2EH04507525	68.9	2	173.0	206.3	225	230	472	217.1	225	240	481
	460-3-60	12.2	100	12.2	100	1.0	6.1	3.4	4.3	None	-	-	-	42.4	50	45	247	46.7	50	50	251
										2EH04502546	23.0	1	28.9	52.3	60	48	247	57.6	60	53	251
										2EH04505046	45.9	2	57.6	88.1	90	81	247	93.5	100	86	251
										2EH04507546	68.9	2	86.5	102.6	110	114	247	108.0	110	119	251
	575-3-60	9.3	72	9.3	72	0.9	5.9	2.7	3.5	None	-	-	-	34.0	40	36	180	37.5	45	40	183
										2EH04502558	23.0	1	23.1	43.0	45	40	180	47.4	50	44	183
										2EH04505058	45.9	2	46.1	71.8	80	66	180	76.1	80	70	183
										2EH04507558	68.9	2	69.2	83.3	90	93	180	87.7	90	97	183
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	13.2	6.7	9.6	None	-	-	-	93.7	110	100	527	103.3	125	111	537
										2EH04502525	18.8	1	52.2	98.5	110	100	527	110.5	125	111	537
										2EH04505025	37.6	2	104.4	163.8	175	151	527	175.8	200	162	537
										2EH04507525	56.3	2	156.3	189.6	200	210	527	201.6	225	221	537
	230-3-60	27.6	191	28.2	240	2.1	13.2	6.7	8.7	None	-	-	-	93.7	110	100	535	102.4	125	110	544
										2EH04502525	23.0	1	57.7	105.4	110	100	535	116.3	125	110	544
										2EH04505025	45.9	2	115.2	177.3	200	163	535	188.1	200	173	544
										2EH04507525	68.9	2	173.0	206.3	225	230	535	217.1	225	240	544
	460-3-60	12.8	100	14.7	130	1.0	6.1	3.4	4.3	None	-	-	-	46.1	60	49	283	50.4	60	54	287
										2EH04502546	23.0	1	28.9	52.3	60	49	283	57.6	60	54	287
										2EH04505046	45.9	2	57.6	88.1	90	81	283	93.5	100	86	287
										2EH04507546	68.9	2	86.5	102.6	110	114	283	108.0	110	119	287
	575-3-60	9.6	78	11.3	94	0.9	7.0	2.7	3.5	None	-	-	-	37.9	45	40	221	41.4	50	44	225
										2EH04502558	23.0	1	23.1	44.4	45	41	221	48.8	50	45	225
										2EH04505058	45.9	2	46.1	73.1	80	67	221	77.5	80	71	225
										2EH04507558	68.9	2	69.2	84.7	90	94	221	89.1	90	98	225

Table 26: AV15 to AV28 VFD 2 stage standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors (each) FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	20.4	6.7	9.6	None	-	-	-	113.7	125	121	615	123.3	150	132	625
										2EH04502525	18.8	1	52.2	113.7	125	121	615	123.3	150	132	625
										2EH04505025	37.6	2	104.4	172.8	175	159	615	184.8	200	170	625
										2EH04507525	56.3	2	156.3	198.6	200	219	615	210.6	225	230	625
	230-3-60	28.2	240	34.0	240	2.3	20.4	6.7	8.7	None	-	-	-	113.7	125	121	615	122.4	150	131	623
										2EH04502525	23.0	1	57.7	114.4	125	121	615	125.3	150	131	623
										2EH04505025	45.9	2	115.2	186.3	200	171	615	197.1	200	181	623
										2EH04507525	68.9	2	173.0	215.3	225	238	615	226.1	250	248	623
	460-3-60	14.7	130	16.0	140	1.3	9.9	3.4	4.3	None	-	-	-	56.6	70	60	339	60.9	70	65	343
										2EH04502546	23.0	1	28.9	57.0	70	60	339	62.4	70	65	343
										2EH04505046	45.9	2	57.6	92.9	100	85	339	98.3	100	90	343
										2EH04507546	68.9	2	86.5	107.4	110	119	339	112.8	125	124	343
	575-3-60	11.3	94	12.9	108	1.1	7.0	2.7	3.5	None	-	-	-	44.2	50	47	256	47.7	60	51	260
										2EH04502558	23.0	1	23.1	44.4	50	47	256	48.8	60	51	260
										2EH04505058	45.9	2	46.1	73.1	80	67	256	77.5	80	71	260
										2EH04507558	68.9	2	69.2	84.7	90	94	256	89.1	90	98	260
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	20.4	6.7	9.6	None	-	-	-	135.3	175	144	743	144.9	175	155	753
										2EH04502525	18.8	1	52.2	135.3	175	144	743	144.9	175	155	753
										2EH04505025	37.6	2	104.4	172.8	175	159	743	184.8	200	170	753
										2EH04507525	56.3	2	156.3	198.6	200	219	743	210.6	225	230	753
	230-3-60	41.0	304	41.0	304	2.3	20.4	6.7	8.7	None	-	-	-	135.3	175	144	743	144.0	175	154	751
										2EH04502525	23.0	1	57.7	135.3	175	144	743	144.0	175	154	751
										2EH04505025	45.9	2	115.2	186.3	200	171	743	197.1	200	181	751
										2EH04507525	68.9	2	173.0	215.3	225	238	743	226.1	250	248	751
	460-3-60	19.2	147	19.2	147	1.3	9.9	3.4	4.3	None	-	-	-	65.1	80	69	363	69.4	80	74	367
										2EH04502546	23.0	1	28.9	57.0	80	69	363	62.4	80	74	367
										2EH04505046	45.9	2	57.6	92.9	100	85	363	98.3	100	90	367
										2EH04507546	68.9	2	86.5	107.4	110	119	363	112.8	125	124	367
	575-3-60	16.7	122	16.7	122	1.1	7.0	2.7	3.5	None	-	-	-	54.4	70	58	298	57.9	70	62	302
										2EH04502558	23.0	1	23.1	44.4	70	58	298	48.8	70	62	302
										2EH04505058	45.9	2	46.1	73.1	80	67	298	77.5	80	71	302
										2EH04507558	68.9	2	69.2	84.7	90	94	298	89.1	90	98	302
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	30.0	6.7	9.6	None	-	-	-	167.2	200	178	753	176.8	225	189	763
										2EH04502525	18.8	1	52.2	167.2	200	178	753	176.8	225	189	763
										2EH04505025	37.6	2	104.4	184.8	200	178	753	196.8	225	189	763
										2EH04507525	56.3	2	156.3	210.6	225	230	753	222.6	225	241	763
	230-3-60	51.3	300	51.3	300	2.1	30.0	6.7	8.7	None	-	-	-	167.2	200	178	753	175.9	225	188	762
										2EH04502525	23.0	1	57.7	167.2	200	178	753	175.9	225	188	762
										2EH04505025	45.9	2	115.2	198.3	200	182	753	209.1	225	192	762
										2EH04507525	68.9	2	173.0	227.3	250	249	753	238.1	250	259	762
	460-3-60	22.4	150	22.4	150	1.0	14.3	3.4	4.3	None	-	-	-	75.5	90	80	378	79.8	100	85	382
										2EH04502546	23.0	1	28.9	62.5	90	80	378	67.9	100	85	382
										2EH04505046	45.9	2	57.6	98.4	100	91	378	103.8	110	95	382
										2EH04507546	68.9	2	86.5	112.9	125	124	378	118.3	125	129	382
	575-3-60	19.9	109	19.9	109	0.9	10.5	2.7	3.5	None	-	-	-	64.3	80	68	282	67.8	80	72	286
										2EH04502558	23.0	1	23.1	48.8	80	68	282	53.1	80	72	286
										2EH04505058	45.9	2	46.1	77.5	80	71	282	81.9	90	75	286
										2EH04507558	68.9	2	69.2	89.1	90	98	282	93.5	100	102	286

VFD 2 stage medium static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 27: AV15 to AV28 VFD 2 stage medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	13.2	9.6	None	-	-	-	73.7	90	78	463	83.3	100	89	472
									2EH04502525	18.8	1	52.2	81.8	90	78	463	93.8	100	89	472
									2EH04505025	37.6	2	104.4	147.0	150	135	463	159.0	175	146	472
									2EH04507525	56.3	2	156.3	172.8	200	195	463	184.8	200	206	472
	230-3-60	25.0	190	25.0	190	2.1	13.2	8.7	None	-	-	-	73.7	90	78	471	82.4	100	88	479
									2EH04502525	23.0	1	57.7	88.6	90	82	471	99.5	100	92	479
									2EH04505025	45.9	2	115.2	160.5	175	148	471	171.4	175	158	479
									2EH04507525	68.9	2	173.0	189.5	225	214	471	200.4	225	224	479
	460-3-60	12.2	100	12.2	100	1.0	6.1	4.3	None	-	-	-	35.6	45	37	246	39.9	50	42	250
									2EH04502546	23.0	1	28.9	43.8	45	40	246	49.1	50	45	250
									2EH04505046	45.9	2	57.6	79.6	80	73	246	85.0	90	78	250
									2EH04507546	68.9	2	86.5	94.1	110	106	246	99.5	110	111	250
	575-3-60	9.3	72	9.3	72	0.9	7.0	3.5	None	-	-	-	29.7	35	32	188	33.2	40	36	192
									2EH04502558	23.0	1	23.1	37.6	40	35	188	42.0	45	39	192
									2EH04505058	45.9	2	46.1	66.4	70	61	188	70.8	80	65	192
									2EH04507558	68.9	2	69.2	78.0	90	88	188	82.3	90	92	192
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	20.4	9.6	None	-	-	-	87.5	110	92	544	97.1	125	104	553
									2EH04502525	18.8	1	52.2	90.8	110	92	544	102.8	125	104	553
									2EH04505025	37.6	2	104.4	156.0	175	144	544	168.0	175	155	553
									2EH04507525	56.3	2	156.3	181.8	200	203	544	193.8	200	214	553
	230-3-60	27.6	191	28.2	240	2.1	20.4	8.7	None	-	-	-	87.5	110	92	543	96.2	110	102	552
									2EH04502525	23.0	1	57.7	97.6	110	92	543	108.5	110	102	552
									2EH04505025	45.9	2	115.2	169.5	175	156	543	180.4	200	166	552
									2EH04507525	68.9	2	173.0	198.5	225	222	543	209.4	225	232	552
	460-3-60	12.8	100	14.7	130	1.0	9.9	4.3	None	-	-	-	43.1	50	45	287	47.4	60	50	291
									2EH04502546	23.0	1	28.9	48.5	50	45	287	53.9	60	50	291
									2EH04505046	45.9	2	57.6	84.4	90	78	287	89.8	90	83	291
									2EH04507546	68.9	2	86.5	98.9	110	111	287	104.3	110	116	291
	575-3-60	9.6	78	11.3	94	0.9	7.0	3.5	None	-	-	-	32.5	40	34	216	36.0	45	38	220
									2EH04502558	23.0	1	23.1	37.6	40	35	216	42.0	45	39	220
									2EH04505058	45.9	2	46.1	66.4	70	61	216	70.8	80	65	220
									2EH04507558	68.9	2	69.2	78.0	90	88	216	82.3	90	92	220
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	30.0	9.6	None	-	-	-	109.9	125	117	619	119.5	150	128	629
									2EH04502525	18.8	1	52.2	109.9	125	117	619	119.5	150	128	629
									2EH04505025	37.6	2	104.4	168.0	175	155	619	180.0	200	166	629
									2EH04507525	56.3	2	156.3	193.8	200	214	619	205.8	225	225	629
	230-3-60	28.2	240	34.0	240	2.3	30.0	8.7	None	-	-	-	109.9	125	117	619	118.6	150	127	628
									2EH04502525	23.0	1	57.7	109.9	125	117	619	120.5	150	127	628
									2EH04505025	45.9	2	115.2	181.5	200	167	619	192.4	200	177	628
									2EH04507525	68.9	2	173.0	210.5	225	233	619	221.4	225	243	628
	460-3-60	14.7	130	16.0	140	1.3	14.3	4.3	None	-	-	-	54.2	70	58	341	58.5	70	63	345
									2EH04502546	23.0	1	28.9	54.0	70	58	341	59.4	70	63	345
									2EH04505046	45.9	2	57.6	89.9	90	83	341	95.3	100	88	345
									2EH04507546	68.9	2	86.5	104.4	110	116	341	109.8	110	121	345
	575-3-60	11.3	94	12.9	108	1.1	10.5	3.5	None	-	-	-	42.3	50	45	262	45.8	50	49	265
									2EH04502558	23.0	1	23.1	42.0	50	45	262	46.4	50	49	265
									2EH04505058	45.9	2	46.1	70.8	80	65	262	75.1	80	69	265
									2EH04507558	68.9	2	69.2	82.3	90	92	262	86.7	90	96	265

Table 27: AV15 to AV28 VFD 2 stage medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	30.0	9.6	None	-	-	-	131.5	150	139	747	141.1	175	150	757
									2EH04502525	18.8	1	52.2	131.5	150	139	747	141.1	175	150	757
									2EH04505025	37.6	2	104.4	168.0	175	155	747	180.0	200	166	757
									2EH04507525	56.3	2	156.3	193.8	200	214	747	205.8	225	225	757
	230-3-60	41.0	304	41.0	304	2.3	30.0	8.7	None	-	-	-	131.5	150	139	747	140.2	175	149	756
									2EH04502525	23.0	1	57.7	131.5	150	139	747	140.2	175	149	756
									2EH04505025	45.9	2	115.2	181.5	200	167	747	192.4	200	177	756
									2EH04507525	68.9	2	173.0	210.5	225	233	747	221.4	225	243	756
	460-3-60	19.2	147	19.2	147	1.3	14.3	4.3	None	-	-	-	62.7	80	67	365	67.0	80	72	369
									2EH04502546	23.0	1	28.9	54.0	80	67	365	59.4	80	72	369
									2EH04505046	45.9	2	57.6	89.9	90	83	365	95.3	100	88	369
									2EH04507546	68.9	2	86.5	104.4	110	116	365	109.8	110	121	369
	575-3-60	16.7	122	16.7	122	1.1	10.5	3.5	None	-	-	-	52.5	60	56	304	56.0	70	60	307
									2EH04502558	23.0	1	23.1	42.0	60	56	304	46.4	70	60	307
									2EH04505058	45.9	2	46.1	70.8	80	65	304	75.1	80	69	307
									2EH04507558	68.9	2	69.2	82.3	90	92	304	86.7	90	96	307
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	39.6	9.6	None	-	-	-	163.4	200	173	778	173.0	200	184	788
									2EH04502525	18.8	1	52.2	163.4	200	173	778	173.0	200	184	788
									2EH04505025	37.6	2	104.4	180.0	200	173	778	192.0	200	184	788
									2EH04507525	56.3	2	156.3	205.8	225	225	778	217.8	250	236	788
	230-3-60	51.3	300	51.3	300	2.1	39.6	8.7	None	-	-	-	163.4	200	173	778	172.1	200	183	787
									2EH04502525	23.0	1	57.7	163.4	200	173	778	172.1	200	183	787
									2EH04505025	45.9	2	115.2	193.5	200	178	778	204.4	225	188	787
									2EH04507525	68.9	2	173.0	222.5	250	244	778	233.4	250	254	787
	460-3-60	22.4	150	22.4	150	1.0	18.7	4.3	None	-	-	-	73.1	90	78	390	77.4	90	83	395
									2EH04502546	23.0	1	28.9	59.5	90	78	390	64.9	90	83	395
									2EH04505046	45.9	2	57.6	95.4	100	88	390	100.8	110	93	395
									2EH04507546	68.9	2	86.5	109.9	125	121	390	115.3	125	126	395
	575-3-60	19.9	109	19.9	109	0.9	12.9	3.5	None	-	-	-	61.3	80	65	308	64.8	80	69	311
									2EH04502558	23.0	1	23.1	45.0	80	65	308	49.4	80	69	311
									2EH04505058	45.9	2	46.1	73.8	80	68	308	78.1	80	72	311
									2EH04507558	68.9	2	69.2	85.3	90	94	308	89.7	100	98	311

Table 28: AV15 to AV28 VFD 2 stage medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	13.2	5.0	9.6	None	-	-	-	83.7	100	89	484	93.3	110	100	493
										2EH04502525	18.8	1	52.2	94.3	100	89	484	106.3	110	100	493
										2EH04505025	37.6	2	104.4	159.5	175	147	484	171.5	175	158	493
										2EH04507525	56.3	2	156.3	185.3	200	206	484	197.3	200	217	493
	230-3-60	25.0	190	25.0	190	2.1	13.2	5.0	8.7	None	-	-	-	83.7	100	89	492	92.4	110	99	500
										2EH04502525	23.0	1	57.7	101.1	110	93	492	112.0	125	103	500
										2EH04505025	45.9	2	115.2	173.0	175	159	492	183.9	200	169	500
										2EH04507525	68.9	2	173.0	202.0	225	226	492	212.9	225	236	500
	460-3-60	12.2	100	12.2	100	1.0	6.1	2.2	4.3	None	-	-	-	40.0	50	42	255	44.3	50	47	259
										2EH04502546	23.0	1	28.9	49.3	50	45	255	54.6	60	50	259
										2EH04505046	45.9	2	57.6	85.1	90	78	255	90.5	100	83	259
										2EH04507546	68.9	2	86.5	99.6	110	112	255	105.0	110	116	259
	575-3-60	9.3	72	9.3	72	0.9	7.0	1.5	3.5	None	-	-	-	32.7	40	35	194	36.2	45	39	198
										2EH04502558	23.0	1	23.1	41.4	45	38	194	45.8	50	42	198
										2EH04505058	45.9	2	46.1	70.1	80	65	194	74.5	80	69	198
										2EH04507558	68.9	2	69.2	81.7	90	91	194	86.1	90	95	198

Table 28: AV15 to AV28 VFD 2 stage medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	20.4	5.0	9.6	None	-	-	-	97.5	125	104	565	107.1	125	115	574
										2EH04502525	18.8	1	52.2	103.3	125	104	565	115.3	125	115	574
										2EH04505025	37.6	2	104.4	168.5	175	155	565	180.5	200	166	574
										2EH04507525	56.3	2	156.3	194.3	200	215	565	206.3	225	226	574
	230-3-60	27.6	191	28.2	240	2.1	20.4	5.0	8.7	None	-	-	-	97.5	125	104	564	106.2	125	114	573
										2EH04502525	23.0	1	57.7	110.1	125	104	564	121.0	125	114	573
										2EH04505025	45.9	2	115.2	182.0	200	167	564	192.9	200	177	573
										2EH04507525	68.9	2	173.0	211.0	225	234	564	221.9	225	244	573
	460-3-60	12.8	100	14.7	130	1.0	9.9	2.2	4.3	None	-	-	-	47.5	60	50	296	51.8	60	55	300
										2EH04502546	23.0	1	28.9	54.0	60	50	296	59.4	60	55	300
										2EH04505046	45.9	2	57.6	89.9	90	83	296	95.3	100	88	300
										2EH04507546	68.9	2	86.5	104.4	110	116	296	109.8	110	121	300
	575-3-60	9.6	78	11.3	94	0.9	7.0	1.5	3.5	None	-	-	-	35.5	45	38	222	39.0	50	42	226
										2EH04502558	23.0	1	23.1	41.4	45	38	222	45.8	50	42	226
										2EH04505058	45.9	2	46.1	70.1	80	65	222	74.5	80	69	226
										2EH04507558	68.9	2	69.2	81.7	90	91	222	86.1	90	95	226
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	30.0	5.0	9.6	None	-	-	-	119.9	150	128	640	129.5	150	139	650
										2EH04502525	18.8	1	52.2	119.9	150	128	640	129.5	150	139	650
										2EH04505025	37.6	2	104.4	180.5	200	166	640	192.5	200	177	650
										2EH04507525	56.3	2	156.3	206.3	225	226	640	218.3	225	237	650
	230-3-60	28.2	240	34.0	240	2.3	30.0	5.0	8.7	None	-	-	-	119.9	150	128	640	128.6	150	138	649
										2EH04502525	23.0	1	57.7	122.1	150	128	640	133.0	150	138	649
										2EH04505025	45.9	2	115.2	194.0	200	178	640	204.9	225	188	649
										2EH04507525	68.9	2	173.0	223.0	250	245	640	233.9	250	255	649
	460-3-60	14.7	130	16.0	140	1.3	14.3	2.2	4.3	None	-	-	-	58.6	70	63	350	62.9	70	68	354
										2EH04502546	23.0	1	28.9	59.5	70	58	350	64.9	70	63	354
										2EH04505046	45.9	2	57.6	95.4	100	88	350	100.8	110	93	354
										2EH04507546	68.9	2	86.5	109.9	110	121	350	115.3	125	126	354
	575-3-60	11.3	94	12.9	108	1.1	10.5	1.5	3.5	None	-	-	-	45.3	50	48	268	48.8	60	52	272
										2EH04502558	23.0	1	23.1	45.8	50	45	268	50.1	60	49	272
										2EH04505058	45.9	2	46.1	74.5	80	69	268	78.9	80	73	272
										2EH04507558	68.9	2	69.2	86.1	90	95	268	90.5	100	99	272
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	30.0	5.0	9.6	None	-	-	-	141.5	175	151	768	151.1	175	162	778
										2EH04502525	18.8	1	52.2	141.5	175	151	768	151.1	175	162	778
										2EH04505025	37.6	2	104.4	180.5	200	166	768	192.5	200	177	778
										2EH04507525	56.3	2	156.3	206.3	225	226	768	218.3	225	237	778
	230-3-60	41.0	304	41.0	304	2.3	30.0	5.0	8.7	None	-	-	-	141.5	175	151	768	150.2	175	161	777
										2EH04502525	23.0	1	57.7	141.5	175	151	768	150.2	175	161	777
										2EH04505025	45.9	2	115.2	194.0	200	178	768	204.9	225	188	777
										2EH04507525	68.9	2	173.0	223.0	250	245	768	233.9	250	255	777
	460-3-60	19.2	147	19.2	147	1.3	14.3	2.2	4.3	None	-	-	-	67.1	80	72	374	71.4	90	77	378
										2EH04502546	23.0	1	28.9	59.5	80	67	374	64.9	90	72	378
										2EH04505046	45.9	2	57.6	95.4	100	88	374	100.8	110	93	378
										2EH04507546	68.9	2	86.5	109.9	110	121	374	115.3	125	126	378
	575-3-60	16.7	122	16.7	122	1.1	10.5	1.5	3.5	None	-	-	-	55.5	70	59	310	59.0	70	63	314
										2EH04502558	23.0	1	23.1	45.8	70	56	310	50.1	70	60	314
										2EH04505058	45.9	2	46.1	74.5	80	69	310	78.9	80	73	314
										2EH04507558	68.9	2	69.2	86.1	90	95	310	90.5	100	99	314

Table 28: AV15 to AV28 VFD 2 stage medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	39.6	5.0	9.6	None	-	-	-	173.4	200	185	799	183.0	225	196	809
										2EH04502525	18.8	1	52.2	173.4	200	185	799	183.0	225	196	809
										2EH04505025	37.6	2	104.4	192.5	200	185	799	204.5	225	196	809
										2EH04507525	56.3	2	156.3	218.3	250	237	799	230.3	250	248	809
	230-3-60	51.3	300	51.3	300	2.1	39.6	5.0	8.7	None	-	-	-	173.4	200	185	799	182.1	225	195	808
										2EH04502525	23.0	1	57.7	173.4	200	185	799	182.1	225	195	808
										2EH04505025	45.9	2	115.2	206.0	225	190	799	216.9	225	200	808
										2EH04507525	68.9	2	173.0	235.0	250	256	799	245.9	250	266	808
	460-3-60	22.4	150	22.4	150	1.0	18.7	2.2	4.3	None	-	-	-	77.5	90	83	399	81.8	100	88	404
										2EH04502546	23.0	1	28.9	65.0	90	78	399	70.4	100	83	404
										2EH04505046	45.9	2	57.6	100.9	110	93	399	106.3	110	98	404
										2EH04507546	68.9	2	86.5	115.4	125	126	399	120.8	125	131	404
	575-3-60	19.9	109	19.9	109	0.9	12.9	1.5	3.5	None	-	-	-	64.3	80	68	314	67.8	80	72	317
										2EH04502558	23.0	1	23.1	48.8	80	65	314	53.1	80	69	317
										2EH04505058	45.9	2	46.1	77.5	80	71	314	81.9	90	75	317
										2EH04507558	68.9	2	69.2	89.1	100	98	314	93.5	100	102	317

Table 29: AV15 to AV28 VFD 2 stage medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	13.2	6.7	9.6	None	-	-	-	87.1	110	93	476	96.7	110	104	486
										2EH04502525	18.8	1	52.2	98.5	110	93	476	110.5	125	104	486
										2EH04505025	37.6	2	104.4	163.8	175	151	476	175.8	200	162	486
										2EH04507525	56.3	2	156.3	189.6	200	210	476	201.6	225	221	486
	230-3-60	25.0	190	25.0	190	2.1	13.2	6.7	8.7	None	-	-	-	87.1	110	93	484	95.8	110	103	493
										2EH04502525	23.0	1	57.7	105.4	110	97	484	116.3	125	107	493
										2EH04505025	45.9	2	115.2	177.3	200	163	484	188.1	200	173	493
										2EH04507525	68.9	2	173.0	206.3	225	230	484	217.1	225	240	493
	460-3-60	12.2	100	12.2	100	1.0	6.1	3.4	4.3	None	-	-	-	42.4	50	45	253	46.7	50	50	257
										2EH04502546	23.0	1	28.9	52.3	60	48	253	57.6	60	53	257
										2EH04505046	45.9	2	57.6	88.1	90	81	253	93.5	100	86	257
										2EH04507546	68.9	2	86.5	102.6	110	114	253	108.0	110	119	257
	575-3-60	9.3	72	9.3	72	0.9	7.0	2.7	3.5	None	-	-	-	35.1	40	38	193	38.6	45	42	197
										2EH04502558	23.0	1	23.1	44.4	45	41	193	48.8	50	45	197
										2EH04505058	45.9	2	46.1	73.1	80	67	193	77.5	80	71	197
										2EH04507558	68.9	2	69.2	84.7	90	94	193	89.1	90	98	197
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	20.4	6.7	9.6	None	-	-	-	100.9	125	108	557	110.5	125	119	567
										2EH04502525	18.8	1	52.2	107.5	125	108	557	119.5	125	119	567
										2EH04505025	37.6	2	104.4	172.8	175	159	557	184.8	200	170	567
										2EH04507525	56.3	2	156.3	198.6	200	219	557	210.6	225	230	567
	230-3-60	27.6	191	28.2	240	2.1	20.4	6.7	8.7	None	-	-	-	100.9	125	108	556	109.6	125	118	565
										2EH04502525	23.0	1	57.7	114.4	125	108	556	125.3	150	118	565
										2EH04505025	45.9	2	115.2	186.3	200	171	556	197.1	200	181	565
										2EH04507525	68.9	2	173.0	215.3	225	238	556	226.1	250	248	565
	460-3-60	12.8	100	14.7	130	1.0	9.9	3.4	4.3	None	-	-	-	49.9	60	53	293	54.2	60	58	298
										2EH04502546	23.0	1	28.9	57.0	60	53	293	62.4	70	58	298
										2EH04505046	45.9	2	57.6	92.9	100	85	293	98.3	100	90	298
										2EH04507546	68.9	2	86.5	107.4	110	119	293	112.8	125	124	298
	575-3-60	9.6	78	11.3	94	0.9	7.0	2.7	3.5	None	-	-	-	37.9	45	40	221	41.4	50	44	225
										2EH04502558	23.0	1	23.1	44.4	45	41	221	48.8	50	45	225
										2EH04505058	45.9	2	46.1	73.1	80	67	221	77.5	80	71	225
										2EH04507558	68.9	2	69.2	84.7	90	94	221	89.1	90	98	225

Table 29: AV15 to AV28 VFD 2 stage medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	30.0	6.7	9.6	None	-	-	-	123.3	150	132	633	132.9	150	143	642
										2EH04502525	18.8	1	52.2	123.3	150	132	633	132.9	150	143	642
										2EH04505025	37.6	2	104.4	184.8	200	170	633	196.8	200	181	642
										2EH04507525	56.3	2	156.3	210.6	225	230	633	222.6	225	241	642
	230-3-60	28.2	240	34.0	240	2.3	30.0	6.7	8.7	None	-	-	-	123.3	150	132	633	132.0	150	142	641
										2EH04502525	23.0	1	57.7	126.4	150	132	633	137.3	150	142	641
										2EH04505025	45.9	2	115.2	198.3	200	182	633	209.1	225	192	641
										2EH04507525	68.9	2	173.0	227.3	250	249	633	238.1	250	259	641
	460-3-60	14.7	130	16.0	140	1.3	14.3	3.4	4.3	None	-	-	-	61.0	70	66	348	65.3	80	70	352
										2EH04502546	23.0	1	28.9	62.5	70	66	348	67.9	80	70	352
										2EH04505046	45.9	2	57.6	98.4	100	91	348	103.8	110	95	352
										2EH04507546	68.9	2	86.5	112.9	125	124	348	118.3	125	129	352
	575-3-60	11.3	94	12.9	108	1.1	10.5	2.7	3.5	None	-	-	-	47.7	60	51	267	51.2	60	55	271
										2EH04502558	23.0	1	23.1	48.8	60	51	267	53.1	60	55	271
										2EH04505058	45.9	2	46.1	77.5	80	71	267	81.9	90	75	271
										2EH04507558	68.9	2	69.2	89.1	90	98	267	93.5	100	102	271
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	30.0	6.7	9.6	None	-	-	-	144.9	175	155	761	154.5	175	166	770
										2EH04502525	18.8	1	52.2	144.9	175	155	761	154.5	175	166	770
										2EH04505025	37.6	2	104.4	184.8	200	170	761	196.8	200	181	770
										2EH04507525	56.3	2	156.3	210.6	225	230	761	222.6	225	241	770
	230-3-60	41.0	304	41.0	304	2.3	30.0	6.7	8.7	None	-	-	-	144.9	175	155	761	153.6	175	165	769
										2EH04502525	23.0	1	57.7	144.9	175	155	761	153.6	175	165	769
										2EH04505025	45.9	2	115.2	198.3	200	182	761	209.1	225	192	769
										2EH04507525	68.9	2	173.0	227.3	250	249	761	238.1	250	259	769
	460-3-60	19.2	147	19.2	147	1.3	14.3	3.4	4.3	None	-	-	-	69.5	80	74	372	73.8	90	79	376
										2EH04502546	23.0	1	28.9	62.5	80	74	372	67.9	90	79	376
										2EH04505046	45.9	2	57.6	98.4	100	91	372	103.8	110	95	376
										2EH04507546	68.9	2	86.5	112.9	125	124	372	118.3	125	129	376
	575-3-60	16.7	122	16.7	122	1.1	10.5	2.7	3.5	None	-	-	-	57.9	70	62	309	61.4	70	66	313
										2EH04502558	23.0	1	23.1	48.8	70	62	309	53.1	70	66	313
										2EH04505058	45.9	2	46.1	77.5	80	71	309	81.9	90	75	313
										2EH04507558	68.9	2	69.2	89.1	90	98	309	93.5	100	102	313
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	39.6	6.7	9.6	None	-	-	-	176.8	225	189	791	186.4	225	200	801
										2EH04502525	18.8	1	52.2	176.8	225	189	791	186.4	225	200	801
										2EH04505025	37.6	2	104.4	196.8	225	189	791	208.8	225	200	801
										2EH04507525	56.3	2	156.3	222.6	250	241	791	234.6	250	252	801
	230-3-60	51.3	300	51.3	300	2.1	39.6	6.7	8.7	None	-	-	-	176.8	225	189	791	185.5	225	199	800
										2EH04502525	23.0	1	57.7	176.8	225	189	791	185.5	225	199	800
										2EH04505025	45.9	2	115.2	210.3	225	193	791	221.1	225	203	800
										2EH04507525	68.9	2	173.0	239.3	250	260	791	250.1	300	270	800
	460-3-60	22.4	150	22.4	150	1.0	18.7	3.4	4.3	None	-	-	-	79.9	100	85	397	84.2	100	90	401
										2EH04502546	23.0	1	28.9	68.0	100	85	397	73.4	100	90	401
										2EH04505046	45.9	2	57.6	103.9	110	96	397	109.3	110	101	401
										2EH04507546	68.9	2	86.5	118.4	125	129	397	123.8	125	134	401
	575-3-60	19.9	109	19.9	109	0.9	12.9	2.7	3.5	None	-	-	-	66.7	80	71	313	70.2	90	75	316
										2EH04502558	23.0	1	23.1	51.8	80	71	313	56.1	90	75	316
										2EH04505058	45.9	2	46.1	80.5	90	74	313	84.9	90	78	316
										2EH04507558	68.9	2	69.2	92.1	100	101	313	96.5	100	105	316

VFD 2 stage high static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 30: AV15 to AV28 VFD 2 stage high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min Disconnect Rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	20.4	9.6	None	-	-	-	80.9	100	86	493	90.5	110	97	502
									2EH04502525	18.8	1	52.2	90.8	100	86	493	102.8	110	97	502
									2EH04505025	37.6	2	104.4	156.0	175	144	493	168.0	175	155	502
									2EH04507525	56.3	2	156.3	181.8	200	203	493	193.8	200	214	502
	230-3-60	25.0	190	25.0	190	2.1	20.4	8.7	None	-	-	-	80.9	100	86	492	89.6	110	96	501
									2EH04502525	23.0	1	57.7	97.6	100	90	492	108.5	110	100	501
									2EH04505025	45.9	2	115.2	169.5	175	156	492	180.4	200	166	501
									2EH04507525	68.9	2	173.0	198.5	225	222	492	209.4	225	232	501
	460-3-60	12.2	100	12.2	100	1.0	9.9	4.3	None	-	-	-	39.4	50	42	257	43.7	50	47	261
									2EH04502546	23.0	1	28.9	48.5	50	45	257	53.9	60	50	261
									2EH04505046	45.9	2	57.6	84.4	90	78	257	89.8	90	83	261
									2EH04507546	68.9	2	86.5	98.9	110	111	257	104.3	110	116	261
	575-3-60	9.3	72	9.3	72	0.9	7.0	3.5	None	-	-	-	29.7	35	32	188	33.2	40	36	192
									2EH04502558	23.0	1	23.1	37.6	40	35	188	42.0	45	39	192
									2EH04505058	45.9	2	46.1	66.4	70	61	188	70.8	80	65	192
									2EH04507558	68.9	2	69.2	78.0	90	88	188	82.3	90	92	192
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	30.0	9.6	None	-	-	-	97.5	125	104	561	107.1	125	115	571
									2EH04502525	18.8	1	52.2	102.8	125	104	561	114.8	125	115	571
									2EH04505025	37.6	2	104.4	168.0	175	155	561	180.0	200	166	571
									2EH04507525	56.3	2	156.3	193.8	200	214	561	205.8	225	225	571
	230-3-60	27.6	191	28.2	240	2.1	30.0	8.7	None	-	-	-	97.5	125	104	561	106.2	125	114	570
									2EH04502525	23.0	1	57.7	109.6	125	104	561	120.5	125	114	570
									2EH04505025	45.9	2	115.2	181.5	200	167	561	192.4	200	177	570
									2EH04507525	68.9	2	173.0	210.5	225	233	561	221.4	225	243	570
	460-3-60	12.8	100	14.7	130	1.0	14.3	4.3	None	-	-	-	47.5	60	50	296	51.8	60	55	300
									2EH04502546	23.0	1	28.9	54.0	60	50	296	59.4	60	55	300
									2EH04505046	45.9	2	57.6	89.9	90	83	296	95.3	100	88	300
									2EH04507546	68.9	2	86.5	104.4	110	116	296	109.8	110	121	300
	575-3-60	9.6	78	11.3	94	0.9	10.5	3.5	None	-	-	-	36.0	45	38	227	39.5	50	42	230
									2EH04502558	23.0	1	23.1	42.0	45	39	227	46.4	50	43	230
									2EH04505058	45.9	2	46.1	70.8	80	65	227	75.1	80	69	230
									2EH04507558	68.9	2	69.2	82.3	90	92	227	86.7	90	96	230
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	39.6	9.6	None	-	-	-	120.9	150	128	657	130.5	150	139	667
									2EH04502525	18.8	1	52.2	120.9	150	128	657	130.5	150	139	667
									2EH04505025	37.6	2	104.4	180.0	200	166	657	192.0	200	177	667
									2EH04507525	56.3	2	156.3	205.8	225	225	657	217.8	250	236	667
	230-3-60	28.2	240	34.0	240	2.3	39.6	8.7	None	-	-	-	120.9	150	128	657	129.6	150	138	666
									2EH04502525	23.0	1	57.7	121.6	150	128	657	132.5	150	138	666
									2EH04505025	45.9	2	115.2	193.5	200	178	657	204.4	225	188	666
									2EH04507525	68.9	2	173.0	222.5	250	244	657	233.4	250	254	666
	460-3-60	14.7	130	16.0	140	1.3	18.7	4.3	None	-	-	-	59.3	70	63	360	63.6	80	68	364
									2EH04502546	23.0	1	28.9	59.5	70	63	360	64.9	80	68	364
									2EH04505046	45.9	2	57.6	95.4	100	88	360	100.8	110	93	364
									2EH04507546	68.9	2	86.5	109.9	125	121	360	115.3	125	126	364
	575-3-60	11.3	94	12.9	108	1.1	12.9	3.5	None	-	-	-	44.7	50	48	292	48.2	60	52	296
									2EH04502558	23.0	1	23.1	45.0	50	48	292	49.4	60	52	296
									2EH04505058	45.9	2	46.1	73.8	80	68	292	78.1	80	72	296
									2EH04507558	68.9	2	69.2	85.3	90	94	292	89.7	100	98	296

Table 30: AV15 to AV28 VFD 2 stage high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min Disconnect Rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	39.6	9.6	None	-	-	-	141.1	175	150	785	150.7	175	161	795
									2EH04502525	18.8	1	52.2	141.1	175	150	785	150.7	175	161	795
									2EH04505025	37.6	2	104.4	180.0	200	166	785	192.0	200	177	795
									2EH04507525	56.3	2	156.3	205.8	225	225	785	217.8	250	236	795
	230-3-60	41.0	304	41.0	304	2.3	39.6	8.7	None	-	-	-	141.1	175	150	785	149.8	175	160	794
									2EH04502525	23.0	1	57.7	141.1	175	150	785	149.8	175	160	794
									2EH04505025	45.9	2	115.2	193.5	200	178	785	204.4	225	188	794
									2EH04507525	68.9	2	173.0	222.5	250	244	785	233.4	250	254	794
	460-3-60	19.2	147	19.2	147	1.3	18.7	4.3	None	-	-	-	67.1	80	72	384	71.4	90	77	388
									2EH04502546	23.0	1	28.9	59.5	80	72	384	64.9	90	77	388
									2EH04505046	45.9	2	57.6	95.4	100	88	384	100.8	110	93	388
									2EH04507546	68.9	2	86.5	109.9	125	121	384	115.3	125	126	388
	575-3-60	16.7	122	16.7	122	1.1	12.9	3.5	None	-	-	-	54.9	70	58	334	58.4	70	62	338
									2EH04502558	23.0	1	23.1	45.0	70	58	334	49.4	70	62	338
									2EH04505058	45.9	2	46.1	73.8	80	68	334	78.1	80	72	338
									2EH04507558	68.9	2	69.2	85.3	90	94	334	89.7	100	98	338
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	39.6	9.6	None	-	-	-	163.4	200	173	808	173.0	200	184	818
									2EH04502525	18.8	1	52.2	163.4	200	173	808	173.0	200	184	818
									2EH04505025	37.6	2	104.4	180.0	200	173	808	192.0	200	184	818
									2EH04507525	56.3	2	156.3	205.8	225	225	808	217.8	250	236	818
	230-3-60	51.3	300	51.3	300	2.1	39.6	8.7	None	-	-	-	163.4	200	173	808	172.1	200	183	817
									2EH04502525	23.0	1	57.7	163.4	200	173	808	172.1	200	183	817
									2EH04505025	45.9	2	115.2	193.5	200	178	808	204.4	225	188	817
									2EH04507525	68.9	2	173.0	222.5	250	244	808	233.4	250	254	817
	460-3-60	22.4	150	22.4	150	1.0	18.7	4.3	None	-	-	-	73.1	90	78	405	77.4	90	83	410
									2EH04502546	23.0	1	28.9	59.5	90	78	405	64.9	90	83	410
									2EH04505046	45.9	2	57.6	95.4	100	88	405	100.8	110	93	410
									2EH04507546	68.9	2	86.5	109.9	125	121	405	115.3	125	126	410
	575-3-60	19.9	109	19.9	109	0.9	12.9	3.5	None	-	-	-	61.3	80	65	296	64.8	80	69	300
									2EH04502558	23.0	1	23.1	45.0	80	65	296	49.4	80	69	300
									2EH04505058	45.9	2	46.1	73.8	80	68	296	78.1	80	72	300
									2EH04507558	68.9	2	69.2	85.3	90	94	296	89.7	100	98	300

Table 31: AV15 to AV28 VFD 2 stage high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	20.4	5.0	9.6	None	-	-	-	90.9	110	97	514	100.5	125	108	523
										2EH04502525	18.8	1	52.2	103.3	110	97	514	115.3	125	108	523
										2EH04505025	37.6	2	104.4	168.5	175	155	514	180.5	200	166	523
										2EH04507525	56.3	2	156.3	194.3	200	215	514	206.3	225	226	523
	230-3-60	25.0	190	25.0	190	2.1	20.4	5.0	8.7	None	-	-	-	90.9	110	97	513	99.6	110	107	522
										2EH04502525	23.0	1	57.7	110.1	125	101	513	121.0	125	111	522
										2EH04505025	45.9	2	115.2	182.0	200	167	513	192.9	200	177	522
										2EH04507525	68.9	2	173.0	211.0	225	234	513	221.9	225	244	522
	460-3-60	12.2	100	12.2	100	1.0	9.9	2.2	4.3	None	-	-	-	43.8	50	47	266	48.1	60	52	270
										2EH04502546	23.0	1	28.9	54.0	60	50	266	59.4	60	55	270
										2EH04505046	45.9	2	57.6	89.9	90	83	266	95.3	100	88	270
										2EH04507546	68.9	2	86.5	104.4	110	116	266	109.8	110	121	270
	575-3-60	9.3	72	9.3	72	0.9	7.0	1.5	3.5	None	-	-	-	32.7	40	35	194	36.2	45	39	198
										2EH04502558	23.0	1	23.1	41.4	45	38	194	45.8	50	42	198
										2EH04505058	45.9	2	46.1	70.1	80	65	194	74.5	80	69	198
										2EH04507558	68.9	2	69.2	81.7	90	91	194	86.1	90	95	198

Table 31: AV15 to AV28 VFD 2 stage high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	30.0	5.0	9.6	None	-	-	-	107.5	125	115	582	117.1	125	126	592
										2EH04502525	18.8	1	52.2	115.3	125	115	582	127.3	150	126	592
										2EH04505025	37.6	2	104.4	180.5	200	166	582	192.5	200	177	592
										2EH04507525	56.3	2	156.3	206.3	225	226	582	218.3	225	237	592
	230-3-60	27.6	191	28.2	240	2.1	30.0	5.0	8.7	None	-	-	-	107.5	125	115	582	116.2	125	125	591
										2EH04502525	23.0	1	57.7	122.1	125	115	582	133.0	150	125	591
										2EH04505025	45.9	2	115.2	194.0	200	178	582	204.9	225	188	591
										2EH04507525	68.9	2	173.0	223.0	250	245	582	233.9	250	255	591
	460-3-60	12.8	100	14.7	130	1.0	14.3	2.2	4.3	None	-	-	-	51.9	60	55	305	56.2	70	60	309
										2EH04502546	23.0	1	28.9	59.5	60	55	305	64.9	70	60	309
										2EH04505046	45.9	2	57.6	95.4	100	88	305	100.8	110	93	309
										2EH04507546	68.9	2	86.5	109.9	110	121	305	115.3	125	126	309
	575-3-60	9.6	78	11.3	94	0.9	10.5	1.5	3.5	None	-	-	-	39.0	50	42	233	42.5	50	46	237
										2EH04502558	23.0	1	23.1	45.8	50	42	233	50.1	60	46	237
										2EH04505058	45.9	2	46.1	74.5	80	69	233	78.9	80	73	237
										2EH04507558	68.9	2	69.2	86.1	90	95	233	90.5	100	99	237
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	39.6	5.0	9.6	None	-	-	-	130.9	150	139	678	140.5	175	150	688
										2EH04502525	18.8	1	52.2	130.9	150	139	678	140.5	175	150	688
										2EH04505025	37.6	2	104.4	192.5	200	177	678	204.5	225	188	688
										2EH04507525	56.3	2	156.3	218.3	250	237	678	230.3	250	248	688
	230-3-60	28.2	240	34.0	240	2.3	39.6	5.0	8.7	None	-	-	-	130.9	150	139	678	139.6	175	149	687
										2EH04502525	23.0	1	57.7	134.1	150	139	678	145.0	175	149	687
										2EH04505025	45.9	2	115.2	206.0	225	190	678	216.9	225	200	687
										2EH04507525	68.9	2	173.0	235.0	250	256	678	245.9	250	266	687
	460-3-60	14.7	130	16.0	140	1.3	18.7	2.2	4.3	None	-	-	-	63.7	80	68	369	68.0	80	73	373
										2EH04502546	23.0	1	28.9	65.0	80	63	369	70.4	80	68	373
										2EH04505046	45.9	2	57.6	100.9	110	93	369	106.3	110	98	373
										2EH04507546	68.9	2	86.5	115.4	125	126	369	120.8	125	131	373
	575-3-60	11.3	94	12.9	108	1.1	12.9	1.5	3.5	None	-	-	-	47.7	60	51	299	51.2	60	55	302
										2EH04502558	23.0	1	23.1	48.8	60	48	299	53.1	60	52	302
										2EH04505058	45.9	2	46.1	77.5	80	71	299	81.9	90	75	302
										2EH04507558	68.9	2	69.2	89.1	100	98	299	93.5	100	102	302
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	39.6	5.0	9.6	None	-	-	-	151.1	175	162	806	160.7	200	173	816
										2EH04502525	18.8	1	52.2	151.1	175	162	806	160.7	200	173	816
										2EH04505025	37.6	2	104.4	192.5	200	177	806	204.5	225	188	816
										2EH04507525	56.3	2	156.3	218.3	250	237	806	230.3	250	248	816
	230-3-60	41.0	304	41.0	304	2.3	39.6	5.0	8.7	None	-	-	-	151.1	175	162	806	159.8	200	172	815
										2EH04502525	23.0	1	57.7	151.1	175	162	806	159.8	200	172	815
										2EH04505025	45.9	2	115.2	206.0	225	190	806	216.9	225	200	815
										2EH04507525	68.9	2	173.0	235.0	250	256	806	245.9	250	266	815
	460-3-60	19.2	147	19.2	147	1.3	18.7	2.2	4.3	None	-	-	-	71.5	90	77	393	75.8	90	82	397
										2EH04502546	23.0	1	28.9	65.0	90	72	393	70.4	90	77	397
										2EH04505046	45.9	2	57.6	100.9	110	93	393	106.3	110	98	397
										2EH04507546	68.9	2	86.5	115.4	125	126	393	120.8	125	131	397
	575-3-60	16.7	122	16.7	122	1.1	12.9	1.5	3.5	None	-	-	-	57.9	70	62	341	61.4	70	66	344
										2EH04502558	23.0	1	23.1	48.8	70	58	341	53.1	70	62	344
										2EH04505058	45.9	2	46.1	77.5	80	71	341	81.9	90	75	344
										2EH04507558	68.9	2	69.2	89.1	100	98	341	93.5	100	102	344

Table 31: AV15 to AV28 VFD 2 stage high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	39.6	5.0	9.6	None	-	-	-	173.4	200	185	829	183.0	225	196	839
										2EH04502525	18.8	1	52.2	173.4	200	185	829	183.0	225	196	839
										2EH04505025	37.6	2	104.4	192.5	200	185	829	204.5	225	196	839
										2EH04507525	56.3	2	156.3	218.3	250	237	829	230.3	250	248	839
	230-3-60	51.3	300	51.3	300	2.1	39.6	5.0	8.7	None	-	-	-	173.4	200	185	829	182.1	225	195	838
										2EH04502525	23.0	1	57.7	173.4	200	185	829	182.1	225	195	838
										2EH04505025	45.9	2	115.2	206.0	225	190	829	216.9	225	200	838
										2EH04507525	68.9	2	173.0	235.0	250	256	829	245.9	250	266	838
	460-3-60	22.4	150	22.4	150	1.0	18.7	2.2	4.3	None	-	-	-	77.5	90	83	414	81.8	100	88	419
										2EH04502546	23.0	1	28.9	65.0	90	78	414	70.4	100	83	419
										2EH04505046	45.9	2	57.6	100.9	110	93	414	106.3	110	98	419
										2EH04507546	68.9	2	86.5	115.4	125	126	414	120.8	125	131	419
	575-3-60	19.9	109	19.9	109	0.9	12.9	1.5	3.5	None	-	-	-	64.3	80	68	303	67.8	80	72	306
										2EH04502558	23.0	1	23.1	48.8	80	65	303	53.1	80	69	306
										2EH04505058	45.9	2	46.1	77.5	80	71	303	81.9	90	75	306
										2EH04507558	68.9	2	69.2	89.1	100	98	303	93.5	100	102	306

Table 32: AV15 to AV28 VFD 2 stage high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	25.0	190	25.0	190	2.1	20.4	6.7	9.6	None	-	-	-	94.3	110	101	506	103.9	125	112	516
										2EH04502525	18.8	1	52.2	107.5	110	101	506	119.5	125	112	516
										2EH04505025	37.6	2	104.4	172.8	175	159	506	184.8	200	170	516
										2EH04507525	56.3	2	156.3	198.6	200	219	506	210.6	225	230	516
	230-3-60	25.0	190	25.0	190	2.1	20.4	6.7	8.7	None	-	-	-	94.3	110	101	505	103.0	125	111	514
										2EH04502525	23.0	1	57.7	114.4	125	105	505	125.3	150	115	514
										2EH04505025	45.9	2	115.2	186.3	200	171	505	197.1	200	181	514
										2EH04507525	68.9	2	173.0	215.3	225	238	505	226.1	250	248	514
	460-3-60	12.2	100	12.2	100	1.0	9.9	3.4	4.3	None	-	-	-	46.2	50	50	263	50.5	60	55	268
										2EH04502546	23.0	1	28.9	57.0	60	52	263	62.4	70	57	268
										2EH04505046	45.9	2	57.6	92.9	100	85	263	98.3	100	90	268
										2EH04507546	68.9	2	86.5	107.4	110	119	263	112.8	125	124	268
	575-3-60	9.3	72	9.3	72	0.9	7.0	2.7	3.5	None	-	-	-	35.1	40	38	193	38.6	45	42	197
										2EH04502558	23.0	1	23.1	44.4	45	41	193	48.8	50	45	197
										2EH04505058	45.9	2	46.1	73.1	80	67	193	77.5	80	71	197
										2EH04507558	68.9	2	69.2	84.7	90	94	193	89.1	90	98	197
AV18 (17.5)	208-3-60	27.6	191	28.2	240	2.1	30.0	6.7	9.6	None	-	-	-	110.9	125	119	574	120.5	150	130	584
										2EH04502525	18.8	1	52.2	119.5	125	119	574	131.5	150	130	584
										2EH04505025	37.6	2	104.4	184.8	200	170	574	196.8	200	181	584
										2EH04507525	56.3	2	156.3	210.6	225	230	574	222.6	225	241	584
	230-3-60	27.6	191	28.2	240	2.1	30.0	6.7	8.7	None	-	-	-	110.9	125	119	574	119.6	125	129	583
										2EH04502525	23.0	1	57.7	126.4	150	119	574	137.3	150	129	583
										2EH04505025	45.9	2	115.2	198.3	200	182	574	209.1	225	192	583
										2EH04507525	68.9	2	173.0	227.3	250	249	574	238.1	250	259	583
	460-3-60	12.8	100	14.7	130	1.0	14.3	3.4	4.3	None	-	-	-	54.3	60	58	302	58.6	70	63	307
										2EH04502546	23.0	1	28.9	62.5	70	58	302	67.9	70	63	307
										2EH04505046	45.9	2	57.6	98.4	100	91	302	103.8	110	95	307
										2EH04507546	68.9	2	86.5	112.9	125	124	302	118.3	125	129	307
	575-3-60	9.6	78	11.3	94	0.9	10.5	2.7	3.5	None	-	-	-	41.4	50	44	232	44.9	50	48	236
										2EH04502558	23.0	1	23.1	48.8	50	45	232	53.1	60	49	236
										2EH04505058	45.9	2	46.1	77.5	80	71	232	81.9	90	75	236
										2EH04507558	68.9	2	69.2	89.1	90	98	232	93.5	100	102	236

Table 32: AV15 to AV28 VFD 2 stage high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	28.2	240	34.0	240	2.3	39.6	6.7	9.6	None	-	-	-	134.3	150	143	671	143.9	175	154	680
										2EH04502525	18.8	1	52.2	134.3	150	143	671	143.9	175	154	680
										2EH04505025	37.6	2	104.4	196.8	200	181	671	208.8	225	192	680
										2EH04507525	56.3	2	156.3	222.6	250	241	671	234.6	250	252	680
	230-3-60	28.2	240	34.0	240	2.3	39.6	6.7	8.7	None	-	-	-	134.3	150	143	671	143.0	175	153	679
										2EH04502525	23.0	1	57.7	138.4	150	143	671	149.3	175	153	679
										2EH04505025	45.9	2	115.2	210.3	225	193	671	221.1	225	203	679
										2EH04507525	68.9	2	173.0	239.3	250	260	671	250.1	300	270	679
	460-3-60	14.7	130	16.0	140	1.3	18.7	3.4	4.3	None	-	-	-	66.1	80	71	367	70.4	80	76	371
										2EH04502546	23.0	1	28.9	68.0	80	71	367	73.4	80	76	371
										2EH04505046	45.9	2	57.6	103.9	110	96	367	109.3	110	101	371
										2EH04507546	68.9	2	86.5	118.4	125	129	367	123.8	125	134	371
	575-3-60	11.3	94	12.9	108	1.1	12.9	2.7	3.5	None	-	-	-	50.1	60	54	298	53.6	60	58	301
										2EH04502558	23.0	1	23.1	51.8	60	54	298	56.1	60	58	301
										2EH04505058	45.9	2	46.1	80.5	90	74	298	84.9	90	78	301
										2EH04507558	68.9	2	69.2	92.1	100	101	298	96.5	100	105	301
AV25 (25)	208-3-60	41.0	304	41.0	304	2.3	39.6	6.7	9.6	None	-	-	-	154.5	175	166	799	164.1	200	177	808
										2EH04502525	18.8	1	52.2	154.5	175	166	799	164.1	200	177	808
										2EH04505025	37.6	2	104.4	196.8	200	181	799	208.8	225	192	808
										2EH04507525	56.3	2	156.3	222.6	250	241	799	234.6	250	252	808
	230-3-60	41.0	304	41.0	304	2.3	39.6	6.7	8.7	None	-	-	-	154.5	175	166	799	163.2	200	176	807
										2EH04502525	23.0	1	57.7	154.5	175	166	799	163.2	200	176	807
										2EH04505025	45.9	2	115.2	210.3	225	193	799	221.1	225	203	807
										2EH04507525	68.9	2	173.0	239.3	250	260	799	250.1	300	270	807
	460-3-60	19.2	147	19.2	147	1.3	18.7	3.4	4.3	None	-	-	-	73.9	90	79	391	78.2	90	84	395
										2EH04502546	23.0	1	28.9	68.0	90	79	391	73.4	90	84	395
										2EH04505046	45.9	2	57.6	103.9	110	96	391	109.3	110	101	395
										2EH04507546	68.9	2	86.5	118.4	125	129	391	123.8	125	134	395
	575-3-60	16.7	122	16.7	122	1.1	12.9	2.7	3.5	None	-	-	-	60.3	70	65	340	63.8	80	69	343
										2EH04502558	23.0	1	23.1	51.8	70	65	340	56.1	80	69	343
										2EH04505058	45.9	2	46.1	80.5	90	74	340	84.9	90	78	343
										2EH04507558	68.9	2	69.2	92.1	100	101	340	96.5	100	105	343
AV28 (27.5)	208-3-60	51.3	300	51.3	300	2.1	39.6	6.7	9.6	None	-	-	-	176.8	225	189	821	186.4	225	200	831
										2EH04502525	18.8	1	52.2	176.8	225	189	821	186.4	225	200	831
										2EH04505025	37.6	2	104.4	196.8	225	189	821	208.8	225	200	831
										2EH04507525	56.3	2	156.3	222.6	250	241	821	234.6	250	252	831
	230-3-60	51.3	300	51.3	300	2.1	39.6	6.7	8.7	None	-	-	-	176.8	225	189	821	185.5	225	199	830
										2EH04502525	23.0	1	57.7	176.8	225	189	821	185.5	225	199	830
										2EH04505025	45.9	2	115.2	210.3	225	193	821	221.1	225	203	830
										2EH04507525	68.9	2	173.0	239.3	250	260	821	250.1	300	270	830
	460-3-60	22.4	150	22.4	150	1.0	18.7	3.4	4.3	None	-	-	-	79.9	100	85	412	84.2	100	90	416
										2EH04502546	23.0	1	28.9	68.0	100	85	412	73.4	100	90	416
										2EH04505046	45.9	2	57.6	103.9	110	96	412	109.3	110	101	416
										2EH04507546	68.9	2	86.5	118.4	125	129	412	123.8	125	134	416
	575-3-60	19.9	109	19.9	109	0.9	12.9	2.7	3.5	None	-	-	-	66.7	80	71	302	70.2	90	75	305
										2EH04502558	23.0	1	23.1	51.8	80	71	302	56.1	90	75	305
										2EH04505058	45.9	2	46.1	80.5	90	74	302	84.9	90	78	305
										2EH04507558	68.9	2	69.2	92.1	100	101	302	96.5	100	105	305

VFD 4 stage standard static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 33: AV15 to AV28 VFD 4 stage standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.2	9.6	None	-	-	-	76.0	100	80	426	85.6	110	91	435
											2EH04502525	18.8	1	52.2	81.8	100	80	426	93.8	110	91	435
											2EH04505025	37.6	2	104.4	147.0	150	135	426	159.0	175	146	435
											2EH04507525	56.3	2	156.3	172.8	200	195	426	184.8	200	206	435
	230-3-60	26.9	164	25.0	190			2.1	13.2	8.7	None	-	-	-	76.0	100	80	433	84.7	110	90	442
											2EH04502525	23.0	1	57.7	88.6	100	82	433	99.5	110	92	442
											2EH04505025	45.9	2	115.2	160.5	175	148	433	171.4	175	158	442
											2EH04507525	68.9	2	173.0	189.5	225	214	433	200.4	225	224	442
	460-3-60	12.0	94	12.2	100			1.0	6.1	4.3	None	-	-	-	35.4	45	37	234	39.7	50	42	238
											2EH04502546	23.0	1	28.9	43.8	45	40	234	49.1	50	45	238
											2EH04505046	45.9	2	57.6	79.6	80	73	234	85.0	90	78	238
											2EH04507546	68.9	2	86.5	94.1	110	106	234	99.5	110	111	238
	575-3-60	9.0	65	9.3	72			0.9	5.9	3.5	None	-	-	-	28.3	35	30	167	31.8	40	34	171
											2EH04502558	23.0	1	23.1	36.3	40	33	167	40.6	45	37	171
											2EH04505058	45.9	2	46.1	65.0	70	60	167	69.4	70	64	171
											2EH04507558	68.9	2	69.2	76.6	90	86	167	81.0	90	90	171
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	13.2	9.6	None	-	-	-	81.6	110	86	546	91.2	110	97	555
											2EH04502525	18.8	1	52.2	81.8	110	86	546	93.8	110	97	555
											2EH04505025	37.6	2	104.4	147.0	150	135	546	159.0	175	146	555
											2EH04507525	56.3	2	156.3	172.8	200	195	546	184.8	200	206	555
	230-3-60	28.8	223	28.2	240			2.1	13.2	8.7	None	-	-	-	81.6	110	86	554	90.3	110	96	562
											2EH04502525	23.0	1	57.7	88.6	110	86	554	99.5	110	96	562
											2EH04505025	45.9	2	115.2	160.5	175	148	554	171.4	175	158	562
											2EH04507525	68.9	2	173.0	189.5	225	214	554	200.4	225	224	562
	460-3-60	12.5	100	14.7	130			1.0	6.1	4.3	None	-	-	-	39.0	50	41	276	43.3	50	46	280
											2EH04502546	23.0	1	28.9	43.8	50	41	276	49.1	50	46	280
											2EH04505046	45.9	2	57.6	79.6	80	73	276	85.0	90	78	280
											2EH04507546	68.9	2	86.5	94.1	110	106	276	99.5	110	111	280
	575-3-60	9.7	70	11.3	94			0.9	7.0	3.5	None	-	-	-	32.6	40	34	208	36.1	45	38	212
											2EH04502558	23.0	1	23.1	37.6	40	35	208	42.0	45	39	212
											2EH04505058	45.9	2	46.1	66.4	70	61	208	70.8	80	65	212
											2EH04507558	68.9	2	69.2	78.0	90	88	208	82.3	90	92	212
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	20.4	9.6	None	-	-	-	104.7	125	111	602	114.3	125	122	612
											2EH04502525	18.8	1	52.2	104.7	125	111	602	114.3	125	122	612
											2EH04505025	37.6	2	104.4	156.0	175	144	602	168.0	175	155	612
											2EH04507525	56.3	2	156.3	181.8	200	203	602	193.8	200	214	612
	230-3-60	32.6	240	34.0	240			2.3	20.4	8.7	None	-	-	-	104.7	125	111	601	113.4	125	121	610
											2EH04502525	23.0	1	57.7	104.7	125	111	601	113.4	125	121	610
											2EH04505025	45.9	2	115.2	169.5	175	156	601	180.4	200	166	610
											2EH04507525	68.9	2	173.0	198.5	225	222	601	209.4	225	232	610
	460-3-60	14.8	130	16.0	140			1.3	9.9	4.3	None	-	-	-	49.9	60	53	332	54.2	70	58	336
											2EH04502546	23.0	1	28.9	48.5	60	53	332	53.9	70	58	336
											2EH04505046	45.9	2	57.6	84.4	90	78	332	89.8	90	83	336
											2EH04507546	68.9	2	86.5	98.9	110	111	332	104.3	110	116	336
	575-3-60	11.1	94	12.9	108			1.1	7.0	3.5	None	-	-	-	38.6	50	41	251	42.1	50	45	254
											2EH04502558	23.0	1	23.1	37.6	50	41	251	42.0	50	45	254
											2EH04505058	45.9	2	46.1	66.4	70	61	251	70.8	80	65	254
											2EH04507558	68.9	2	69.2	78.0	90	88	251	82.3	90	92	254

Table 33: AV15 to AV28 VFD 4 stage standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	20.4	9.6	None	-	-	-	125.7	150	133	724	135.3	175	144	734
											2EH04502525	18.8	1	52.2	125.7	150	133	724	135.3	175	144	734
											2EH04505025	37.6	2	104.4	156.0	175	144	724	168.0	175	155	734
											2EH04507525	56.3	2	156.3	181.8	200	203	724	193.8	200	214	734
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	20.4	8.7	None	-	-	-	125.7	150	133	723	134.4	175	143	732
											2EH04502525	23.0	1	57.7	125.7	150	133	723	134.4	175	143	732
											2EH04505025	45.9	2	115.2	169.5	175	156	723	180.4	200	166	732
											2EH04507525	68.9	2	173.0	198.5	225	222	723	209.4	225	232	732
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	9.9	4.3	None	-	-	-	60.3	70	64	359	64.6	80	69	363
											2EH04502546	23.0	1	28.9	48.5	70	64	359	53.9	80	69	363
											2EH04505046	45.9	2	57.6	84.4	90	78	359	89.8	90	83	363
											2EH04507546	68.9	2	86.5	98.9	110	111	359	104.3	110	116	363
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	7.0	3.5	None	-	-	-	47.7	60	50	279	51.2	60	54	282
											2EH04502558	23.0	1	23.1	37.6	60	50	279	42.0	60	54	282
											2EH04505058	45.9	2	46.1	66.4	70	61	279	70.8	80	65	282
											2EH04507558	68.9	2	69.2	78.0	90	88	279	82.3	90	92	282
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	30.0	9.6	None	-	-	-	152.5	200	161	768	162.1	200	172	778
											2EH04502525	18.8	1	52.2	152.5	200	161	768	162.1	200	172	778
											2EH04505025	37.6	2	104.4	168.0	200	161	768	180.0	200	172	778
											2EH04507525	56.3	2	156.3	193.8	200	214	768	205.8	225	225	778
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	30.0	8.7	None	-	-	-	152.5	200	161	768	161.2	200	171	777
											2EH04502525	23.0	1	57.7	152.5	200	161	768	161.2	200	171	777
											2EH04505025	45.9	2	115.2	181.5	200	167	768	192.4	200	177	777
											2EH04507525	68.9	2	173.0	210.5	225	233	768	221.4	225	243	777
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	14.3	4.3	None	-	-	-	71.9	90	76	421	76.2	90	81	426
											2EH04502546	23.0	1	28.9	54.0	90	76	421	59.4	90	81	426
											2EH04505046	45.9	2	57.6	89.9	90	83	421	95.3	100	88	426
											2EH04507546	68.9	2	86.5	104.4	110	116	421	109.8	110	121	426
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	10.5	3.5	None	-	-	-	58.2	70	61	324	61.7	80	65	327
											2EH04502558	23.0	1	23.1	42.0	70	61	324	46.4	80	65	327
											2EH04505058	45.9	2	46.1	70.8	80	65	324	75.1	80	69	327
											2EH04507558	68.9	2	69.2	82.3	90	92	324	86.7	90	96	327

Table 34: AV15 to AV28 VFD 4 stage standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/ 120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.2	5.0	9.6	None	-	-	-	86.0	110	91	447	95.6	110	102	456
												2EH04502525	18.8	1	52.2	94.3	110	91	447	106.3	110	102	456
												2EH04505025	37.6	2	104.4	159.5	175	147	447	171.5	175	158	456
												2EH04507525	56.3	2	156.3	185.3	200	206	447	197.3	200	217	456
	230-3-60	26.9	164	25.0	190			2.1	13.2	5.0	8.7	None	-	-	-	86.0	110	91	454	94.7	110	101	463
												2EH04502525	23.0	1	57.7	101.1	110	93	454	112.0	125	103	463
												2EH04505025	45.9	2	115.2	173.0	175	159	454	183.9	200	169	463
												2EH04507525	68.9	2	173.0	202.0	225	226	454	212.9	225	236	463
	460-3-60	12.0	94	12.2	100			1.0	6.1	2.2	4.3	None	-	-	-	39.8	50	42	243	44.1	50	47	248
												2EH04502546	23.0	1	28.9	49.3	50	45	243	54.6	60	50	248
												2EH04505046	45.9	2	57.6	85.1	90	78	243	90.5	100	83	248
												2EH04507546	68.9	2	86.5	99.6	110	112	243	105.0	110	116	248
	575-3-60	9.0	65	9.3	72			0.9	5.9	1.5	3.5	None	-	-	-	31.3	40	33	174	34.8	40	37	177
												2EH04502558	23.0	1	23.1	40.0	45	37	174	44.4	45	41	177
												2EH04505058	45.9	2	46.1	68.8	70	63	174	73.1	80	67	177
												2EH04507558	68.9	2	69.2	80.3	90	90	174	84.7	90	94	177

Table 34: AV15 to AV28 VFD 4 stage standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/ 120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	13.2	5.0	9.6	None	-	-	-	91.6	110	97	567	101.2	125	108	576
												2EH04502525	18.8	1	52.2	94.3	110	97	567	106.3	125	108	576
												2EH04505025	37.6	2	104.4	159.5	175	147	567	171.5	175	158	576
												2EH04507525	56.3	2	156.3	185.3	200	206	567	197.3	200	217	576
	230-3-60	28.8	223	28.2	240			2.1	13.2	5.0	8.7	None	-	-	-	91.6	110	97	575	100.3	125	107	583
												2EH04502525	23.0	1	57.7	101.1	110	97	575	112.0	125	107	583
												2EH04505025	45.9	2	115.2	173.0	175	159	575	183.9	200	169	583
												2EH04507525	68.9	2	173.0	202.0	225	226	575	212.9	225	236	583
	460-3-60	12.5	100	14.7	130			1.0	6.1	2.2	4.3	None	-	-	-	43.4	50	46	285	47.7	60	51	289
												2EH04502546	23.0	1	28.9	49.3	50	45	285	54.6	60	50	289
												2EH04505046	45.9	2	57.6	85.1	90	78	285	90.5	100	83	289
												2EH04507546	68.9	2	86.5	99.6	110	112	285	105.0	110	116	289
	575-3-60	9.7	70	11.3	94			0.9	7.0	1.5	3.5	None	-	-	-	35.6	45	38	214	39.1	50	42	218
												2EH04502558	23.0	1	23.1	41.4	45	38	214	45.8	50	42	218
												2EH04505058	45.9	2	46.1	70.1	80	65	214	74.5	80	69	218
												2EH04507558	68.9	2	69.2	81.7	90	91	214	86.1	90	95	218
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	20.4	5.0	9.6	None	-	-	-	114.7	125	122	623	124.3	150	133	633
												2EH04502525	18.8	1	52.2	114.7	125	122	623	124.3	150	133	633
												2EH04505025	37.6	2	104.4	168.5	175	155	623	180.5	200	166	633
												2EH04507525	56.3	2	156.3	194.3	200	215	623	206.3	225	226	633
	230-3-60	32.6	240	34.0	240			2.3	20.4	5.0	8.7	None	-	-	-	114.7	125	122	622	123.4	150	132	631
												2EH04502525	23.0	1	57.7	114.7	125	122	622	123.4	150	132	631
												2EH04505025	45.9	2	115.2	182.0	200	167	622	192.9	200	177	631
												2EH04507525	68.9	2	173.0	211.0	225	234	622	221.9	225	244	631
	460-3-60	14.8	130	16.0	140			1.3	9.9	2.2	4.3	None	-	-	-	54.3	70	58	341	58.6	70	63	345
												2EH04502546	23.0	1	28.9	54.0	70	53	341	59.4	70	58	345
												2EH04505046	45.9	2	57.6	89.9	90	83	341	95.3	100	88	345
												2EH04507546	68.9	2	86.5	104.4	110	116	341	109.8	110	121	345
	575-3-60	11.1	94	12.9	108			1.1	7.0	1.5	3.5	None	-	-	-	41.6	50	44	257	45.1	50	48	261
												2EH04502558	23.0	1	23.1	41.4	50	41	257	45.8	50	45	261
												2EH04505058	45.9	2	46.1	70.1	80	65	257	74.5	80	69	261
												2EH04507558	68.9	2	69.2	81.7	90	91	257	86.1	90	95	261
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	20.4	5.0	9.6	None	-	-	-	135.7	175	144	745	145.3	175	155	755
												2EH04502525	18.8	1	52.2	135.7	175	144	745	145.3	175	155	755
												2EH04505025	37.6	2	104.4	168.5	175	155	745	180.5	200	166	755
												2EH04507525	56.3	2	156.3	194.3	200	215	745	206.3	225	226	755
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	20.4	5.0	8.7	None	-	-	-	135.7	175	144	744	144.4	175	154	753
												2EH04502525	23.0	1	57.7	135.7	175	144	744	144.4	175	154	753
												2EH04505025	45.9	2	115.2	182.0	200	167	744	192.9	200	177	753
												2EH04507525	68.9	2	173.0	211.0	225	234	744	221.9	225	244	753
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	9.9	2.2	4.3	None	-	-	-	64.7	80	69	368	69.0	80	74	372
												2EH04502546	23.0	1	28.9	54.0	80	64	368	59.4	80	69	372
												2EH04505046	45.9	2	57.6	89.9	90	83	368	95.3	100	88	372
												2EH04507546	68.9	2	86.5	104.4	110	116	368	109.8	110	121	372
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	7.0	1.5	3.5	None	-	-	-	50.7	60	53	285	54.2	70	58	289
												2EH04502558	23.0	1	23.1	41.4	60	50	285	45.8	70	54	289
												2EH04505058	45.9	2	46.1	70.1	80	65	285	74.5	80	69	289
												2EH04507558	68.9	2	69.2	81.7	90	91	285	86.1	90	95	289

Table 34: AV15 to AV28 VFD 4 stage standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/ 120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	30.0	5.0	9.6	None	-	-	-	162.5	200	172	789	172.1	200	183	799
												2EH04502525	18.8	1	52.2	162.5	200	172	789	172.1	200	183	799
												2EH04505025	37.6	2	104.4	180.5	200	172	789	192.5	200	183	799
												2EH04507525	56.3	2	156.3	206.3	225	226	789	218.3	225	237	799
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	30.0	5.0	8.7	None	-	-	-	162.5	200	172	789	171.2	200	182	798
												2EH04502525	23.0	1	57.7	162.5	200	172	789	171.2	200	182	798
												2EH04505025	45.9	2	115.2	194.0	200	178	789	204.9	225	188	798
												2EH04507525	68.9	2	173.0	223.0	250	245	789	233.9	250	255	798
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	14.3	2.2	4.3	None	-	-	-	76.3	90	81	430	80.6	100	86	435
												2EH04502546	23.0	1	28.9	59.5	90	76	430	64.9	100	81	435
												2EH04505046	45.9	2	57.6	95.4	100	88	430	100.8	110	93	435
												2EH04507546	68.9	2	86.5	109.9	110	121	430	115.3	125	126	435
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	10.5	1.5	3.5	None	-	-	-	61.2	80	65	330	64.7	80	69	334
												2EH04502558	23.0	1	23.1	45.8	80	61	330	50.1	80	65	334
												2EH04505058	45.9	2	46.1	74.5	80	69	330	78.9	80	73	334
												2EH04507558	68.9	2	69.2	86.1	90	95	330	90.5	100	99	334

Table 35: AV15 to AV28 VFD 4 stage standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.2	6.7	9.6	None	-	-	-	89.4	110	95	439	99.0	125	106	449
												2EH04502525	18.8	1	52.2	98.5	110	95	439	110.5	125	106	449
												2EH04505025	37.6	2	104.4	163.8	175	151	439	175.8	200	162	449
												2EH04507525	56.3	2	156.3	189.6	200	210	439	201.6	225	221	449
	230-3-60	26.9	164	25.0	190			2.1	13.2	6.7	8.7	None	-	-	-	89.4	110	95	446	98.1	125	105	455
												2EH04502525	23.0	1	57.7	105.4	110	97	446	116.3	125	107	455
												2EH04505025	45.9	2	115.2	177.3	200	163	446	188.1	200	173	455
												2EH04507525	68.9	2	173.0	206.3	225	230	446	217.1	225	240	455
	460-3-60	12.0	94	12.2	100			1.0	6.1	3.4	4.3	None	-	-	-	42.2	50	45	241	46.5	50	50	245
												2EH04502546	23.0	1	28.9	52.3	60	48	241	57.6	60	53	245
												2EH04505046	45.9	2	57.6	88.1	90	81	241	93.5	100	86	245
												2EH04507546	68.9	2	86.5	102.6	110	114	241	108.0	110	119	245
	575-3-60	9.0	65	9.3	72			0.9	5.9	2.7	3.5	None	-	-	-	33.7	40	36	173	37.2	45	40	176
												2EH04502558	23.0	1	23.1	43.0	45	40	173	47.4	50	44	176
												2EH04505058	45.9	2	46.1	71.8	80	66	173	76.1	80	70	176
												2EH04507558	68.9	2	69.2	83.3	90	93	173	87.7	90	97	176
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	13.2	6.7	9.6	None	-	-	-	95.0	110	101	559	104.6	125	112	569
												2EH04502525	18.8	1	52.2	98.5	110	101	559	110.5	125	112	569
												2EH04505025	37.6	2	104.4	163.8	175	151	559	175.8	200	162	569
												2EH04507525	56.3	2	156.3	189.6	200	210	559	201.6	225	221	569
	230-3-60	28.8	223	28.2	240			2.1	13.2	6.7	8.7	None	-	-	-	95.0	110	101	567	103.7	125	111	576
												2EH04502525	23.0	1	57.7	105.4	110	101	567	116.3	125	111	576
												2EH04505025	45.9	2	115.2	177.3	200	163	567	188.1	200	173	576
												2EH04507525	68.9	2	173.0	206.3	225	230	567	217.1	225	240	576
	460-3-60	12.5	100	14.7	130			1.0	6.1	3.4	4.3	None	-	-	-	45.8	60	48	283	50.1	60	53	287
												2EH04502546	23.0	1	28.9	52.3	60	48	283	57.6	60	53	287
												2EH04505046	45.9	2	57.6	88.1	90	81	283	93.5	100	86	287
												2EH04507546	68.9	2	86.5	102.6	110	114	283	108.0	110	119	287
	575-3-60	9.7	70	11.3	94			0.9	7.0	2.7	3.5	None	-	-	-	38.0	45	40	213	41.5	50	45	217
												2EH04502558	23.0	1	23.1	44.4	45	41	213	48.8	50	45	217
												2EH04505058	45.9	2	46.1	73.1	80	67	213	77.5	80	71	217
												2EH04507558	68.9	2	69.2	84.7	90	94	213	89.1	90	98	217

Table 35: AV15 to AV28 VFD 4 stage standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	20.4	6.7	9.6	None	-	-	-	118.1	150	126	615	127.7	150	137	625
												2EH04502525	18.8	1	52.2	118.1	150	126	615	127.7	150	137	625
												2EH04505025	37.6	2	104.4	172.8	175	159	615	184.8	200	170	625
												2EH04507525	56.3	2	156.3	198.6	200	219	615	210.6	225	230	625
	230-3-60	32.6	240	34.0	240			2.3	20.4	6.7	8.7	None	-	-	-	118.1	150	126	615	126.8	150	136	623
												2EH04502525	23.0	1	57.7	118.1	150	126	615	126.8	150	136	623
												2EH04505025	45.9	2	115.2	186.3	200	171	615	197.1	200	181	623
												2EH04507525	68.9	2	173.0	215.3	225	238	615	226.1	250	248	623
	460-3-60	14.8	130	16.0	140			1.3	9.9	3.4	4.3	None	-	-	-	56.7	70	61	339	61.0	70	66	343
												2EH04502546	23.0	1	28.9	57.0	70	61	339	62.4	70	66	343
												2EH04505046	45.9	2	57.6	92.9	100	85	339	98.3	100	90	343
												2EH04507546	68.9	2	86.5	107.4	110	119	339	112.8	125	124	343
	575-3-60	11.1	94	12.9	108			1.1	7.0	2.7	3.5	None	-	-	-	44.0	50	47	256	47.5	60	51	260
												2EH04502558	23.0	1	23.1	44.4	50	47	256	48.8	60	51	260
												2EH04505058	45.9	2	46.1	73.1	80	67	256	77.5	80	71	260
												2EH04507558	68.9	2	69.2	84.7	90	94	256	89.1	90	98	260
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	20.4	6.7	9.6	None	-	-	-	139.1	175	148	737	148.7	175	159	747
												2EH04502525	18.8	1	52.2	139.1	175	148	737	148.7	175	159	747
												2EH04505025	37.6	2	104.4	172.8	175	159	737	184.8	200	170	747
												2EH04507525	56.3	2	156.3	198.6	200	219	737	210.6	225	230	747
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	20.4	6.7	8.7	None	-	-	-	139.1	175	148	737	147.8	175	158	745
												2EH04502525	23.0	1	57.7	139.1	175	148	737	147.8	175	158	745
												2EH04505025	45.9	2	115.2	186.3	200	171	737	197.1	200	181	745
												2EH04507525	68.9	2	173.0	215.3	225	238	737	226.1	250	248	745
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	9.9	3.4	4.3	None	-	-	-	67.1	80	72	366	71.4	90	77	370
												2EH04502546	23.0	1	28.9	57.0	80	72	366	62.4	90	77	370
												2EH04505046	45.9	2	57.6	92.9	100	85	366	98.3	100	90	370
												2EH04507546	68.9	2	86.5	107.4	110	119	366	112.8	125	124	370
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	7.0	2.7	3.5	None	-	-	-	53.1	60	56	284	56.6	70	60	288
												2EH04502558	23.0	1	23.1	44.4	60	56	284	48.8	70	60	288
												2EH04505058	45.9	2	46.1	73.1	80	67	284	77.5	80	71	288
												2EH04507558	68.9	2	69.2	84.7	90	94	284	89.1	90	98	288
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	30.0	6.7	9.6	None	-	-	-	165.9	200	176	781	175.5	225	187	791
												2EH04502525	18.8	1	52.2	165.9	200	176	781	175.5	225	187	791
												2EH04505025	37.6	2	104.4	184.8	200	176	781	196.8	225	187	791
												2EH04507525	56.3	2	156.3	210.6	225	230	781	222.6	225	241	791
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	30.0	6.7	8.7	None	-	-	-	165.9	200	176	781	174.6	225	186	790
												2EH04502525	23.0	1	57.7	165.9	200	176	781	174.6	225	186	790
												2EH04505025	45.9	2	115.2	198.3	200	182	781	209.1	225	192	790
												2EH04507525	68.9	2	173.0	227.3	250	249	781	238.1	250	259	790
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	14.3	3.4	4.3	None	-	-	-	78.7	100	84	428	83.0	100	89	432
												2EH04502546	23.0	1	28.9	62.5	100	84	428	67.9	100	89	432
												2EH04505046	45.9	2	57.6	98.4	100	91	428	103.8	110	95	432
												2EH04507546	68.9	2	86.5	112.9	125	124	428	118.3	125	129	432
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	10.5	2.7	3.5	None	-	-	-	63.6	80	67	329	67.1	80	71	333
												2EH04502558	23.0	1	23.1	48.8	80	67	329	53.1	80	71	333
												2EH04505058	45.9	2	46.1	77.5	80	71	329	81.9	90	75	333
												2EH04507558	68.9	2	69.2	89.1	90	98	329	93.5	100	102	333

VFD 4 stage medium static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 36: AV15 to AV28 VFD 4 stage medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.2	9.6	None	-	-	-	76.0	100	80	437	85.6	110	91	446
											2EH04502525	18.8	1	52.2	81.8	100	80	437	93.8	110	91	446
											2EH04505025	37.6	2	104.4	147.0	150	135	437	159.0	175	146	446
											2EH04507525	56.3	2	156.3	172.8	200	195	437	184.8	200	206	446
	230-3-60	26.9	164	25.0	190			2.1	13.2	8.7	None	-	-	-	76.0	100	80	445	84.7	110	90	453
											2EH04502525	23.0	1	57.7	88.6	100	82	445	99.5	110	92	453
											2EH04505025	45.9	2	115.2	160.5	175	148	445	171.4	175	158	453
											2EH04507525	68.9	2	173.0	189.5	225	214	445	200.4	225	224	453
	460-3-60	12.0	94	12.2	100			1.0	6.1	4.3	None	-	-	-	35.4	45	37	240	39.7	50	42	244
											2EH04502546	23.0	1	28.9	43.8	45	40	240	49.1	50	45	244
											2EH04505046	45.9	2	57.6	79.6	80	73	240	85.0	90	78	244
											2EH04507546	68.9	2	86.5	94.1	110	106	240	99.5	110	111	244
	575-3-60	9.0	65	9.3	72			0.9	7.0	3.5	None	-	-	-	29.4	35	31	181	32.9	40	35	185
											2EH04502558	23.0	1	23.1	37.6	40	35	181	42.0	45	39	185
											2EH04505058	45.9	2	46.1	66.4	70	61	181	70.8	80	65	185
											2EH04507558	68.9	2	69.2	78.0	90	88	181	82.3	90	92	185
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	20.4	9.6	None	-	-	-	88.8	110	94	576	98.4	125	105	585
											2EH04502525	18.8	1	52.2	90.8	110	94	576	102.8	125	105	585
											2EH04505025	37.6	2	104.4	156.0	175	144	576	168.0	175	155	585
											2EH04507525	56.3	2	156.3	181.8	200	203	576	193.8	200	214	585
	230-3-60	28.8	223	28.2	240			2.1	20.4	8.7	None	-	-	-	88.8	110	94	575	97.5	125	104	584
											2EH04502525	23.0	1	57.7	97.6	110	94	575	108.5	125	104	584
											2EH04505025	45.9	2	115.2	169.5	175	156	575	180.4	200	166	584
											2EH04507525	68.9	2	173.0	198.5	225	222	575	209.4	225	232	584
	460-3-60	12.5	100	14.7	130			1.0	9.9	4.3	None	-	-	-	42.8	50	45	287	47.1	60	50	291
											2EH04502546	23.0	1	28.9	48.5	50	45	287	53.9	60	50	291
											2EH04505046	45.9	2	57.6	84.4	90	78	287	89.8	90	83	291
											2EH04507546	68.9	2	86.5	98.9	110	111	287	104.3	110	116	291
	575-3-60	9.7	70	11.3	94			0.9	7.0	3.5	None	-	-	-	32.6	40	34	208	36.1	45	38	212
											2EH04502558	23.0	1	23.1	37.6	40	35	208	42.0	45	39	212
											2EH04505058	45.9	2	46.1	66.4	70	61	208	70.8	80	65	212
											2EH04507558	68.9	2	69.2	78.0	90	88	208	82.3	90	92	212
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	30.0	9.6	None	-	-	-	114.3	125	122	619	123.9	150	133	629
											2EH04502525	18.8	1	52.2	114.3	125	122	619	123.9	150	133	629
											2EH04505025	37.6	2	104.4	168.0	175	155	619	180.0	200	166	629
											2EH04507525	56.3	2	156.3	193.8	200	214	619	205.8	225	225	629
	230-3-60	32.6	240	34.0	240			2.3	30.0	8.7	None	-	-	-	114.3	125	122	619	123.0	150	132	628
											2EH04502525	23.0	1	57.7	114.3	125	122	619	123.0	150	132	628
											2EH04505025	45.9	2	115.2	181.5	200	167	619	192.4	200	177	628
											2EH04507525	68.9	2	173.0	210.5	225	233	619	221.4	225	243	628
	460-3-60	14.8	130	16.0	140			1.3	14.3	4.3	None	-	-	-	54.3	70	58	341	58.6	70	63	345
											2EH04502546	23.0	1	28.9	54.0	70	58	341	59.4	70	63	345
											2EH04505046	45.9	2	57.6	89.9	90	83	341	95.3	100	88	345
											2EH04507546	68.9	2	86.5	104.4	110	116	341	109.8	110	121	345
	575-3-60	11.1	94	12.9	108			1.1	10.5	3.5	None	-	-	-	42.1	50	45	262	45.6	50	49	265
											2EH04502558	23.0	1	23.1	42.0	50	45	262	46.4	50	49	265
											2EH04505058	45.9	2	46.1	70.8	80	65	262	75.1	80	69	265
											2EH04507558	68.9	2	69.2	82.3	90	92	262	86.7	90	96	265

Table 36: AV15 to AV28 VFD 4 stage medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	30.0	9.6	None	-	-	-	135.3	175	144	741	144.9	175	155	751
											2EH04502525	18.8	1	52.2	135.3	175	144	741	144.9	175	155	751
											2EH04505025	37.6	2	104.4	168.0	175	155	741	180.0	200	166	751
											2EH04507525	56.3	2	156.3	193.8	200	214	741	205.8	225	225	751
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	30.0	8.7	None	-	-	-	135.3	175	144	741	144.0	175	154	750
											2EH04502525	23.0	1	57.7	135.3	175	144	741	144.0	175	154	750
											2EH04505025	45.9	2	115.2	181.5	200	167	741	192.4	200	177	750
											2EH04507525	68.9	2	173.0	210.5	225	233	741	221.4	225	243	750
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	14.3	4.3	None	-	-	-	64.7	80	69	368	69.0	80	74	372
											2EH04502546	23.0	1	28.9	54.0	80	69	368	59.4	80	74	372
											2EH04505046	45.9	2	57.6	89.9	90	83	368	95.3	100	88	372
											2EH04507546	68.9	2	86.5	104.4	110	116	368	109.8	110	121	372
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	10.5	3.5	None	-	-	-	51.2	60	54	290	54.7	70	58	293
											2EH04502558	23.0	1	23.1	42.0	60	54	290	46.4	70	58	293
											2EH04505058	45.9	2	46.1	70.8	80	65	290	75.1	80	69	293
											2EH04507558	68.9	2	69.2	82.3	90	92	290	86.7	90	96	293
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	9.6	None	-	-	-	162.1	200	172	806	171.7	200	183	816
											2EH04502525	18.8	1	52.2	162.1	200	172	806	171.7	200	183	816
											2EH04505025	37.6	2	104.4	180.0	200	172	806	192.0	200	183	816
											2EH04507525	56.3	2	156.3	205.8	225	225	806	217.8	250	236	816
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	8.7	None	-	-	-	162.1	200	172	806	170.8	200	182	815
											2EH04502525	23.0	1	57.7	162.1	200	172	806	170.8	200	182	815
											2EH04505025	45.9	2	115.2	193.5	200	178	806	204.4	225	188	815
											2EH04507525	68.9	2	173.0	222.5	250	244	806	233.4	250	254	815
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	18.7	4.3	None	-	-	-	76.3	90	81	440	80.6	100	86	445
											2EH04502546	23.0	1	28.9	59.5	90	81	440	64.9	100	86	445
											2EH04505046	45.9	2	57.6	95.4	100	88	440	100.8	110	93	445
											2EH04507546	68.9	2	86.5	109.9	125	121	440	115.3	125	126	445
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.9	3.5	None	-	-	-	60.6	80	64	355	64.1	80	68	358
											2EH04502558	23.0	1	23.1	45.0	80	64	355	49.4	80	68	358
											2EH04505058	45.9	2	46.1	73.8	80	68	355	78.1	80	72	358
											2EH04507558	68.9	2	69.2	85.3	90	94	355	89.7	100	98	358

Table 37: AV15 to AV28 VFD 4 stage medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.2	5.0	9.6	None	-	-	-	86.0	110	91	458	95.6	110	102	467
												2EH04502525	18.8	1	52.2	94.3	110	91	458	106.3	110	102	467
												2EH04505025	37.6	2	104.4	159.5	175	147	458	171.5	175	158	467
												2EH04507525	56.3	2	156.3	185.3	200	206	458	197.3	200	217	467
	230-3-60	26.9	164	25.0	190			2.1	13.2	5.0	8.7	None	-	-	-	86.0	110	91	466	94.7	110	101	474
												2EH04502525	23.0	1	57.7	101.1	110	93	466	112.0	125	103	474
												2EH04505025	45.9	2	115.2	173.0	175	159	466	183.9	200	169	474
												2EH04507525	68.9	2	173.0	202.0	225	226	466	212.9	225	236	474
	460-3-60	12.0	94	12.2	100			1.0	6.1	2.2	4.3	None	-	-	-	39.8	50	42	249	44.1	50	47	253
												2EH04502546	23.0	1	28.9	49.3	50	45	249	54.6	60	50	253
												2EH04505046	45.9	2	57.6	85.1	90	78	249	90.5	100	83	253
												2EH04507546	68.9	2	86.5	99.6	110	112	249	105.0	110	116	253
	575-3-60	9.0	65	9.3	72			0.9	7.0	1.5	3.5	None	-	-	-	32.4	40	35	187	35.9	45	39	191
												2EH04502558	23.0	1	23.1	41.4	45	38	187	45.8	50	42	191
												2EH04505058	45.9	2	46.1	70.1	80	65	187	74.5	80	69	191
												2EH04507558	68.9	2	69.2	81.7	90	91	187	86.1	90	95	191

Table 37: AV15 to AV28 VFD 4 stage medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	20.4	5.0	9.6	None	-	-	-	98.8	125	105	597	108.4	125	116	606
												2EH04502525	18.8	1	52.2	103.3	125	105	597	115.3	125	116	606
												2EH04505025	37.6	2	104.4	168.5	175	155	597	180.5	200	166	606
												2EH04507525	56.3	2	156.3	194.3	200	215	597	206.3	225	226	606
	230-3-60	28.8	223	28.2	240			2.1	20.4	5.0	8.7	None	-	-	-	98.8	125	105	596	107.5	125	115	605
												2EH04502525	23.0	1	57.7	110.1	125	105	596	121.0	125	115	605
												2EH04505025	45.9	2	115.2	182.0	200	167	596	192.9	200	177	605
												2EH04507525	68.9	2	173.0	211.0	225	234	596	221.9	225	244	605
	460-3-60	12.5	100	14.7	130			1.0	9.9	2.2	4.3	None	-	-	-	47.2	60	50	296	51.5	60	55	300
												2EH04502546	23.0	1	28.9	54.0	60	50	296	59.4	60	55	300
												2EH04505046	45.9	2	57.6	89.9	90	83	296	95.3	100	88	300
												2EH04507546	68.9	2	86.5	104.4	110	116	296	109.8	110	121	300
	575-3-60	9.7	70	11.3	94			0.9	7.0	1.5	3.5	None	-	-	-	35.6	45	38	214	39.1	50	42	218
												2EH04502558	23.0	1	23.1	41.4	45	38	214	45.8	50	42	218
												2EH04505058	45.9	2	46.1	70.1	80	65	214	74.5	80	69	218
												2EH04507558	68.9	2	69.2	81.7	90	91	214	86.1	90	95	218
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	30.0	5.0	9.6	None	-	-	-	124.3	150	133	640	133.9	150	144	650
												2EH04502525	18.8	1	52.2	124.3	150	133	640	133.9	150	144	650
												2EH04505025	37.6	2	104.4	180.5	200	166	640	192.5	200	177	650
												2EH04507525	56.3	2	156.3	206.3	225	226	640	218.3	225	237	650
	230-3-60	32.6	240	34.0	240			2.3	30.0	5.0	8.7	None	-	-	-	124.3	150	133	640	133.0	150	143	649
												2EH04502525	23.0	1	57.7	124.3	150	133	640	133.0	150	143	649
												2EH04505025	45.9	2	115.2	194.0	200	178	640	204.9	225	188	649
												2EH04507525	68.9	2	173.0	223.0	250	245	640	233.9	250	255	649
	460-3-60	14.8	130	16.0	140			1.3	14.3	2.2	4.3	None	-	-	-	58.7	70	63	350	63.0	70	68	354
												2EH04502546	23.0	1	28.9	59.5	70	58	350	64.9	70	63	354
												2EH04505046	45.9	2	57.6	95.4	100	88	350	100.8	110	93	354
												2EH04507546	68.9	2	86.5	109.9	110	121	350	115.3	125	126	354
	575-3-60	11.1	94	12.9	108			1.1	10.5	1.5	3.5	None	-	-	-	45.1	50	48	268	48.6	60	52	272
												2EH04502558	23.0	1	23.1	45.8	50	45	268	50.1	60	49	272
												2EH04505058	45.9	2	46.1	74.5	80	69	268	78.9	80	73	272
												2EH04507558	68.9	2	69.2	86.1	90	95	268	90.5	100	99	272
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	30.0	5.0	9.6	None	-	-	-	145.3	175	155	762	154.9	175	166	772
												2EH04502525	18.8	1	52.2	145.3	175	155	762	154.9	175	166	772
												2EH04505025	37.6	2	104.4	180.5	200	166	762	192.5	200	177	772
												2EH04507525	56.3	2	156.3	206.3	225	226	762	218.3	225	237	772
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	30.0	5.0	8.7	None	-	-	-	145.3	175	155	762	154.0	175	165	771
												2EH04502525	23.0	1	57.7	145.3	175	155	762	154.0	175	165	771
												2EH04505025	45.9	2	115.2	194.0	200	178	762	204.9	225	188	771
												2EH04507525	68.9	2	173.0	223.0	250	245	762	233.9	250	255	771
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	14.3	2.2	4.3	None	-	-	-	69.1	80	74	377	73.4	90	79	381
												2EH04502546	23.0	1	28.9	59.5	80	69	377	64.9	90	74	381
												2EH04505046	45.9	2	57.6	95.4	100	88	377	100.8	110	93	381
												2EH04507546	68.9	2	86.5	109.9	110	121	377	115.3	125	126	381
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	10.5	1.5	3.5	None	-	-	-	54.2	70	58	296	57.7	70	62	300
												2EH04502558	23.0	1	23.1	45.8	70	54	296	50.1	70	58	300
												2EH04505058	45.9	2	46.1	74.5	80	69	296	78.9	80	73	300
												2EH04507558	68.9	2	69.2	86.1	90	95	296	90.5	100	99	300

Table 37: AV15 to AV28 VFD 4 stage medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	5.0	9.6	None	-	-	-	172.1	200	183	827	181.7	225	194	837
												2EH04502525	18.8	1	52.2	172.1	200	183	827	181.7	225	194	837
												2EH04505025	37.6	2	104.4	192.5	200	183	827	204.5	225	194	837
												2EH04507525	56.3	2	156.3	218.3	250	237	827	230.3	250	248	837
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	5.0	8.7	None	-	-	-	172.1	200	183	827	180.8	225	193	836
												2EH04502525	23.0	1	57.7	172.1	200	183	827	180.8	225	193	836
												2EH04505025	45.9	2	115.2	206.0	225	190	827	216.9	225	200	836
												2EH04507525	68.9	2	173.0	235.0	250	256	827	245.9	250	266	836
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	18.7	2.2	4.3	None	-	-	-	80.7	100	86	449	85.0	100	91	454
												2EH04502546	23.0	1	28.9	65.0	100	81	449	70.4	100	86	454
												2EH04505046	45.9	2	57.6	100.9	110	93	449	106.3	110	98	454
												2EH04507546	68.9	2	86.5	115.4	125	126	449	120.8	125	131	454
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.9	1.5	3.5	None	-	-	-	63.6	80	67	361	67.1	80	71	364
												2EH04502558	23.0	1	23.1	48.8	80	64	361	53.1	80	68	364
												2EH04505058	45.9	2	46.1	77.5	80	71	361	81.9	90	75	364
												2EH04507558	68.9	2	69.2	89.1	100	98	361	93.5	100	102	364

Table 38: AV15 to AV28 VFD 4 stage medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.2	6.7	9.6	None	-	-	-	89.4	110	95	450	99.0	125	106	460
												2EH04502525	18.8	1	52.2	98.5	110	95	450	110.5	125	106	460
												2EH04505025	37.6	2	104.4	163.8	175	151	450	175.8	200	162	460
												2EH04507525	56.3	2	156.3	189.6	200	210	450	201.6	225	221	460
	230-3-60	26.9	164	25.0	190			2.1	13.2	6.7	8.7	None	-	-	-	89.4	110	95	458	98.1	125	105	467
												2EH04502525	23.0	1	57.7	105.4	110	97	458	116.3	125	107	467
												2EH04505025	45.9	2	115.2	177.3	200	163	458	188.1	200	173	467
												2EH04507525	68.9	2	173.0	206.3	225	230	458	217.1	225	240	467
	460-3-60	12.0	94	12.2	100			1.0	6.1	3.4	4.3	None	-	-	-	42.2	50	45	247	46.5	50	50	251
												2EH04502546	23.0	1	28.9	52.3	60	48	247	57.6	60	53	251
												2EH04505046	45.9	2	57.6	88.1	90	81	247	93.5	100	86	251
												2EH04507546	68.9	2	86.5	102.6	110	114	247	108.0	110	119	251
	575-3-60	9.0	65	9.3	72			0.9	7.0	2.7	3.5	None	-	-	-	34.8	40	37	186	38.3	45	41	190
												2EH04502558	23.0	1	23.1	44.4	45	41	186	48.8	50	45	190
												2EH04505058	45.9	2	46.1	73.1	80	67	186	77.5	80	71	190
												2EH04507558	68.9	2	69.2	84.7	90	94	186	89.1	90	98	190
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	20.4	6.7	9.6	None	-	-	-	102.2	125	109	589	111.8	125	120	599
												2EH04502525	18.8	1	52.2	107.5	125	109	589	119.5	125	120	599
												2EH04505025	37.6	2	104.4	172.8	175	159	589	184.8	200	170	599
												2EH04507525	56.3	2	156.3	198.6	200	219	589	210.6	225	230	599
	230-3-60	28.8	223	28.2	240			2.1	20.4	6.7	8.7	None	-	-	-	102.2	125	109	588	110.9	125	119	597
												2EH04502525	23.0	1	57.7	114.4	125	109	588	125.3	150	119	597
												2EH04505025	45.9	2	115.2	186.3	200	171	588	197.1	200	181	597
												2EH04507525	68.9	2	173.0	215.3	225	238	588	226.1	250	248	597
	460-3-60	12.5	100	14.7	130			1.0	9.9	3.4	4.3	None	-	-	-	49.6	60	53	293	53.9	60	58	298
												2EH04502546	23.0	1	28.9	57.0	60	53	293	62.4	70	58	298
												2EH04505046	45.9	2	57.6	92.9	100	85	293	98.3	100	90	298
												2EH04507546	68.9	2	86.5	107.4	110	119	293	112.8	125	124	298
	575-3-60	9.7	70	11.3	94			0.9	7.0	2.7	3.5	None	-	-	-	38.0	45	40	213	41.5	50	45	217
												2EH04502558	23.0	1	23.1	44.4	45	41	213	48.8	50	45	217
												2EH04505058	45.9	2	46.1	73.1	80	67	213	77.5	80	71	217
												2EH04507558	68.9	2	69.2	84.7	90	94	213	89.1	90	98	217

Table 38: AV15 to AV28 VFD 4 stage medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	30.0	6.7	9.6	None	-	-	-	127.7	150	137	633	137.3	150	148	642
												2EH04502525	18.8	1	52.2	127.7	150	137	633	137.3	150	148	642
												2EH04505025	37.6	2	104.4	184.8	200	170	633	196.8	200	181	642
												2EH04507525	56.3	2	156.3	210.6	225	230	633	222.6	225	241	642
	230-3-60	32.6	240	34.0	240			2.3	30.0	6.7	8.7	None	-	-	-	127.7	150	137	633	136.4	150	147	641
												2EH04502525	23.0	1	57.7	127.7	150	137	633	137.3	150	147	641
												2EH04505025	45.9	2	115.2	198.3	200	182	633	209.1	225	192	641
												2EH04507525	68.9	2	173.0	227.3	250	249	633	238.1	250	259	641
	460-3-60	14.8	130	16.0	140			1.3	14.3	3.4	4.3	None	-	-	-	61.1	70	66	348	65.4	80	71	352
												2EH04502546	23.0	1	28.9	62.5	70	66	348	67.9	80	71	352
												2EH04505046	45.9	2	57.6	98.4	100	91	348	103.8	110	95	352
												2EH04507546	68.9	2	86.5	112.9	125	124	348	118.3	125	129	352
	575-3-60	11.1	94	12.9	108			1.1	10.5	2.7	3.5	None	-	-	-	47.5	60	51	267	51.0	60	55	271
												2EH04502558	23.0	1	23.1	48.8	60	51	267	53.1	60	55	271
												2EH04505058	45.9	2	46.1	77.5	80	71	267	81.9	90	75	271
												2EH04507558	68.9	2	69.2	89.1	90	98	267	93.5	100	102	271
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	30.0	6.7	9.6	None	-	-	-	148.7	175	159	755	158.3	175	170	764
												2EH04502525	18.8	1	52.2	148.7	175	159	755	158.3	175	170	764
												2EH04505025	37.6	2	104.4	184.8	200	170	755	196.8	200	181	764
												2EH04507525	56.3	2	156.3	210.6	225	230	755	222.6	225	241	764
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	30.0	6.7	8.7	None	-	-	-	148.7	175	159	755	157.4	175	169	763
												2EH04502525	23.0	1	57.7	148.7	175	159	755	157.4	175	169	763
												2EH04505025	45.9	2	115.2	198.3	200	182	755	209.1	225	192	763
												2EH04507525	68.9	2	173.0	227.3	250	249	755	238.1	250	259	763
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	14.3	3.4	4.3	None	-	-	-	71.5	90	77	375	75.8	90	82	379
												2EH04502546	23.0	1	28.9	62.5	90	77	375	67.9	90	82	379
												2EH04505046	45.9	2	57.6	98.4	100	91	375	103.8	110	95	379
												2EH04507546	68.9	2	86.5	112.9	125	124	375	118.3	125	129	379
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	10.5	2.7	3.5	None	-	-	-	56.6	70	60	295	60.1	70	64	299
												2EH04502558	23.0	1	23.1	48.8	70	60	295	53.1	70	64	299
												2EH04505058	45.9	2	46.1	77.5	80	71	295	81.9	90	75	299
												2EH04507558	68.9	2	69.2	89.1	90	98	295	93.5	100	102	299
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	6.7	9.6	None	-	-	-	175.5	225	187	819	185.1	225	198	829
												2EH04502525	18.8	1	52.2	175.5	225	187	819	185.1	225	198	829
												2EH04505025	37.6	2	104.4	196.8	225	187	819	208.8	225	198	829
												2EH04507525	56.3	2	156.3	222.6	250	241	819	234.6	250	252	829
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	6.7	8.7	None	-	-	-	175.5	225	187	819	184.2	225	197	828
												2EH04502525	23.0	1	57.7	175.5	225	187	819	184.2	225	197	828
												2EH04505025	45.9	2	115.2	210.3	225	193	819	221.1	225	203	828
												2EH04507525	68.9	2	173.0	239.3	250	260	819	250.1	300	270	828
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	18.7	3.4	4.3	None	-	-	-	83.1	100	89	447	87.4	100	94	451
												2EH04502546	23.0	1	28.9	68.0	100	89	447	73.4	100	94	451
												2EH04505046	45.9	2	57.6	103.9	110	96	447	109.3	110	101	451
												2EH04507546	68.9	2	86.5	118.4	125	129	447	123.8	125	134	451
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.9	2.7	3.5	None	-	-	-	66.0	80	70	360	69.5	80	74	363
												2EH04502558	23.0	1	23.1	51.8	80	70	360	56.1	80	74	363
												2EH04505058	45.9	2	46.1	80.5	90	74	360	84.9	90	78	363
												2EH04507558	68.9	2	69.2	92.1	100	101	360	96.5	100	105	363

VFD 4 stage high static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 39: AV15 to AV28 VFD 4 stage high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating 120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	20.4	9.6	None	-	-	-	83.2	110	88	467	92.8	110	99	476
											2EH04502525	18.8	1	52.2	90.8	110	88	467	102.8	110	99	476
											2EH04505025	37.6	2	104.4	156.0	175	144	467	168.0	175	155	476
											2EH04507525	56.3	2	156.3	181.8	200	203	467	193.8	200	214	476
	230-3-60	26.9	164	25.0	190			2.1	20.4	8.7	None	-	-	-	83.2	110	88	466	91.9	110	98	475
											2EH04502525	23.0	1	57.7	97.6	110	90	466	108.5	110	100	475
											2EH04505025	45.9	2	115.2	169.5	175	156	466	180.4	200	166	475
											2EH04507525	68.9	2	173.0	198.5	225	222	466	209.4	225	232	475
	460-3-60	12.0	94	12.2	100			1.0	9.9	4.3	None	-	-	-	39.2	50	42	251	43.5	50	46	255
											2EH04502546	23.0	1	28.9	48.5	50	45	251	53.9	60	50	255
											2EH04505046	45.9	2	57.6	84.4	90	78	251	89.8	90	83	255
											2EH04507546	68.9	2	86.5	98.9	110	111	251	104.3	110	116	255
	575-3-60	9.0	65	9.3	72			0.9	7.0	3.5	None	-	-	-	29.4	35	31	181	32.9	40	35	185
											2EH04502558	23.0	1	23.1	37.6	40	35	181	42.0	45	39	185
											2EH04505058	45.9	2	46.1	66.4	70	61	181	70.8	80	65	185
											2EH04507558	68.9	2	69.2	78.0	90	88	181	82.3	90	92	185
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	30.0	9.6	None	-	-	-	98.7	125	105	593	108.3	125	116	603
											2EH04502525	18.8	1	52.2	102.8	125	105	593	114.8	125	116	603
											2EH04505025	37.6	2	104.4	168.0	175	155	593	180.0	200	166	603
											2EH04507525	56.3	2	156.3	193.8	200	214	593	205.8	225	225	603
	230-3-60	28.8	223	28.2	240			2.1	30.0	8.7	None	-	-	-	98.7	125	105	593	107.4	125	115	602
											2EH04502525	23.0	1	57.7	109.6	125	105	593	120.5	125	115	602
											2EH04505025	45.9	2	115.2	181.5	200	167	593	192.4	200	177	602
											2EH04507525	68.9	2	173.0	210.5	225	233	593	221.4	225	243	602
	460-3-60	12.5	100	14.7	130			1.0	14.3	4.3	None	-	-	-	47.2	60	50	296	51.5	60	55	300
											2EH04502546	23.0	1	28.9	54.0	60	50	296	59.4	60	55	300
											2EH04505046	45.9	2	57.6	89.9	90	83	296	95.3	100	88	300
											2EH04507546	68.9	2	86.5	104.4	110	116	296	109.8	110	121	300
	575-3-60	9.7	70	11.3	94			0.9	10.5	3.5	None	-	-	-	36.1	45	38	219	39.6	50	42	222
											2EH04502558	23.0	1	23.1	42.0	45	39	219	46.4	50	43	222
											2EH04505058	45.9	2	46.1	70.8	80	65	219	75.1	80	69	222
											2EH04507558	68.9	2	69.2	82.3	90	92	219	86.7	90	96	222
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	39.6	9.6	None	-	-	-	125.3	150	133	657	134.9	150	144	667
											2EH04502525	18.8	1	52.2	125.3	150	133	657	134.9	150	144	667
											2EH04505025	37.6	2	104.4	180.0	200	166	657	192.0	200	177	667
											2EH04507525	56.3	2	156.3	205.8	225	225	657	217.8	250	236	667
	230-3-60	32.6	240	34.0	240			2.3	39.6	8.7	None	-	-	-	125.3	150	133	657	134.0	150	143	666
											2EH04502525	23.0	1	57.7	125.3	150	133	657	134.0	150	143	666
											2EH04505025	45.9	2	115.2	193.5	200	178	657	204.4	225	188	666
											2EH04507525	68.9	2	173.0	222.5	250	244	657	233.4	250	254	666
	460-3-60	14.8	130	16.0	140			1.3	18.7	4.3	None	-	-	-	59.4	70	63	360	63.7	80	68	364
											2EH04502546	23.0	1	28.9	59.5	70	63	360	64.9	80	68	364
											2EH04505046	45.9	2	57.6	95.4	100	88	360	100.8	110	93	364
											2EH04507546	68.9	2	86.5	109.9	125	121	360	115.3	125	126	364
	575-3-60	11.1	94	12.9	108			1.1	12.9	3.5	None	-	-	-	44.5	50	47	292	48.0	60	52	296
											2EH04502558	23.0	1	23.1	45.0	50	47	292	49.4	60	52	296
											2EH04505058	45.9	2	46.1	73.8	80	68	292	78.1	80	72	296
											2EH04507558	68.9	2	69.2	85.3	90	94	292	89.7	100	98	296

Table 39: AV15 to AV28 VFD 4 stage high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating 120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	39.6	9.6	None	-	-	-	144.9	175	155	779	154.5	175	166	789
											2EH04502525	18.8	1	52.2	144.9	175	155	779	154.5	175	166	789
											2EH04505025	37.6	2	104.4	180.0	200	166	779	192.0	200	177	789
											2EH04507525	56.3	2	156.3	205.8	225	225	779	217.8	250	236	789
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	39.6	8.7	None	-	-	-	144.9	175	155	779	153.6	175	165	788
											2EH04502525	23.0	1	57.7	144.9	175	155	779	153.6	175	165	788
											2EH04505025	45.9	2	115.2	193.5	200	178	779	204.4	225	188	788
											2EH04507525	68.9	2	173.0	222.5	250	244	779	233.4	250	254	788
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	18.7	4.3	None	-	-	-	69.1	80	74	387	73.4	90	79	391
											2EH04502546	23.0	1	28.9	59.5	80	74	387	64.9	90	79	391
											2EH04505046	45.9	2	57.6	95.4	100	88	387	100.8	110	93	391
											2EH04507546	68.9	2	86.5	109.9	125	121	387	115.3	125	126	391
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	12.9	3.5	None	-	-	-	53.6	70	57	320	57.1	70	61	324
											2EH04502558	23.0	1	23.1	45.0	70	57	320	49.4	70	61	324
											2EH04505058	45.9	2	46.1	73.8	80	68	320	78.1	80	72	324
											2EH04507558	68.9	2	69.2	85.3	90	94	320	89.7	100	98	324
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	9.6	None	-	-	-	162.1	200	172	836	171.7	200	183	846
											2EH04502525	18.8	1	52.2	162.1	200	172	836	171.7	200	183	846
											2EH04505025	37.6	2	104.4	180.0	200	172	836	192.0	200	183	846
											2EH04507525	56.3	2	156.3	205.8	225	225	836	217.8	250	236	846
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	8.7	None	-	-	-	162.1	200	172	836	170.8	200	182	845
											2EH04502525	23.0	1	57.7	162.1	200	172	836	170.8	200	182	845
											2EH04505025	45.9	2	115.2	193.5	200	178	836	204.4	225	188	845
											2EH04507525	68.9	2	173.0	222.5	250	244	836	233.4	250	254	845
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	18.7	4.3	None	-	-	-	76.3	90	81	455	80.6	100	86	460
											2EH04502546	23.0	1	28.9	59.5	90	81	455	64.9	100	86	460
											2EH04505046	45.9	2	57.6	95.4	100	88	455	100.8	110	93	460
											2EH04507546	68.9	2	86.5	109.9	125	121	455	115.3	125	126	460
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.9	3.5	None	-	-	-	60.6	80	64	343	64.1	80	68	347
											2EH04502558	23.0	1	23.1	45.0	80	64	343	49.4	80	68	347
											2EH04505058	45.9	2	46.1	73.8	80	68	343	78.1	80	72	347
											2EH04507558	68.9	2	69.2	85.3	90	94	343	89.7	100	98	347

Table 40: AV15 to AV28 VFD 4 stage high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	20.4	5.0	9.6	None	-	-	-	93.2	110	99	488	102.8	125	111	497
												2EH04502525	18.8	1	52.2	103.3	110	99	488	115.3	125	111	497
												2EH04505025	37.6	2	104.4	168.5	175	155	488	180.5	200	166	497
												2EH04507525	56.3	2	156.3	194.3	200	215	488	206.3	225	226	497
	230-3-60	26.9	164	25.0	190			2.1	20.4	5.0	8.7	None	-	-	-	93.2	110	99	487	101.9	125	109	496
												2EH04502525	23.0	1	57.7	110.1	125	101	487	121.0	125	111	496
												2EH04505025	45.9	2	115.2	182.0	200	167	487	192.9	200	177	496
												2EH04507525	68.9	2	173.0	211.0	225	234	487	221.9	225	244	496
	460-3-60	12.0	94	12.2	100			1.0	9.9	2.2	4.3	None	-	-	-	43.6	50	47	260	47.9	60	52	264
												2EH04502546	23.0	1	28.9	54.0	60	50	260	59.4	60	55	264
												2EH04505046	45.9	2	57.6	89.9	90	83	260	95.3	100	88	264
												2EH04507546	68.9	2	86.5	104.4	110	116	260	109.8	110	121	264
	575-3-60	9.0	65	9.3	72			0.9	7.0	1.5	3.5	None	-	-	-	32.4	40	35	187	35.9	45	39	191
												2EH04502558	23.0	1	23.1	41.4	45	38	187	45.8	50	42	191
												2EH04505058	45.9	2	46.1	70.1	80	65	187	74.5	80	69	191
												2EH04507558	68.9	2	69.2	81.7	90	91	187	86.1	90	95	191

Table 40: AV15 to AV28 VFD 4 stage high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	30.0	5.0	9.6	None	-	-	-	108.7	125	116	614	118.3	125	127	624
												2EH04502525	18.8	1	52.2	115.3	125	116	614	127.3	150	127	624
												2EH04505025	37.6	2	104.4	180.5	200	166	614	192.5	200	177	624
												2EH04507525	56.3	2	156.3	206.3	225	226	614	218.3	225	237	624
	230-3-60	28.8	223	28.2	240			2.1	30.0	5.0	8.7	None	-	-	-	108.7	125	116	614	117.4	125	126	623
												2EH04502525	23.0	1	57.7	122.1	125	116	614	133.0	150	126	623
												2EH04505025	45.9	2	115.2	194.0	200	178	614	204.9	225	188	623
												2EH04507525	68.9	2	173.0	223.0	250	245	614	233.9	250	255	623
	460-3-60	12.5	100	14.7	130			1.0	14.3	2.2	4.3	None	-	-	-	51.6	60	55	305	55.9	70	60	309
												2EH04502546	23.0	1	28.9	59.5	60	55	305	64.9	70	60	309
												2EH04505046	45.9	2	57.6	95.4	100	88	305	100.8	110	93	309
												2EH04507546	68.9	2	86.5	109.9	110	121	305	115.3	125	126	309
	575-3-60	9.7	70	11.3	94			0.9	10.5	1.5	3.5	None	-	-	-	39.1	50	42	225	42.6	50	46	229
												2EH04502558	23.0	1	23.1	45.8	50	42	225	50.1	60	46	229
												2EH04505058	45.9	2	46.1	74.5	80	69	225	78.9	80	73	229
												2EH04507558	68.9	2	69.2	86.1	90	95	225	90.5	100	99	229
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	39.6	5.0	9.6	None	-	-	-	135.3	150	144	678	144.9	175	155	688
												2EH04502525	18.8	1	52.2	135.3	150	144	678	144.9	175	155	688
												2EH04505025	37.6	2	104.4	192.5	200	177	678	204.5	225	188	688
												2EH04507525	56.3	2	156.3	218.3	250	237	678	230.3	250	248	688
	230-3-60	32.6	240	34.0	240			2.3	39.6	5.0	8.7	None	-	-	-	135.3	150	144	678	144.0	175	154	687
												2EH04502525	23.0	1	57.7	135.3	150	144	678	145.0	175	154	687
												2EH04505025	45.9	2	115.2	206.0	225	190	678	216.9	225	200	687
												2EH04507525	68.9	2	173.0	235.0	250	256	678	245.9	250	266	687
	460-3-60	14.8	130	16.0	140			1.3	18.7	2.2	4.3	None	-	-	-	63.8	80	68	369	68.1	80	73	373
												2EH04502546	23.0	1	28.9	65.0	80	63	369	70.4	80	68	373
												2EH04505046	45.9	2	57.6	100.9	110	93	369	106.3	110	98	373
												2EH04507546	68.9	2	86.5	115.4	125	126	369	120.8	125	131	373
	575-3-60	11.1	94	12.9	108			1.1	12.9	1.5	3.5	None	-	-	-	47.5	60	51	299	51.0	60	55	302
												2EH04502558	23.0	1	23.1	48.8	60	47	299	53.1	60	52	302
												2EH04505058	45.9	2	46.1	77.5	80	71	299	81.9	90	75	302
												2EH04507558	68.9	2	69.2	89.1	100	98	299	93.5	100	102	302
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	39.6	5.0	9.6	None	-	-	-	154.9	175	166	800	164.5	200	177	810
												2EH04502525	18.8	1	52.2	154.9	175	166	800	164.5	200	177	810
												2EH04505025	37.6	2	104.4	192.5	200	177	800	204.5	225	188	810
												2EH04507525	56.3	2	156.3	218.3	250	237	800	230.3	250	248	810
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	39.6	5.0	8.7	None	-	-	-	154.9	175	166	800	163.6	200	176	809
												2EH04502525	23.0	1	57.7	154.9	175	166	800	163.6	200	176	809
												2EH04505025	45.9	2	115.2	206.0	225	190	800	216.9	225	200	809
												2EH04507525	68.9	2	173.0	235.0	250	256	800	245.9	250	266	809
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	18.7	2.2	4.3	None	-	-	-	73.5	90	79	396	77.8	90	84	400
												2EH04502546	23.0	1	28.9	65.0	90	74	396	70.4	90	79	400
												2EH04505046	45.9	2	57.6	100.9	110	93	396	106.3	110	98	400
												2EH04507546	68.9	2	86.5	115.4	125	126	396	120.8	125	131	400
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	12.9	1.5	3.5	None	-	-	-	56.6	70	60	327	60.1	70	64	330
												2EH04502558	23.0	1	23.1	48.8	70	57	327	53.1	70	61	330
												2EH04505058	45.9	2	46.1	77.5	80	71	327	81.9	90	75	330
												2EH04507558	68.9	2	69.2	89.1	100	98	327	93.5	100	102	330

Table 40: AV15 to AV28 VFD 4 stage high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	5.0	9.6	None	-	-	-	172.1	200	183	857	181.7	225	194	867
												2EH04502525	18.8	1	52.2	172.1	200	183	857	181.7	225	194	867
												2EH04505025	37.6	2	104.4	192.5	200	183	857	204.5	225	194	867
												2EH04507525	56.3	2	156.3	218.3	250	237	857	230.3	250	248	867
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	5.0	8.7	None	-	-	-	172.1	200	183	857	180.8	225	193	866
												2EH04502525	23.0	1	57.7	172.1	200	183	857	180.8	225	193	866
												2EH04505025	45.9	2	115.2	206.0	225	190	857	216.9	225	200	866
												2EH04507525	68.9	2	173.0	235.0	250	256	857	245.9	250	266	866
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	18.7	2.2	4.3	None	-	-	-	80.7	100	86	464	85.0	100	91	469
												2EH04502546	23.0	1	28.9	65.0	100	81	464	70.4	100	86	469
												2EH04505046	45.9	2	57.6	100.9	110	93	464	106.3	110	98	469
												2EH04507546	68.9	2	86.5	115.4	125	126	464	120.8	125	131	469
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.9	1.5	3.5	None	-	-	-	63.6	80	67	350	67.1	80	71	353
												2EH04502558	23.0	1	23.1	48.8	80	64	350	53.1	80	68	353
												2EH04505058	45.9	2	46.1	77.5	80	71	350	81.9	90	75	353
												2EH04507558	68.9	2	69.2	89.1	100	98	350	93.5	100	102	353

Table 41: AV15 to AV28 VFD 4 stage high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	20.4	6.7	9.6	None	-	-	-	96.6	110	103	480	106.2	125	114	490
												2EH04502525	18.8	1	52.2	107.5	110	103	480	119.5	125	114	490
												2EH04505025	37.6	2	104.4	172.8	175	159	480	184.8	200	170	490
												2EH04507525	56.3	2	156.3	198.6	200	219	480	210.6	225	230	490
	230-3-60	26.9	164	25.0	190			2.1	20.4	6.7	8.7	None	-	-	-	96.6	110	103	479	105.3	125	113	488
												2EH04502525	23.0	1	57.7	114.4	125	105	479	125.3	150	115	488
												2EH04505025	45.9	2	115.2	186.3	200	171	479	197.1	200	181	488
												2EH04507525	68.9	2	173.0	215.3	225	238	479	226.1	250	248	488
	460-3-60	12.0	94	12.2	100			1.0	9.9	3.4	4.3	None	-	-	-	46.0	50	49	257	50.3	60	54	262
												2EH04502546	23.0	1	28.9	57.0	60	52	257	62.4	70	57	262
												2EH04505046	45.9	2	57.6	92.9	100	85	257	98.3	100	90	262
												2EH04507546	68.9	2	86.5	107.4	110	119	257	112.8	125	124	262
	575-3-60	9.0	65	9.3	72			0.9	7.0	2.7	3.5	None	-	-	-	34.8	40	37	186	38.3	45	41	190
												2EH04502558	23.0	1	23.1	44.4	45	41	186	48.8	50	45	190
												2EH04505058	45.9	2	46.1	73.1	80	67	186	77.5	80	71	190
												2EH04507558	68.9	2	69.2	84.7	90	94	186	89.1	90	98	190
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	30.0	6.7	9.6	None	-	-	-	112.1	125	120	606	121.7	150	131	616
												2EH04502525	18.8	1	52.2	119.5	125	120	606	131.5	150	131	616
												2EH04505025	37.6	2	104.4	184.8	200	170	606	196.8	200	181	616
												2EH04507525	56.3	2	156.3	210.6	225	230	606	222.6	225	241	616
	230-3-60	28.8	223	28.2	240			2.1	30.0	6.7	8.7	None	-	-	-	112.1	125	120	606	120.8	150	130	615
												2EH04502525	23.0	1	57.7	126.4	150	120	606	137.3	150	130	615
												2EH04505025	45.9	2	115.2	198.3	200	182	606	209.1	225	192	615
												2EH04507525	68.9	2	173.0	227.3	250	249	606	238.1	250	259	615
	460-3-60	12.5	100	14.7	130			1.0	14.3	3.4	4.3	None	-	-	-	54.0	60	58	302	58.3	70	63	307
												2EH04502546	23.0	1	28.9	62.5	70	58	302	67.9	70	63	307
												2EH04505046	45.9	2	57.6	98.4	100	91	302	103.8	110	95	307
												2EH04507546	68.9	2	86.5	112.9	125	124	302	118.3	125	129	307
	575-3-60	9.7	70	11.3	94			0.9	10.5	2.7	3.5	None	-	-	-	41.5	50	45	224	45.0	50	49	228
												2EH04502558	23.0	1	23.1	48.8	50	45	224	53.1	60	49	228
												2EH04505058	45.9	2	46.1	77.5	80	71	224	81.9	90	75	228
												2EH04507558	68.9	2	69.2	89.1	90	98	224	93.5	100	102	228

Table 41: AV15 to AV28 VFD 4 stage high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	39.6	6.7	9.6	None	-	-	-	138.7	175	148	671	148.3	175	159	680
												2EH04502525	18.8	1	52.2	138.7	175	148	671	148.3	175	159	680
												2EH04505025	37.6	2	104.4	196.8	200	181	671	208.8	225	192	680
												2EH04507525	56.3	2	156.3	222.6	250	241	671	234.6	250	252	680
	230-3-60	32.6	240	34.0	240			2.3	39.6	6.7	8.7	None	-	-	-	138.7	175	148	671	147.4	175	158	679
												2EH04502525	23.0	1	57.7	138.7	175	148	671	149.3	175	158	679
												2EH04505025	45.9	2	115.2	210.3	225	193	671	221.1	225	203	679
												2EH04507525	68.9	2	173.0	239.3	250	260	671	250.1	300	270	679
	460-3-60	14.8	130	16.0	140			1.3	18.7	3.4	4.3	None	-	-	-	66.2	80	71	367	70.5	80	76	371
												2EH04502546	23.0	1	28.9	68.0	80	71	367	73.4	80	76	371
												2EH04505046	45.9	2	57.6	103.9	110	96	367	109.3	110	101	371
												2EH04507546	68.9	2	86.5	118.4	125	129	367	123.8	125	134	371
	575-3-60	11.1	94	12.9	108			1.1	12.9	2.7	3.5	None	-	-	-	49.9	60	54	298	53.4	60	58	301
												2EH04502558	23.0	1	23.1	51.8	60	54	298	56.1	60	58	301
												2EH04505058	45.9	2	46.1	80.5	90	74	298	84.9	90	78	301
												2EH04507558	68.9	2	69.2	92.1	100	101	298	96.5	100	105	301
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	39.6	6.7	9.6	None	-	-	-	158.3	175	170	793	167.9	200	181	802
												2EH04502525	18.8	1	52.2	158.3	175	170	793	167.9	200	181	802
												2EH04505025	37.6	2	104.4	196.8	200	181	793	208.8	225	192	802
												2EH04507525	56.3	2	156.3	222.6	250	241	793	234.6	250	252	802
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	39.6	6.7	8.7	None	-	-	-	158.3	175	170	793	167.0	200	180	801
												2EH04502525	23.0	1	57.7	158.3	175	170	793	167.0	200	180	801
												2EH04505025	45.9	2	115.2	210.3	225	193	793	221.1	225	203	801
												2EH04507525	68.9	2	173.0	239.3	250	260	793	250.1	300	270	801
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	18.7	3.4	4.3	None	-	-	-	75.9	90	82	394	80.2	90	87	398
												2EH04502546	23.0	1	28.9	68.0	90	82	394	73.4	90	87	398
												2EH04505046	45.9	2	57.6	103.9	110	96	394	109.3	110	101	398
												2EH04507546	68.9	2	86.5	118.4	125	129	394	123.8	125	134	398
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	12.9	2.7	3.5	None	-	-	-	59.0	70	63	326	62.5	70	67	329
												2EH04502558	23.0	1	23.1	51.8	70	63	326	56.1	70	67	329
												2EH04505058	45.9	2	46.1	80.5	90	74	326	84.9	90	78	329
												2EH04507558	68.9	2	69.2	92.1	100	101	326	96.5	100	105	329
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	6.7	9.6	None	-	-	-	175.5	225	187	849	185.1	225	198	859
												2EH04502525	18.8	1	52.2	175.5	225	187	849	185.1	225	198	859
												2EH04505025	37.6	2	104.4	196.8	225	187	849	208.8	225	198	859
												2EH04507525	56.3	2	156.3	222.6	250	241	849	234.6	250	252	859
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	39.6	6.7	8.7	None	-	-	-	175.5	225	187	849	184.2	225	197	858
												2EH04502525	23.0	1	57.7	175.5	225	187	849	184.2	225	197	858
												2EH04505025	45.9	2	115.2	210.3	225	193	849	221.1	225	203	858
												2EH04507525	68.9	2	173.0	239.3	250	260	849	250.1	300	270	858
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	18.7	3.4	4.3	None	-	-	-	83.1	100	89	462	87.4	100	94	466
												2EH04502546	23.0	1	28.9	68.0	100	89	462	73.4	100	94	466
												2EH04505046	45.9	2	57.6	103.9	110	96	462	109.3	110	101	466
												2EH04507546	68.9	2	86.5	118.4	125	129	462	123.8	125	134	466
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.9	2.7	3.5	None	-	-	-	66.0	80	70	349	69.5	80	74	352
												2EH04502558	23.0	1	23.1	51.8	80	70	349	56.1	80	74	352
												2EH04505058	45.9	2	46.1	80.5	90	74	349	84.9	90	78	352
												2EH04507558	68.9	2	69.2	92.1	100	101	349	96.5	100	105	352

VFD Customer Supplied standard static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 42: AV15 to AV28 VFD Customer Supplied standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	8.9	9.6	None	-	-	-	71.7	90	75	426	81.3	100	86	435
											2EH04502525	18.8	1	52.2	76.4	90	75	426	88.4	100	86	435
											2EH04505025	37.6	2	104.4	141.6	150	130	426	153.6	175	141	435
											2EH04507525	56.3	2	156.3	167.4	200	190	426	179.4	200	201	435
	230-3-60	26.9	164	25.0	190			2.1	8.2	8.7	None	-	-	-	71.0	90	74	433	79.7	100	84	442
											2EH04502525	23.0	1	57.7	82.4	90	76	433	93.3	100	86	442
											2EH04505025	45.9	2	115.2	154.3	175	142	433	165.1	175	152	442
											2EH04507525	68.9	2	173.0	183.3	200	208	433	194.1	225	218	442
	460-3-60	12.0	94	12.2	100			1.0	4.1	4.3	None	-	-	-	33.4	45	35	234	37.7	45	40	238
											2EH04502546	23.0	1	28.9	41.3	45	38	234	46.6	50	43	238
											2EH04505046	45.9	2	57.6	77.1	80	71	234	82.5	90	76	238
											2EH04507546	68.9	2	86.5	91.6	100	104	234	97.0	110	109	238
	575-3-60	9.0	65	9.3	72			0.9	3.2	3.5	None	-	-	-	25.6	30	27	167	29.1	35	31	171
											2EH04502558	23.0	1	23.1	32.9	35	30	167	37.3	40	34	171
											2EH04505058	45.9	2	46.1	61.6	70	57	167	66.0	70	61	171
											2EH04507558	68.9	2	69.2	73.2	80	83	167	77.6	80	87	171
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	9.9	9.6	None	-	-	-	78.3	100	82	546	87.9	110	93	555
											2EH04502525	18.8	1	52.2	78.3	100	82	546	89.6	110	93	555
											2EH04505025	37.6	2	104.4	142.9	150	131	546	154.9	175	142	555
											2EH04507525	56.3	2	156.3	168.7	200	191	546	180.7	200	202	555
	230-3-60	28.8	223	28.2	240			2.1	9.4	8.7	None	-	-	-	77.8	100	81	554	86.5	110	91	562
											2EH04502525	23.0	1	57.7	83.9	100	81	554	94.8	110	91	562
											2EH04505025	45.9	2	115.2	155.8	175	143	554	166.6	175	153	562
											2EH04507525	68.9	2	173.0	184.8	200	210	554	195.6	225	220	562
	460-3-60	12.5	100	14.7	130			1.0	4.7	4.3	None	-	-	-	37.6	50	39	276	41.9	50	44	280
											2EH04502546	23.0	1	28.9	42.0	50	39	276	47.4	50	44	280
											2EH04505046	45.9	2	57.6	77.9	80	72	276	83.3	90	77	280
											2EH04507546	68.9	2	86.5	92.4	100	105	276	97.8	110	110	280
	575-3-60	9.7	70	11.3	94			0.9	4.3	3.5	None	-	-	-	29.9	40	31	208	33.4	40	35	212
											2EH04502558	23.0	1	23.1	34.3	40	32	208	38.6	40	36	212
											2EH04505058	45.9	2	46.1	63.0	70	58	208	67.4	70	62	212
											2EH04507558	68.9	2	69.2	74.6	80	85	208	79.0	90	89	212
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	13.5	9.6	None	-	-	-	97.8	125	103	602	107.4	125	114	612
											2EH04502525	18.8	1	52.2	97.8	125	103	602	107.4	125	114	612
											2EH04505025	37.6	2	104.4	147.4	150	136	602	159.4	175	147	612
											2EH04507525	56.3	2	156.3	173.2	200	195	602	185.2	200	206	612
	230-3-60	32.6	240	34.0	240			2.3	13.4	8.7	None	-	-	-	97.7	125	103	601	106.4	125	113	610
											2EH04502525	23.0	1	57.7	97.7	125	103	601	106.4	125	113	610
											2EH04505025	45.9	2	115.2	160.8	175	148	601	171.6	175	158	610
											2EH04507525	68.9	2	173.0	189.8	225	214	601	200.6	225	224	610
	460-3-60	14.8	130	16.0	140			1.3	6.7	4.3	None	-	-	-	46.7	60	49	332	51.0	60	54	336
											2EH04502546	23.0	1	28.9	44.5	60	49	332	49.9	60	54	336
											2EH04505046	45.9	2	57.6	80.4	90	74	332	85.8	90	79	336
											2EH04507546	68.9	2	86.5	94.9	110	107	332	100.3	110	112	336
	575-3-60	11.1	94	12.9	108			1.1	5.4	3.5	None	-	-	-	37.0	45	39	251	40.5	50	43	254
											2EH04502558	23.0	1	23.1	35.6	45	39	251	40.0	50	43	254
											2EH04505058	45.9	2	46.1	64.4	70	59	251	68.8	70	63	254
											2EH04507558	68.9	2	69.2	76.0	90	86	251	80.3	90	90	254

Table 42: AV15 to AV28 VFD Customer Supplied standard static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	13.5	9.6	None	-	-	-	118.8	150	125	724	128.4	150	136	734
											2EH04502525	18.8	1	52.2	118.8	150	125	724	128.4	150	136	734
											2EH04505025	37.6	2	104.4	147.4	150	136	724	159.4	175	147	734
											2EH04507525	56.3	2	156.3	173.2	200	195	724	185.2	200	206	734
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	13.4	8.7	None	-	-	-	118.7	150	125	723	127.4	150	135	732
											2EH04502525	23.0	1	57.7	118.7	150	125	723	127.4	150	135	732
											2EH04505025	45.9	2	115.2	160.8	175	148	723	171.6	175	158	732
											2EH04507525	68.9	2	173.0	189.8	225	214	723	200.6	225	224	732
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	6.7	4.3	None	-	-	-	57.1	70	60	359	61.4	80	65	363
											2EH04502546	23.0	1	28.9	44.5	70	60	359	49.9	80	65	363
											2EH04505046	45.9	2	57.6	80.4	90	74	359	85.8	90	79	363
											2EH04507546	68.9	2	86.5	94.9	110	107	359	100.3	110	112	363
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	5.4	3.5	None	-	-	-	46.1	60	48	279	49.6	60	52	282
											2EH04502558	23.0	1	23.1	35.6	60	48	279	40.0	60	52	282
											2EH04505058	45.9	2	46.1	64.4	70	59	279	68.8	70	63	282
											2EH04507558	68.9	2	69.2	76.0	90	86	279	80.3	90	90	282
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	19.8	9.6	None	-	-	-	142.3	175	149	768	151.9	200	160	778
											2EH04502525	18.8	1	52.2	142.3	175	149	768	151.9	200	160	778
											2EH04505025	37.6	2	104.4	155.3	175	149	768	167.3	200	160	778
											2EH04507525	56.3	2	156.3	181.1	200	203	768	193.1	200	214	778
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	19.8	8.7	None	-	-	-	142.3	175	149	768	151.0	200	159	777
											2EH04502525	23.0	1	57.7	142.3	175	149	768	151.0	200	159	777
											2EH04505025	45.9	2	115.2	168.8	175	155	768	179.6	200	165	777
											2EH04507525	68.9	2	173.0	197.8	225	222	768	208.6	225	232	777
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	9.9	4.3	None	-	-	-	67.5	80	71	421	71.8	90	76	426
											2EH04502546	23.0	1	28.9	48.5	80	71	421	53.9	90	76	426
											2EH04505046	45.9	2	57.6	84.4	90	78	421	89.8	90	83	426
											2EH04507546	68.9	2	86.5	98.9	110	111	421	104.3	110	116	426
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	7.9	3.5	None	-	-	-	55.6	70	58	324	59.1	70	62	327
											2EH04502558	23.0	1	23.1	38.8	70	58	324	43.1	70	62	327
											2EH04505058	45.9	2	46.1	67.5	70	62	324	71.9	80	66	327
											2EH04507558	68.9	2	69.2	79.1	90	89	324	83.5	90	93	327

Table 43: AV15 to AV28 VFD CS standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	8.9	5.0	9.6	None	-	-	-	81.7	100	86	447	91.3	110	97	456
												2EH04502525	18.8	1	52.2	88.9	100	86	447	100.9	110	97	456
												2EH04505025	37.6	2	104.4	154.1	175	142	447	166.1	175	153	456
												2EH04507525	56.3	2	156.3	179.9	200	201	447	191.9	200	213	456
	230-3-60	26.9	164	25.0	190			2.1	8.2	5.0	8.7	None	-	-	-	81.0	100	85	454	89.7	110	95	463
												2EH04502525	23.0	1	57.7	94.9	100	87	454	105.8	110	97	463
												2EH04505025	45.9	2	115.2	166.8	175	153	454	177.6	200	163	463
												2EH04507525	68.9	2	173.0	195.8	225	220	454	206.6	225	230	463
	460-3-60	12.0	94	12.2	100			1.0	4.1	2.2	4.3	None	-	-	-	37.8	50	40	243	42.1	50	45	248
												2EH04502546	23.0	1	28.9	46.8	50	43	243	52.1	60	48	248
												2EH04505046	45.9	2	57.6	82.6	90	76	243	88.0	90	81	248
												2EH04507546	68.9	2	86.5	97.1	110	109	243	102.5	110	114	248
	575-3-60	9.0	65	9.3	72			0.9	3.2	1.5	3.5	None	-	-	-	28.6	35	30	174	32.1	40	34	177
												2EH04502558	23.0	1	23.1	36.6	40	34	174	41.0	45	38	177
												2EH04505058	45.9	2	46.1	65.4	70	60	174	69.8	70	64	177
												2EH04507558	68.9	2	69.2	77.0	80	87	174	81.3	90	91	177

Table 43: AV15 to AV28 VFD CS standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	9.9	5.0	9.6	None	-	-	-	88.3	110	93	567	97.9	125	104	576
												2EH04502525	18.8	1	52.2	90.1	110	93	567	102.1	125	104	576
												2EH04505025	37.6	2	104.4	155.4	175	143	567	167.4	175	154	576
												2EH04507525	56.3	2	156.3	181.2	200	203	567	193.2	200	214	576
	230-3-60	28.8	223	28.2	240			2.1	9.4	5.0	8.7	None	-	-	-	87.8	110	93	575	96.5	125	103	583
												2EH04502525	23.0	1	57.7	96.4	110	93	575	107.3	125	103	583
												2EH04505025	45.9	2	115.2	168.3	175	155	575	179.1	200	165	583
												2EH04507525	68.9	2	173.0	197.3	225	221	575	208.1	225	231	583
	460-3-60	12.5	100	14.7	130			1.0	4.7	2.2	4.3	None	-	-	-	42.0	50	44	285	46.3	60	49	289
												2EH04502546	23.0	1	28.9	47.5	50	44	285	52.9	60	49	289
												2EH04505046	45.9	2	57.6	83.4	90	77	285	88.8	90	82	289
												2EH04507546	68.9	2	86.5	97.9	110	110	285	103.3	110	115	289
	575-3-60	9.7	70	11.3	94			0.9	4.3	1.5	3.5	None	-	-	-	32.9	40	35	214	36.4	45	39	218
												2EH04502558	23.0	1	23.1	38.0	40	35	214	42.4	45	39	218
												2EH04505058	45.9	2	46.1	66.8	70	61	214	71.1	80	65	218
												2EH04507558	68.9	2	69.2	78.3	90	88	214	82.7	90	92	218
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	13.5	5.0	9.6	None	-	-	-	107.8	125	114	623	117.4	150	125	633
												2EH04502525	18.8	1	52.2	107.8	125	114	623	117.4	150	125	633
												2EH04505025	37.6	2	104.4	159.9	175	147	623	171.9	175	158	633
												2EH04507525	56.3	2	156.3	185.7	200	207	623	197.7	200	218	633
	230-3-60	32.6	240	34.0	240			2.3	13.4	5.0	8.7	None	-	-	-	107.7	125	114	622	116.4	150	124	631
												2EH04502525	23.0	1	57.7	107.7	125	114	622	116.4	150	124	631
												2EH04505025	45.9	2	115.2	173.3	175	159	622	184.1	200	169	631
												2EH04507525	68.9	2	173.0	202.3	225	226	622	213.1	225	236	631
	460-3-60	14.8	130	16.0	140			1.3	6.7	2.2	4.3	None	-	-	-	51.1	60	54	341	55.4	70	59	345
												2EH04502546	23.0	1	28.9	50.0	60	49	341	55.4	70	54	345
												2EH04505046	45.9	2	57.6	85.9	90	79	341	91.3	100	84	345
												2EH04507546	68.9	2	86.5	100.4	110	112	341	105.8	110	117	345
	575-3-60	11.1	94	12.9	108			1.1	5.4	1.5	3.5	None	-	-	-	40.0	50	42	257	43.5	50	46	261
												2EH04502558	23.0	1	23.1	39.4	50	39	257	43.8	50	43	261
												2EH04505058	45.9	2	46.1	68.1	70	63	257	72.5	80	67	261
												2EH04507558	68.9	2	69.2	79.7	90	89	257	84.1	90	93	261
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	13.5	5.0	9.6	None	-	-	-	128.8	150	136	745	138.4	175	147	755
												2EH04502525	18.8	1	52.2	128.8	150	136	745	138.4	175	147	755
												2EH04505025	37.6	2	104.4	159.9	175	147	745	171.9	175	158	755
												2EH04507525	56.3	2	156.3	185.7	200	207	745	197.7	200	218	755
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	13.4	5.0	8.7	None	-	-	-	128.7	150	136	744	137.4	175	146	753
												2EH04502525	23.0	1	57.7	128.7	150	136	744	137.4	175	146	753
												2EH04505025	45.9	2	115.2	173.3	175	159	744	184.1	200	169	753
												2EH04507525	68.9	2	173.0	202.3	225	226	744	213.1	225	236	753
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	6.7	2.2	4.3	None	-	-	-	61.5	80	65	368	65.8	80	70	372
												2EH04502546	23.0	1	28.9	50.0	80	60	368	55.4	80	65	372
												2EH04505046	45.9	2	57.6	85.9	90	79	368	91.3	100	84	372
												2EH04507546	68.9	2	86.5	100.4	110	112	368	105.8	110	117	372
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	5.4	1.5	3.5	None	-	-	-	49.1	60	52	285	52.6	60	56	289
												2EH04502558	23.0	1	23.1	39.4	60	48	285	43.8	60	52	289
												2EH04505058	45.9	2	46.1	68.1	70	63	285	72.5	80	67	289
												2EH04507558	68.9	2	69.2	79.7	90	89	285	84.1	90	93	289

Table 43: AV15 to AV28 VFD CS standard static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	19.8	5.0	9.6	None	-	-	-	152.3	200	160	789	161.9	200	171	799
												2EH04502525	18.8	1	52.2	152.3	200	160	789	161.9	200	171	799
												2EH04505025	37.6	2	104.4	167.8	200	160	789	179.8	200	171	799
												2EH04507525	56.3	2	156.3	193.6	200	214	789	205.6	225	225	799
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	19.8	5.0	8.7	None	-	-	-	152.3	200	160	789	161.0	200	170	798
												2EH04502525	23.0	1	57.7	152.3	200	160	789	161.0	200	170	798
												2EH04505025	45.9	2	115.2	181.3	200	167	789	192.1	200	177	798
												2EH04507525	68.9	2	173.0	210.3	225	233	789	221.1	225	243	798
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	9.9	2.2	4.3	None	-	-	-	71.9	90	76	430	76.2	90	81	435
												2EH04502546	23.0	1	28.9	54.0	90	71	430	59.4	90	76	435
												2EH04505046	45.9	2	57.6	89.9	90	83	430	95.3	100	88	435
												2EH04507546	68.9	2	86.5	104.4	110	116	430	109.8	110	121	435
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	7.9	1.5	3.5	None	-	-	-	58.6	70	62	330	62.1	80	66	334
												2EH04502558	23.0	1	23.1	42.5	70	58	330	46.9	80	62	334
												2EH04505058	45.9	2	46.1	71.3	80	66	330	75.6	80	70	334
												2EH04507558	68.9	2	69.2	82.8	90	92	330	87.2	90	96	334

Table 44: AV15 to AV28 VFD CS standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	8.9	6.7	9.6	None	-	-	-	85.1	110	90	439	94.7	110	101	449
												2EH04502525	18.8	1	52.2	93.1	110	90	439	105.1	110	101	449
												2EH04505025	37.6	2	104.4	158.4	175	146	439	170.4	175	157	449
												2EH04507525	56.3	2	156.3	184.2	200	205	439	196.2	200	216	449
	230-3-60	26.9	164	25.0	190			2.1	8.2	6.7	8.7	None	-	-	-	84.4	110	89	446	93.1	110	99	455
												2EH04502525	23.0	1	57.7	99.1	110	91	446	110.0	125	101	455
												2EH04505025	45.9	2	115.2	171.0	175	157	446	181.9	200	167	455
												2EH04507525	68.9	2	173.0	200.0	225	224	446	210.9	225	234	455
	460-3-60	12.0	94	12.2	100			1.0	4.1	3.4	4.3	None	-	-	-	40.2	50	43	241	44.5	50	48	245
												2EH04502546	23.0	1	28.9	49.8	50	46	241	55.1	60	51	245
												2EH04505046	45.9	2	57.6	85.6	90	79	241	91.0	100	84	245
												2EH04507546	68.9	2	86.5	100.1	110	112	241	105.5	110	117	245
	575-3-60	9.0	65	9.3	72			0.9	3.2	2.7	3.5	None	-	-	-	31.0	40	33	173	34.5	40	37	176
												2EH04502558	23.0	1	23.1	39.6	40	36	173	44.0	45	40	176
												2EH04505058	45.9	2	46.1	68.4	70	63	173	72.8	80	67	176
												2EH04507558	68.9	2	69.2	80.0	90	89	173	84.3	90	93	176
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	9.9	6.7	9.6	None	-	-	-	91.7	110	97	559	101.3	125	108	569
												2EH04502525	18.8	1	52.2	94.4	110	97	559	106.4	125	108	569
												2EH04505025	37.6	2	104.4	159.6	175	147	559	171.6	175	158	569
												2EH04507525	56.3	2	156.3	185.4	200	207	559	197.4	200	218	569
	230-3-60	28.8	223	28.2	240			2.1	9.4	6.7	8.7	None	-	-	-	91.2	110	97	567	99.9	125	107	576
												2EH04502525	23.0	1	57.7	100.6	110	97	567	111.5	125	107	576
												2EH04505025	45.9	2	115.2	172.5	175	159	567	183.4	200	169	576
												2EH04507525	68.9	2	173.0	201.5	225	225	567	212.4	225	235	576
	460-3-60	12.5	100	14.7	130			1.0	4.7	3.4	4.3	None	-	-	-	44.4	50	47	283	48.7	60	52	287
												2EH04502546	23.0	1	28.9	50.5	60	47	283	55.9	60	52	287
												2EH04505046	45.9	2	57.6	86.4	90	79	283	91.8	100	84	287
												2EH04507546	68.9	2	86.5	100.9	110	113	283	106.3	110	118	287
	575-3-60	9.7	70	11.3	94			0.9	4.3	2.7	3.5	None	-	-	-	35.3	45	37	213	38.8	50	41	217
												2EH04502558	23.0	1	23.1	41.0	45	38	213	45.4	50	42	217
												2EH04505058	45.9	2	46.1	69.8	70	64	213	74.1	80	68	217
												2EH04507558	68.9	2	69.2	81.3	90	91	213	85.7	90	95	217

Table 44: AV15 to AV28 VFD CS standard static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	13.5	6.7	9.6	None	-	-	-	111.2	125	118	615	120.8	150	129	625
												2EH04502525	18.8	1	52.2	111.2	125	118	615	120.8	150	129	625
												2EH04505025	37.6	2	104.4	164.1	175	151	615	176.1	200	162	625
												2EH04507525	56.3	2	156.3	189.9	200	211	615	201.9	225	222	625
	230-3-60	32.6	240	34.0	240			2.3	13.4	6.7	8.7	None	-	-	-	111.1	125	118	615	119.8	150	128	623
												2EH04502525	23.0	1	57.7	111.1	125	118	615	119.8	150	128	623
												2EH04505025	45.9	2	115.2	177.5	200	163	615	188.4	200	173	623
												2EH04507525	68.9	2	173.0	206.5	225	230	615	217.4	225	240	623
	460-3-60	14.8	130	16.0	140			1.3	6.7	3.4	4.3	None	-	-	-	53.5	60	57	339	57.8	70	62	343
												2EH04502546	23.0	1	28.9	53.0	60	57	339	58.4	70	62	343
												2EH04505046	45.9	2	57.6	88.9	90	82	339	94.3	100	87	343
												2EH04507546	68.9	2	86.5	103.4	110	115	339	108.8	110	120	343
	575-3-60	11.1	94	12.9	108			1.1	5.4	2.7	3.5	None	-	-	-	42.4	50	45	256	45.9	50	49	260
												2EH04502558	23.0	1	23.1	42.4	50	45	256	46.8	50	49	260
												2EH04505058	45.9	2	46.1	71.1	80	65	256	75.5	80	69	260
												2EH04507558	68.9	2	69.2	82.7	90	92	256	87.1	90	96	260
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	13.5	6.7	9.6	None	-	-	-	132.2	150	140	737	141.8	175	151	747
												2EH04502525	18.8	1	52.2	132.2	150	140	737	141.8	175	151	747
												2EH04505025	37.6	2	104.4	164.1	175	151	737	176.1	200	162	747
												2EH04507525	56.3	2	156.3	189.9	200	211	737	201.9	225	222	747
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	13.4	6.7	8.7	None	-	-	-	132.1	150	140	737	140.8	175	150	745
												2EH04502525	23.0	1	57.7	132.1	150	140	737	140.8	175	150	745
												2EH04505025	45.9	2	115.2	177.5	200	163	737	188.4	200	173	745
												2EH04507525	68.9	2	173.0	206.5	225	230	737	217.4	225	240	745
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	6.7	3.4	4.3	None	-	-	-	63.9	80	68	366	68.2	80	73	370
												2EH04502546	23.0	1	28.9	53.0	80	68	366	58.4	80	73	370
												2EH04505046	45.9	2	57.6	88.9	90	82	366	94.3	100	87	370
												2EH04507546	68.9	2	86.5	103.4	110	115	366	108.8	110	120	370
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	5.4	2.7	3.5	None	-	-	-	51.5	60	54	284	55.0	70	58	288
												2EH04502558	23.0	1	23.1	42.4	60	54	284	46.8	70	58	288
												2EH04505058	45.9	2	46.1	71.1	80	65	284	75.5	80	69	288
												2EH04507558	68.9	2	69.2	82.7	90	92	284	87.1	90	96	288
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	19.8	6.7	9.6	None	-	-	-	155.7	200	164	781	165.3	200	175	791
												2EH04502525	18.8	1	52.2	155.7	200	164	781	165.3	200	175	791
												2EH04505025	37.6	2	104.4	172.0	200	164	781	184.0	200	175	791
												2EH04507525	56.3	2	156.3	197.8	200	218	781	209.8	225	229	791
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	19.8	6.7	8.7	None	-	-	-	155.7	200	164	781	164.4	200	174	790
												2EH04502525	23.0	1	57.7	155.7	200	164	781	164.4	200	174	790
												2EH04505025	45.9	2	115.2	185.5	200	171	781	196.4	200	181	790
												2EH04507525	68.9	2	173.0	214.5	225	237	781	225.4	250	247	790
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	9.9	3.4	4.3	None	-	-	-	74.3	90	79	428	78.6	100	84	432
												2EH04502546	23.0	1	28.9	57.0	90	79	428	62.4	100	84	432
												2EH04505046	45.9	2	57.6	92.9	100	85	428	98.3	100	90	432
												2EH04507546	68.9	2	86.5	107.4	110	119	428	112.8	125	124	432
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	7.9	2.7	3.5	None	-	-	-	61.0	80	64	329	64.5	80	68	333
												2EH04502558	23.0	1	23.1	45.5	80	64	329	49.9	80	68	333
												2EH04505058	45.9	2	46.1	74.3	80	68	329	78.6	80	72	333
												2EH04507558	68.9	2	69.2	85.8	90	95	329	90.2	100	99	333

VFD Customer Supplied medium static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 45: AV15 to AV28 VFD Customer Supplied medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	9.9	9.6	None	-	-	-	72.7	90	76	437	82.3	100	87	446
											2EH04502525	18.8	1	52.2	77.6	90	76	437	89.6	100	87	446
											2EH04505025	37.6	2	104.4	142.9	150	131	437	154.9	175	142	446
											2EH04507525	56.3	2	156.3	168.7	200	191	437	180.7	200	202	446
	230-3-60	26.9	164	25.0	190			2.1	9.4	8.7	None	-	-	-	72.2	90	75	445	80.9	100	85	453
											2EH04502525	23.0	1	57.7	83.9	90	77	445	94.8	100	87	453
											2EH04505025	45.9	2	115.2	155.8	175	143	445	166.6	175	153	453
											2EH04507525	68.9	2	173.0	184.8	200	210	445	195.6	225	220	453
	460-3-60	12.0	94	12.2	100			1.0	4.7	4.3	None	-	-	-	34.0	45	36	240	38.3	50	40	244
											2EH04502546	23.0	1	28.9	42.0	45	39	240	47.4	50	44	244
											2EH04505046	45.9	2	57.6	77.9	80	72	240	83.3	90	77	244
											2EH04507546	68.9	2	86.5	92.4	100	105	240	97.8	110	110	244
	575-3-60	9.0	65	9.3	72			0.9	4.3	3.5	None	-	-	-	26.7	35	28	181	30.2	35	32	185
											2EH04502558	23.0	1	23.1	34.3	35	32	181	38.6	40	36	185
											2EH04505058	45.9	2	46.1	63.0	70	58	181	67.4	70	62	185
											2EH04507558	68.9	2	69.2	74.6	80	85	181	79.0	90	89	185
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	13.5	9.6	None	-	-	-	81.9	110	86	576	91.5	110	97	585
											2EH04502525	18.8	1	52.2	82.1	110	86	576	94.1	110	97	585
											2EH04505025	37.6	2	104.4	147.4	150	136	576	159.4	175	147	585
											2EH04507525	56.3	2	156.3	173.2	200	195	576	185.2	200	206	585
	230-3-60	28.8	223	28.2	240			2.1	13.4	8.7	None	-	-	-	81.8	110	86	575	90.5	110	96	584
											2EH04502525	23.0	1	57.7	88.9	110	86	575	99.8	110	96	584
											2EH04505025	45.9	2	115.2	160.8	175	148	575	171.6	175	158	584
											2EH04507525	68.9	2	173.0	189.8	225	214	575	200.6	225	224	584
	460-3-60	12.5	100	14.7	130			1.0	6.7	4.3	None	-	-	-	39.6	50	41	287	43.9	50	46	291
											2EH04502546	23.0	1	28.9	44.5	50	41	287	49.9	50	46	291
											2EH04505046	45.9	2	57.6	80.4	90	74	287	85.8	90	79	291
											2EH04507546	68.9	2	86.5	94.9	110	107	287	100.3	110	112	291
	575-3-60	9.7	70	11.3	94			0.9	5.4	3.5	None	-	-	-	31.0	40	32	208	34.5	45	36	212
											2EH04502558	23.0	1	23.1	35.6	40	33	208	40.0	45	37	212
											2EH04505058	45.9	2	46.1	64.4	70	59	208	68.8	70	63	212
											2EH04507558	68.9	2	69.2	76.0	90	86	208	80.3	90	90	212
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	19.8	9.6	None	-	-	-	104.1	125	110	619	113.7	125	121	629
											2EH04502525	18.8	1	52.2	104.1	125	110	619	113.7	125	121	629
											2EH04505025	37.6	2	104.4	155.3	175	143	619	167.3	175	154	629
											2EH04507525	56.3	2	156.3	181.1	200	203	619	193.1	200	214	629
	230-3-60	32.6	240	34.0	240			2.3	19.8	8.7	None	-	-	-	104.1	125	110	619	112.8	125	120	628
											2EH04502525	23.0	1	57.7	104.1	125	110	619	112.8	125	120	628
											2EH04505025	45.9	2	115.2	168.8	175	155	619	179.6	200	165	628
											2EH04507525	68.9	2	173.0	197.8	225	222	619	208.6	225	232	628
	460-3-60	14.8	130	16.0	140			1.3	9.9	4.3	None	-	-	-	49.9	60	53	341	54.2	70	58	345
											2EH04502546	23.0	1	28.9	48.5	60	53	341	53.9	70	58	345
											2EH04505046	45.9	2	57.6	84.4	90	78	341	89.8	90	83	345
											2EH04507546	68.9	2	86.5	98.9	110	111	341	104.3	110	116	345
	575-3-60	11.1	94	12.9	108			1.1	7.9	3.5	None	-	-	-	39.5	50	42	262	43.0	50	46	265
											2EH04502558	23.0	1	23.1	38.8	50	42	262	43.1	50	46	265
											2EH04505058	45.9	2	46.1	67.5	70	62	262	71.9	80	66	265
											2EH04507558	68.9	2	69.2	79.1	90	89	262	83.5	90	93	265

Table 45: AV15 to AV28 VFD Customer Supplied medium static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	19.8	9.6	None	-	-	-	125.1	150	132	741	134.7	175	143	751
											2EH04502525	18.8	1	52.2	125.1	150	132	741	134.7	175	143	751
											2EH04505025	37.6	2	104.4	155.3	175	143	741	167.3	175	154	751
											2EH04507525	56.3	2	156.3	181.1	200	203	741	193.1	200	214	751
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	19.8	8.7	None	-	-	-	125.1	150	132	741	133.8	150	142	750
											2EH04502525	23.0	1	57.7	125.1	150	132	741	133.8	150	142	750
											2EH04505025	45.9	2	115.2	168.8	175	155	741	179.6	200	165	750
											2EH04507525	68.9	2	173.0	197.8	225	222	741	208.6	225	232	750
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	9.9	4.3	None	-	-	-	60.3	70	64	368	64.6	80	69	372
											2EH04502546	23.0	1	28.9	48.5	70	64	368	53.9	80	69	372
											2EH04505046	45.9	2	57.6	84.4	90	78	368	89.8	90	83	372
											2EH04507546	68.9	2	86.5	98.9	110	111	368	104.3	110	116	372
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	7.9	3.5	None	-	-	-	48.6	60	51	290	52.1	60	55	293
											2EH04502558	23.0	1	23.1	38.8	60	51	290	43.1	60	55	293
											2EH04505058	45.9	2	46.1	67.5	70	62	290	71.9	80	66	293
											2EH04507558	68.9	2	69.2	79.1	90	89	290	83.5	90	93	293
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	25.4	9.6	None	-	-	-	147.9	175	155	806	157.5	200	166	816
											2EH04502525	18.8	1	52.2	147.9	175	155	806	157.5	200	166	816
											2EH04505025	37.6	2	104.4	162.3	175	155	806	174.3	200	166	816
											2EH04507525	56.3	2	156.3	188.1	200	209	806	200.1	225	220	816
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	25.4	8.7	None	-	-	-	147.9	175	155	806	156.6	200	165	815
											2EH04502525	23.0	1	57.7	147.9	175	155	806	156.6	200	165	815
											2EH04505025	45.9	2	115.2	175.8	200	162	806	186.6	200	172	815
											2EH04507525	68.9	2	173.0	204.8	225	228	806	215.6	225	238	815
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	12.7	4.3	None	-	-	-	70.3	90	74	440	74.6	90	79	445
											2EH04502546	23.0	1	28.9	52.0	90	74	440	57.4	90	79	445
											2EH04505046	45.9	2	57.6	87.9	90	81	440	93.3	100	86	445
											2EH04507546	68.9	2	86.5	102.4	110	114	440	107.8	110	119	445
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	10.5	3.5	None	-	-	-	58.2	70	61	355	61.7	80	65	358
											2EH04502558	23.0	1	23.1	42.0	70	61	355	46.4	80	65	358
											2EH04505058	45.9	2	46.1	70.8	80	65	355	75.1	80	69	358
											2EH04507558	68.9	2	69.2	82.3	90	92	355	86.7	90	96	358

Table 46: AV15 to AV28 VFD CS medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	9.9	5.0	9.6	None	-	-	-	82.7	100	87	458	92.3	110	98	467
												2EH04502525	18.8	1	52.2	90.1	100	87	458	102.1	110	98	467
												2EH04505025	37.6	2	104.4	155.4	175	143	458	167.4	175	154	467
												2EH04507525	56.3	2	156.3	181.2	200	203	458	193.2	200	214	467
	230-3-60	26.9	164	25.0	190			2.1	9.4	5.0	8.7	None	-	-	-	82.2	100	87	466	90.9	110	97	474
												2EH04502525	23.0	1	57.7	96.4	100	89	466	107.3	110	99	474
												2EH04505025	45.9	2	115.2	168.3	175	155	466	179.1	200	165	474
												2EH04507525	68.9	2	173.0	197.3	225	221	466	208.1	225	231	474
	460-3-60	12.0	94	12.2	100			1.0	4.7	2.2	4.3	None	-	-	-	38.4	50	41	249	42.7	50	46	253
												2EH04502546	23.0	1	28.9	47.5	50	44	249	52.9	60	49	253
												2EH04505046	45.9	2	57.6	83.4	90	77	249	88.8	90	82	253
												2EH04507546	68.9	2	86.5	97.9	110	110	249	103.3	110	115	253
	575-3-60	9.0	65	9.3	72			0.9	4.3	1.5	3.5	None	-	-	-	29.7	35	32	187	33.2	40	36	191
												2EH04502558	23.0	1	23.1	38.0	40	35	187	42.4	45	39	191
												2EH04505058	45.9	2	46.1	66.8	70	61	187	71.1	80	65	191
												2EH04507558	68.9	2	69.2	78.3	90	88	187	82.7	90	92	191

Table 46: AV15 to AV28 VFD CS medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	13.5	5.0	9.6	None	-	-	-	91.9	110	97	597	101.5	125	108	606
												2EH04502525	18.8	1	52.2	94.6	110	97	597	106.6	125	108	606
												2EH04505025	37.6	2	104.4	159.9	175	147	597	171.9	175	158	606
												2EH04507525	56.3	2	156.3	185.7	200	207	597	197.7	200	218	606
	230-3-60	28.8	223	28.2	240			2.1	13.4	5.0	8.7	None	-	-	-	91.8	110	97	596	100.5	125	107	605
												2EH04502525	23.0	1	57.7	101.4	110	97	596	112.3	125	107	605
												2EH04505025	45.9	2	115.2	173.3	175	159	596	184.1	200	169	605
												2EH04507525	68.9	2	173.0	202.3	225	226	596	213.1	225	236	605
	460-3-60	12.5	100	14.7	130			1.0	6.7	2.2	4.3	None	-	-	-	44.0	50	46	296	48.3	60	51	300
												2EH04502546	23.0	1	28.9	50.0	60	46	296	55.4	60	51	300
												2EH04505046	45.9	2	57.6	85.9	90	79	296	91.3	100	84	300
												2EH04507546	68.9	2	86.5	100.4	110	112	296	105.8	110	117	300
	575-3-60	9.7	70	11.3	94			0.9	5.4	1.5	3.5	None	-	-	-	34.0	45	36	214	37.5	45	40	218
												2EH04502558	23.0	1	23.1	39.4	45	36	214	43.8	45	40	218
												2EH04505058	45.9	2	46.1	68.1	70	63	214	72.5	80	67	218
												2EH04507558	68.9	2	69.2	79.7	90	89	214	84.1	90	93	218
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	19.8	5.0	9.6	None	-	-	-	114.1	125	121	640	123.7	150	132	650
												2EH04502525	18.8	1	52.2	114.1	125	121	640	123.7	150	132	650
												2EH04505025	37.6	2	104.4	167.8	175	154	640	179.8	200	165	650
												2EH04507525	56.3	2	156.3	193.6	200	214	640	205.6	225	225	650
	230-3-60	32.6	240	34.0	240			2.3	19.8	5.0	8.7	None	-	-	-	114.1	125	121	640	122.8	150	131	649
												2EH04502525	23.0	1	57.7	114.1	125	121	640	122.8	150	131	649
												2EH04505025	45.9	2	115.2	181.3	200	167	640	192.1	200	177	649
												2EH04507525	68.9	2	173.0	210.3	225	233	640	221.1	225	243	649
	460-3-60	14.8	130	16.0	140			1.3	9.9	2.2	4.3	None	-	-	-	54.3	70	58	350	58.6	70	63	354
												2EH04502546	23.0	1	28.9	54.0	70	53	350	59.4	70	58	354
												2EH04505046	45.9	2	57.6	89.9	90	83	350	95.3	100	88	354
												2EH04507546	68.9	2	86.5	104.4	110	116	350	109.8	110	121	354
	575-3-60	11.1	94	12.9	108			1.1	7.9	1.5	3.5	None	-	-	-	42.5	50	45	268	46.0	50	49	272
												2EH04502558	23.0	1	23.1	42.5	50	42	268	46.9	50	46	272
												2EH04505058	45.9	2	46.1	71.3	80	66	268	75.6	80	70	272
												2EH04507558	68.9	2	69.2	82.8	90	92	268	87.2	90	96	272
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	19.8	5.0	9.6	None	-	-	-	135.1	175	144	762	144.7	175	155	772
												2EH04502525	18.8	1	52.2	135.1	175	144	762	144.7	175	155	772
												2EH04505025	37.6	2	104.4	167.8	175	154	762	179.8	200	165	772
												2EH04507525	56.3	2	156.3	193.6	200	214	762	205.6	225	225	772
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	19.8	5.0	8.7	None	-	-	-	135.1	175	144	762	143.8	175	154	771
												2EH04502525	23.0	1	57.7	135.1	175	144	762	143.8	175	154	771
												2EH04505025	45.9	2	115.2	181.3	200	167	762	192.1	200	177	771
												2EH04507525	68.9	2	173.0	210.3	225	233	762	221.1	225	243	771
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	9.9	2.2	4.3	None	-	-	-	64.7	80	69	377	69.0	80	74	381
												2EH04502546	23.0	1	28.9	54.0	80	64	377	59.4	80	69	381
												2EH04505046	45.9	2	57.6	89.9	90	83	377	95.3	100	88	381
												2EH04507546	68.9	2	86.5	104.4	110	116	377	109.8	110	121	381
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	7.9	1.5	3.5	None	-	-	-	51.6	60	55	296	55.1	70	59	300
												2EH04502558	23.0	1	23.1	42.5	60	51	296	46.9	70	55	300
												2EH04505058	45.9	2	46.1	71.3	80	66	296	75.6	80	70	300
												2EH04507558	68.9	2	69.2	82.8	90	92	296	87.2	90	96	300

Table 46: AV15 to AV28 VFD CS medium static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	25.4	5.0	9.6	None	-	-	-	157.9	200	167	827	167.5	200	178	837
												2EH04502525	18.8	1	52.2	157.9	200	167	827	167.5	200	178	837
												2EH04505025	37.6	2	104.4	174.8	200	167	827	186.8	200	178	837
												2EH04507525	56.3	2	156.3	200.6	225	220	827	212.6	225	231	837
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	25.4	5.0	8.7	None	-	-	-	157.9	200	167	827	166.6	200	177	836
												2EH04502525	23.0	1	57.7	157.9	200	167	827	166.6	200	177	836
												2EH04505025	45.9	2	115.2	188.3	200	173	827	199.1	200	183	836
												2EH04507525	68.9	2	173.0	217.3	225	240	827	228.1	250	250	836
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	12.7	2.2	4.3	None	-	-	-	74.7	90	79	449	79.0	100	84	454
												2EH04502546	23.0	1	28.9	57.5	90	74	449	62.9	100	79	454
												2EH04505046	45.9	2	57.6	93.4	100	86	449	98.8	100	91	454
												2EH04507546	68.9	2	86.5	107.9	110	119	449	113.3	125	124	454
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	10.5	1.5	3.5	None	-	-	-	61.2	80	65	361	64.7	80	69	364
												2EH04502558	23.0	1	23.1	45.8	80	61	361	50.1	80	65	364
												2EH04505058	45.9	2	46.1	74.5	80	69	361	78.9	80	73	364
												2EH04507558	68.9	2	69.2	86.1	90	95	361	90.5	100	99	364

Table 47: AV15 to AV28 VFD CS medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	9.9	6.7	9.6	None	-	-	-	86.1	110	91	450	95.7	110	102	460
												2EH04502525	18.8	1	52.2	94.4	110	91	450	106.4	110	102	460
												2EH04505025	37.6	2	104.4	159.6	175	147	450	171.6	175	158	460
												2EH04507525	56.3	2	156.3	185.4	200	207	450	197.4	200	218	460
	230-3-60	26.9	164	25.0	190			2.1	9.4	6.7	8.7	None	-	-	-	85.6	110	91	458	94.3	110	101	467
												2EH04502525	23.0	1	57.7	100.6	110	93	458	111.5	125	103	467
												2EH04505025	45.9	2	115.2	172.5	175	159	458	183.4	200	169	467
												2EH04507525	68.9	2	173.0	201.5	225	225	458	212.4	225	235	467
	460-3-60	12.0	94	12.2	100			1.0	4.7	3.4	4.3	None	-	-	-	40.8	50	43	247	45.1	50	48	251
												2EH04502546	23.0	1	28.9	50.5	60	46	247	55.9	60	51	251
												2EH04505046	45.9	2	57.6	86.4	90	79	247	91.8	100	84	251
												2EH04507546	68.9	2	86.5	100.9	110	113	247	106.3	110	118	251
	575-3-60	9.0	65	9.3	72			0.9	4.3	2.7	3.5	None	-	-	-	32.1	40	34	186	35.6	40	38	190
												2EH04502558	23.0	1	23.1	41.0	45	38	186	45.4	50	42	190
												2EH04505058	45.9	2	46.1	69.8	70	64	186	74.1	80	68	190
												2EH04507558	68.9	2	69.2	81.3	90	91	186	85.7	90	95	190
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	13.5	6.7	9.6	None	-	-	-	95.3	110	101	589	104.9	125	112	599
												2EH04502525	18.8	1	52.2	98.9	110	101	589	110.9	125	112	599
												2EH04505025	37.6	2	104.4	164.1	175	151	589	176.1	200	162	599
												2EH04507525	56.3	2	156.3	189.9	200	211	589	201.9	225	222	599
	230-3-60	28.8	223	28.2	240			2.1	13.4	6.7	8.7	None	-	-	-	95.2	110	101	588	103.9	125	111	597
												2EH04502525	23.0	1	57.7	105.6	110	101	588	116.5	125	111	597
												2EH04505025	45.9	2	115.2	177.5	200	163	588	188.4	200	173	597
												2EH04507525	68.9	2	173.0	206.5	225	230	588	217.4	225	240	597
	460-3-60	12.5	100	14.7	130			1.0	6.7	3.4	4.3	None	-	-	-	46.4	60	49	293	50.7	60	54	298
												2EH04502546	23.0	1	28.9	53.0	60	49	293	58.4	60	54	298
												2EH04505046	45.9	2	57.6	88.9	90	82	293	94.3	100	87	298
												2EH04507546	68.9	2	86.5	103.4	110	115	293	108.8	110	120	298
	575-3-60	9.7	70	11.3	94			0.9	5.4	2.7	3.5	None	-	-	-	36.4	45	39	213	39.9	50	43	217
												2EH04502558	23.0	1	23.1	42.4	45	39	213	46.8	50	43	217
												2EH04505058	45.9	2	46.1	71.1	80	65	213	75.5	80	69	217
												2EH04507558	68.9	2	69.2	82.7	90	92	213	87.1	90	96	217

Table 47: AV15 to AV28 VFD CS medium static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	19.8	6.7	9.6	None	-	-	-	117.5	150	125	633	127.1	150	136	642
												2EH04502525	18.8	1	52.2	117.5	150	125	633	127.1	150	136	642
												2EH04505025	37.6	2	104.4	172.0	175	158	633	184.0	200	169	642
												2EH04507525	56.3	2	156.3	197.8	200	218	633	209.8	225	229	642
	230-3-60	32.6	240	34.0	240			2.3	19.8	6.7	8.7	None	-	-	-	117.5	150	125	633	126.2	150	135	641
												2EH04502525	23.0	1	57.7	117.5	150	125	633	126.2	150	135	641
												2EH04505025	45.9	2	115.2	185.5	200	171	633	196.4	200	181	641
												2EH04507525	68.9	2	173.0	214.5	225	237	633	225.4	250	247	641
	460-3-60	14.8	130	16.0	140			1.3	9.9	3.4	4.3	None	-	-	-	56.7	70	61	348	61.0	70	66	352
												2EH04502546	23.0	1	28.9	57.0	70	61	348	62.4	70	66	352
												2EH04505046	45.9	2	57.6	92.9	100	85	348	98.3	100	90	352
												2EH04507546	68.9	2	86.5	107.4	110	119	348	112.8	125	124	352
	575-3-60	11.1	94	12.9	108			1.1	7.9	2.7	3.5	None	-	-	-	44.9	50	48	267	48.4	60	52	271
												2EH04502558	23.0	1	23.1	45.5	50	48	267	49.9	60	52	271
												2EH04505058	45.9	2	46.1	74.3	80	68	267	78.6	80	72	271
												2EH04507558	68.9	2	69.2	85.8	90	95	267	90.2	100	99	271
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	19.8	6.7	9.6	None	-	-	-	138.5	175	147	755	148.1	175	158	764
												2EH04502525	18.8	1	52.2	138.5	175	147	755	148.1	175	158	764
												2EH04505025	37.6	2	104.4	172.0	175	158	755	184.0	200	169	764
												2EH04507525	56.3	2	156.3	197.8	200	218	755	209.8	225	229	764
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	19.8	6.7	8.7	None	-	-	-	138.5	175	147	755	147.2	175	157	763
												2EH04502525	23.0	1	57.7	138.5	175	147	755	147.2	175	157	763
												2EH04505025	45.9	2	115.2	185.5	200	171	755	196.4	200	181	763
												2EH04507525	68.9	2	173.0	214.5	225	237	755	225.4	250	247	763
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	9.9	3.4	4.3	None	-	-	-	67.1	80	72	375	71.4	90	77	379
												2EH04502546	23.0	1	28.9	57.0	80	72	375	62.4	90	77	379
												2EH04505046	45.9	2	57.6	92.9	100	85	375	98.3	100	90	379
												2EH04507546	68.9	2	86.5	107.4	110	119	375	112.8	125	124	379
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	7.9	2.7	3.5	None	-	-	-	54.0	70	57	295	57.5	70	61	299
												2EH04502558	23.0	1	23.1	45.5	70	57	295	49.9	70	61	299
												2EH04505058	45.9	2	46.1	74.3	80	68	295	78.6	80	72	299
												2EH04507558	68.9	2	69.2	85.8	90	95	295	90.2	100	99	299
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	25.4	6.7	9.6	None	-	-	-	161.3	200	171	819	170.9	200	182	829
												2EH04502525	18.8	1	52.2	161.3	200	171	819	170.9	200	182	829
												2EH04505025	37.6	2	104.4	179.0	200	171	819	191.0	200	182	829
												2EH04507525	56.3	2	156.3	204.8	225	224	819	216.8	225	235	829
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	25.4	6.7	8.7	None	-	-	-	161.3	200	171	819	170.0	200	181	828
												2EH04502525	23.0	1	57.7	161.3	200	171	819	170.0	200	181	828
												2EH04505025	45.9	2	115.2	192.5	200	177	819	203.4	225	187	828
												2EH04507525	68.9	2	173.0	221.5	225	244	819	232.4	250	254	828
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	12.7	3.4	4.3	None	-	-	-	77.1	90	82	447	81.4	100	87	451
												2EH04502546	23.0	1	28.9	60.5	90	82	447	65.9	100	87	451
												2EH04505046	45.9	2	57.6	96.4	100	89	447	101.8	110	94	451
												2EH04507546	68.9	2	86.5	110.9	125	122	447	116.3	125	127	451
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	10.5	2.7	3.5	None	-	-	-	63.6	80	67	360	67.1	80	71	363
												2EH04502558	23.0	1	23.1	48.8	80	67	360	53.1	80	71	363
												2EH04505058	45.9	2	46.1	77.5	80	71	360	81.9	90	75	363
												2EH04507558	68.9	2	69.2	89.1	90	98	360	93.5	100	102	363

VFD Customer Supplied high static

Note:

- MCA = minimum circuit ampacity
- f/b = fuse/breaker
- Fuse is a dual element, time delay type
- Breaker is a HACR type per NEC

Table 48: AV15 to AV28 VFD CS high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.5	9.6	None	-	-	-	76.3	100	80	467	85.9	110	91	476
											2EH04502525	18.8	1	52.2	82.1	100	80	467	94.1	110	91	476
											2EH04505025	37.6	2	104.4	147.4	150	136	467	159.4	175	147	476
											2EH04507525	56.3	2	156.3	173.2	200	195	467	185.2	200	206	476
	230-3-60	26.9	164	25.0	190			2.1	13.4	8.7	None	-	-	-	76.2	100	80	466	84.9	110	90	475
											2EH04502525	23.0	1	57.7	88.9	100	82	466	99.8	110	92	475
											2EH04505025	45.9	2	115.2	160.8	175	148	466	171.6	175	158	475
											2EH04507525	68.9	2	173.0	189.8	225	214	466	200.6	225	224	475
	460-3-60	12.0	94	12.2	100			1.0	6.7	4.3	None	-	-	-	36.0	45	38	251	40.3	50	43	255
											2EH04502546	23.0	1	28.9	44.5	45	41	251	49.9	50	46	255
											2EH04505046	45.9	2	57.6	80.4	90	74	251	85.8	90	79	255
											2EH04507546	68.9	2	86.5	94.9	110	107	251	100.3	110	112	255
	575-3-60	9.0	65	9.3	72			0.9	5.4	3.5	None	-	-	-	27.8	35	29	181	31.3	40	33	185
											2EH04502558	23.0	1	23.1	35.6	40	33	181	40.0	45	37	185
											2EH04505058	45.9	2	46.1	64.4	70	59	181	68.8	70	63	185
											2EH04507558	68.9	2	69.2	76.0	90	86	181	80.3	90	90	185
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	19.8	9.6	None	-	-	-	88.2	110	93	593	97.8	125	104	603
											2EH04502525	18.8	1	52.2	90.0	110	93	593	102.0	125	104	603
											2EH04505025	37.6	2	104.4	155.3	175	143	593	167.3	175	154	603
											2EH04507525	56.3	2	156.3	181.1	200	203	593	193.1	200	214	603
	230-3-60	28.8	223	28.2	240			2.1	19.8	8.7	None	-	-	-	88.2	110	93	593	96.9	125	103	602
											2EH04502525	23.0	1	57.7	96.9	110	93	593	107.8	125	103	602
											2EH04505025	45.9	2	115.2	168.8	175	155	593	179.6	200	165	602
											2EH04507525	68.9	2	173.0	197.8	225	222	593	208.6	225	232	602
	460-3-60	12.5	100	14.7	130			1.0	9.9	4.3	None	-	-	-	42.8	50	45	296	47.1	60	50	300
											2EH04502546	23.0	1	28.9	48.5	50	45	296	53.9	60	50	300
											2EH04505046	45.9	2	57.6	84.4	90	78	296	89.8	90	83	300
											2EH04507546	68.9	2	86.5	98.9	110	111	296	104.3	110	116	300
	575-3-60	9.7	70	11.3	94			0.9	7.9	3.5	None	-	-	-	33.5	40	35	219	37.0	45	39	222
											2EH04502558	23.0	1	23.1	38.8	40	36	219	43.1	45	40	222
											2EH04505058	45.9	2	46.1	67.5	70	62	219	71.9	80	66	222
											2EH04507558	68.9	2	69.2	79.1	90	89	219	83.5	90	93	222
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	25.4	9.6	None	-	-	-	109.7	125	116	657	119.3	150	127	667
											2EH04502525	18.8	1	52.2	109.7	125	116	657	119.3	150	127	667
											2EH04505025	37.6	2	104.4	162.3	175	149	657	174.3	175	160	667
											2EH04507525	56.3	2	156.3	188.1	200	209	657	200.1	225	220	667
	230-3-60	32.6	240	34.0	240			2.3	25.4	8.7	None	-	-	-	109.7	125	116	657	118.4	150	126	666
											2EH04502525	23.0	1	57.7	109.7	125	116	657	118.4	150	126	666
											2EH04505025	45.9	2	115.2	175.8	200	162	657	186.6	200	172	666
											2EH04507525	68.9	2	173.0	204.8	225	228	657	215.6	225	238	666
	460-3-60	14.8	130	16.0	140			1.3	12.7	4.3	None	-	-	-	52.7	60	56	360	57.0	70	61	364
											2EH04502546	23.0	1	28.9	52.0	60	56	360	57.4	70	61	364
											2EH04505046	45.9	2	57.6	87.9	90	81	360	93.3	100	86	364
											2EH04507546	68.9	2	86.5	102.4	110	114	360	107.8	110	119	364
	575-3-60	11.1	94	12.9	108			1.1	10.5	3.5	None	-	-	-	42.1	50	45	292	45.6	50	49	296
											2EH04502558	23.0	1	23.1	42.0	50	45	292	46.4	50	49	296
											2EH04505058	45.9	2	46.1	70.8	80	65	292	75.1	80	69	296
											2EH04507558	68.9	2	69.2	82.3	90	92	292	86.7	90	96	296

Table 48: AV15 to AV28 VFD CS high static without power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA				Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	25.4	9.6	None	-	-	-	130.7	150	138	779	140.3	175	150	789
											2EH04502525	18.8	1	52.2	130.7	150	138	779	140.3	175	150	789
											2EH04505025	37.6	2	104.4	162.3	175	149	779	174.3	175	160	789
											2EH04507525	56.3	2	156.3	188.1	200	209	779	200.1	225	220	789
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	25.4	8.7	None	-	-	-	130.7	150	138	779	139.4	175	148	788
											2EH04502525	23.0	1	57.7	130.7	150	138	779	139.4	175	148	788
											2EH04505025	45.9	2	115.2	175.8	200	162	779	186.6	200	172	788
											2EH04507525	68.9	2	173.0	204.8	225	228	779	215.6	225	238	788
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	12.7	4.3	None	-	-	-	63.1	80	67	387	67.4	80	72	391
											2EH04502546	23.0	1	28.9	52.0	80	67	387	57.4	80	72	391
											2EH04505046	45.9	2	57.6	87.9	90	81	387	93.3	100	86	391
											2EH04507546	68.9	2	86.5	102.4	110	114	387	107.8	110	119	391
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	10.5	3.5	None	-	-	-	51.2	60	54	320	54.7	70	58	324
											2EH04502558	23.0	1	23.1	42.0	60	54	320	46.4	70	58	324
											2EH04505058	45.9	2	46.1	70.8	80	65	320	75.1	80	69	324
											2EH04507558	68.9	2	69.2	82.3	90	92	320	86.7	90	96	324
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	30.2	9.6	None	-	-	-	152.7	200	161	836	162.3	200	172	846
											2EH04502525	18.8	1	52.2	152.7	200	161	836	162.3	200	172	846
											2EH04505025	37.6	2	104.4	168.3	200	161	836	180.3	200	172	846
											2EH04507525	56.3	2	156.3	194.1	200	214	836	206.1	225	226	846
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	30.2	8.7	None	-	-	-	152.7	200	161	836	161.4	200	171	845
											2EH04502525	23.0	1	57.7	152.7	200	161	836	161.4	200	171	845
											2EH04505025	45.9	2	115.2	181.8	200	167	836	192.6	200	177	845
											2EH04507525	68.9	2	173.0	210.8	225	234	836	221.6	225	244	845
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	15.1	4.3	None	-	-	-	72.7	90	77	455	77.0	90	82	460
											2EH04502546	23.0	1	28.9	55.0	90	77	455	60.4	90	82	460
											2EH04505046	45.9	2	57.6	90.9	100	84	455	96.3	100	89	460
											2EH04507546	68.9	2	86.5	105.4	110	117	455	110.8	110	122	460
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.0	3.5	None	-	-	-	59.7	70	63	343	63.2	80	67	347
											2EH04502558	23.0	1	23.1	43.9	70	63	343	48.3	80	67	347
											2EH04505058	45.9	2	46.1	72.6	80	67	343	77.0	80	71	347
											2EH04507558	68.9	2	69.2	84.2	90	93	343	88.6	90	97	347

Table 49: AV15 to AV28 VFD CS high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.5	5.0	9.6	None	-	-	-	86.3	110	92	488	95.9	110	103	497
												2EH04502525	18.8	1	52.2	94.6	110	92	488	106.6	110	103	497
												2EH04505025	37.6	2	104.4	159.9	175	147	488	171.9	175	158	497
												2EH04507525	56.3	2	156.3	185.7	200	207	488	197.7	200	218	497
	230-3-60	26.9	164	25.0	190			2.1	13.4	5.0	8.7	None	-	-	-	86.2	110	91	487	94.9	110	101	496
												2EH04502525	23.0	1	57.7	101.4	110	93	487	112.3	125	103	496
												2EH04505025	45.9	2	115.2	173.3	175	159	487	184.1	200	169	496
												2EH04507525	68.9	2	173.0	202.3	225	226	487	213.1	225	236	496
	460-3-60	12.0	94	12.2	100			1.0	6.7	2.2	4.3	None	-	-	-	40.4	50	43	260	44.7	50	48	264
												2EH04502546	23.0	1	28.9	50.0	60	46	260	55.4	60	51	264
												2EH04505046	45.9	2	57.6	85.9	90	79	260	91.3	100	84	264
												2EH04507546	68.9	2	86.5	100.4	110	112	260	105.8	110	117	264
	575-3-60	9.0	65	9.3	72			0.9	5.4	1.5	3.5	None	-	-	-	30.8	40	33	187	34.3	40	37	191
												2EH04502558	23.0	1	23.1	39.4	40	36	187	43.8	45	40	191
												2EH04505058	45.9	2	46.1	68.1	70	63	187	72.5	80	67	191
												2EH04507558	68.9	2	69.2	79.7	90	89	187	84.1	90	93	191

Table 49: AV15 to AV28 VFD CS high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	19.8	5.0	9.6	None	-	-	-	98.2	125	105	614	107.8	125	116	624
												2EH04502525	18.8	1	52.2	102.5	125	105	614	114.5	125	116	624
												2EH04505025	37.6	2	104.4	167.8	175	154	614	179.8	200	165	624
												2EH04507525	56.3	2	156.3	193.6	200	214	614	205.6	225	225	624
	230-3-60	28.8	223	28.2	240			2.1	19.8	5.0	8.7	None	-	-	-	98.2	125	105	614	106.9	125	115	623
												2EH04502525	23.0	1	57.7	109.4	125	105	614	120.3	125	115	623
												2EH04505025	45.9	2	115.2	181.3	200	167	614	192.1	200	177	623
												2EH04507525	68.9	2	173.0	210.3	225	233	614	221.1	225	243	623
	460-3-60	12.5	100	14.7	130			1.0	9.9	2.2	4.3	None	-	-	-	47.2	60	50	305	51.5	60	55	309
												2EH04502546	23.0	1	28.9	54.0	60	50	305	59.4	60	55	309
												2EH04505046	45.9	2	57.6	89.9	90	83	305	95.3	100	88	309
												2EH04507546	68.9	2	86.5	104.4	110	116	305	109.8	110	121	309
	575-3-60	9.7	70	11.3	94			0.9	7.9	1.5	3.5	None	-	-	-	36.5	45	39	225	40.0	50	43	229
												2EH04502558	23.0	1	23.1	42.5	45	39	225	46.9	50	43	229
												2EH04505058	45.9	2	46.1	71.3	80	66	225	75.6	80	70	229
												2EH04507558	68.9	2	69.2	82.8	90	92	225	87.2	90	96	229
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	25.4	5.0	9.6	None	-	-	-	119.7	150	128	678	129.3	150	139	688
												2EH04502525	18.8	1	52.2	119.7	150	128	678	129.3	150	139	688
												2EH04505025	37.6	2	104.4	174.8	175	161	678	186.8	200	172	688
												2EH04507525	56.3	2	156.3	200.6	225	220	678	212.6	225	231	688
	230-3-60	32.6	240	34.0	240			2.3	25.4	5.0	8.7	None	-	-	-	119.7	150	128	678	128.4	150	138	687
												2EH04502525	23.0	1	57.7	119.7	150	128	678	128.4	150	138	687
												2EH04505025	45.9	2	115.2	188.3	200	173	678	199.1	200	183	687
												2EH04507525	68.9	2	173.0	217.3	225	240	678	228.1	250	250	687
	460-3-60	14.8	130	16.0	140			1.3	12.7	2.2	4.3	None	-	-	-	57.1	70	61	369	61.4	70	66	373
												2EH04502546	23.0	1	28.9	57.5	70	56	369	62.9	70	61	373
												2EH04505046	45.9	2	57.6	93.4	100	86	369	98.8	100	91	373
												2EH04507546	68.9	2	86.5	107.9	110	119	369	113.3	125	124	373
	575-3-60	11.1	94	12.9	108			1.1	10.5	1.5	3.5	None	-	-	-	45.1	50	48	299	48.6	60	52	302
												2EH04502558	23.0	1	23.1	45.8	50	45	299	50.1	60	49	302
												2EH04505058	45.9	2	46.1	74.5	80	69	299	78.9	80	73	302
												2EH04507558	68.9	2	69.2	86.1	90	95	299	90.5	100	99	302
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	25.4	5.0	9.6	None	-	-	-	140.7	175	150	800	150.3	175	161	810
												2EH04502525	18.8	1	52.2	140.7	175	150	800	150.3	175	161	810
												2EH04505025	37.6	2	104.4	174.8	175	161	800	186.8	200	172	810
												2EH04507525	56.3	2	156.3	200.6	225	220	800	212.6	225	231	810
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	25.4	5.0	8.7	None	-	-	-	140.7	175	150	800	149.4	175	160	809
												2EH04502525	23.0	1	57.7	140.7	175	150	800	149.4	175	160	809
												2EH04505025	45.9	2	115.2	188.3	200	173	800	199.1	200	183	809
												2EH04507525	68.9	2	173.0	217.3	225	240	800	228.1	250	250	809
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	12.7	2.2	4.3	None	-	-	-	67.5	80	72	396	71.8	90	77	400
												2EH04502546	23.0	1	28.9	57.5	80	67	396	62.9	90	72	400
												2EH04505046	45.9	2	57.6	93.4	100	86	396	98.8	100	91	400
												2EH04507546	68.9	2	86.5	107.9	110	119	396	113.3	125	124	400
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	10.5	1.5	3.5	None	-	-	-	54.2	70	58	327	57.7	70	62	330
												2EH04502558	23.0	1	23.1	45.8	70	54	327	50.1	70	58	330
												2EH04505058	45.9	2	46.1	74.5	80	69	327	78.9	80	73	330
												2EH04507558	68.9	2	69.2	86.1	90	95	327	90.5	100	99	330

Table 49: AV15 to AV28 VFD CS high static with on/off power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	30.2	5.0	9.6	None	-	-	-	162.7	200	172	857	172.3	200	183	867
												2EH04502525	18.8	1	52.2	162.7	200	172	857	172.3	200	183	867
												2EH04505025	37.6	2	104.4	180.8	200	172	857	192.8	200	183	867
												2EH04507525	56.3	2	156.3	206.6	225	226	857	218.6	225	237	867
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	30.2	5.0	8.7	None	-	-	-	162.7	200	172	857	171.4	200	182	866
												2EH04502525	23.0	1	57.7	162.7	200	172	857	171.4	200	182	866
												2EH04505025	45.9	2	115.2	194.3	200	179	857	205.1	225	189	866
												2EH04507525	68.9	2	173.0	223.3	250	245	857	234.1	250	255	866
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	15.1	2.2	4.3	None	-	-	-	77.1	90	82	464	81.4	100	87	469
												2EH04502546	23.0	1	28.9	60.5	90	77	464	65.9	100	82	469
												2EH04505046	45.9	2	57.6	96.4	100	89	464	101.8	110	94	469
												2EH04507546	68.9	2	86.5	110.9	125	122	464	116.3	125	127	469
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.0	1.5	3.5	None	-	-	-	62.7	80	66	350	66.2	80	70	353
												2EH04502558	23.0	1	23.1	47.6	80	63	350	52.0	80	67	353
												2EH04505058	45.9	2	46.1	76.4	80	70	350	80.8	90	74	353
												2EH04507558	68.9	2	69.2	88.0	90	97	350	92.3	100	101	353

Table 50: AV15 to AV28 VFD Customer Supplied high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV15 (15)	208-3-60	26.9	164	25.0	190			2.1	13.5	6.7	9.6	None	-	-	-	89.7	110	95	480	99.3	125	106	490
												2EH04502525	18.8	1	52.2	98.9	110	95	480	110.9	125	106	490
												2EH04505025	37.6	2	104.4	164.1	175	151	480	176.1	200	162	490
												2EH04507525	56.3	2	156.3	189.9	200	211	480	201.9	225	222	490
	230-3-60	26.9	164	25.0	190			2.1	13.4	6.7	8.7	None	-	-	-	89.6	110	95	479	98.3	125	105	488
												2EH04502525	23.0	1	57.7	105.6	110	97	479	116.5	125	107	488
												2EH04505025	45.9	2	115.2	177.5	200	163	479	188.4	200	173	488
												2EH04507525	68.9	2	173.0	206.5	225	230	479	217.4	225	240	488
	460-3-60	12.0	94	12.2	100			1.0	6.7	3.4	4.3	None	-	-	-	42.8	50	46	257	47.1	50	51	262
												2EH04502546	23.0	1	28.9	53.0	60	49	257	58.4	60	54	262
												2EH04505046	45.9	2	57.6	88.9	90	82	257	94.3	100	87	262
												2EH04507546	68.9	2	86.5	103.4	110	115	257	108.8	110	120	262
	575-3-60	9.0	65	9.3	72			0.9	5.4	2.7	3.5	None	-	-	-	33.2	40	36	186	36.7	45	40	190
												2EH04502558	23.0	1	23.1	42.4	45	39	186	46.8	50	43	190
												2EH04505058	45.9	2	46.1	71.1	80	65	186	75.5	80	69	190
												2EH04507558	68.9	2	69.2	82.7	90	92	186	87.1	90	96	190
AV18 (17.5)	208-3-60	28.8	223	28.2	240			2.1	19.8	6.7	9.6	None	-	-	-	101.6	125	109	606	111.2	125	120	616
												2EH04502525	18.8	1	52.2	106.8	125	109	606	118.8	125	120	616
												2EH04505025	37.6	2	104.4	172.0	175	158	606	184.0	200	169	616
												2EH04507525	56.3	2	156.3	197.8	200	218	606	209.8	225	229	616
	230-3-60	28.8	223	28.2	240			2.1	19.8	6.7	8.7	None	-	-	-	101.6	125	109	606	110.3	125	119	615
												2EH04502525	23.0	1	57.7	113.6	125	109	606	124.5	125	119	615
												2EH04505025	45.9	2	115.2	185.5	200	171	606	196.4	200	181	615
												2EH04507525	68.9	2	173.0	214.5	225	237	606	225.4	250	247	615
	460-3-60	12.5	100	14.7	130			1.0	9.9	3.4	4.3	None	-	-	-	49.6	60	53	302	53.9	60	58	307
												2EH04502546	23.0	1	28.9	57.0	60	53	302	62.4	70	58	307
												2EH04505046	45.9	2	57.6	92.9	100	85	302	98.3	100	90	307
												2EH04507546	68.9	2	86.5	107.4	110	119	302	112.8	125	124	307
	575-3-60	9.7	70	11.3	94			0.9	7.9	2.7	3.5	None	-	-	-	38.9	50	42	224	42.4	50	46	228
												2EH04502558	23.0	1	23.1	45.5	50	42	224	49.9	50	46	228
												2EH04505058	45.9	2	46.1	74.3	80	68	224	78.6	80	72	228
												2EH04507558	68.9	2	69.2	85.8	90	95	224	90.2	100	99	228

Table 50: AV15 to AV28 VFD Customer Supplied high static with modulating power exhaust

Size (tons)	Nominal unit voltage	Comp. 1		Comp. 2		Comp. 3		OD fan motors each FLA	Supply blower motor FLA	Pwr exh motor FLA	120V trans FLA	Electric heat option field installed kit				MCA A	Max f/b size A	Min disconnect rating		MCA with 120V trans A	Max f/b size with 120V trans A	Min disconnect rating/120V trans	
		RLA	LRA	RLA	LRA	RLA	LRA					Model	kW	Stages	A			FLA	LRA			FLA	LRA
AV20 (20)	208-3-60	32.6	240	34.0	240			2.3	25.4	6.7	9.6	None	-	-	-	123.1	150	132	671	132.7	150	143	680
												2EH04502525	18.8	1	52.2	123.1	150	132	671	132.7	150	143	680
												2EH04505025	37.6	2	104.4	179.0	200	165	671	191.0	200	176	680
												2EH04507525	56.3	2	156.3	204.8	225	224	671	216.8	225	235	680
	230-3-60	32.6	240	34.0	240			2.3	25.4	6.7	8.7	None	-	-	-	123.1	150	132	671	131.8	150	142	679
												2EH04502525	23.0	1	57.7	123.1	150	132	671	131.8	150	142	679
												2EH04505025	45.9	2	115.2	192.5	200	177	671	203.4	225	187	679
												2EH04507525	68.9	2	173.0	221.5	225	244	671	232.4	250	254	679
	460-3-60	14.8	130	16.0	140			1.3	12.7	3.4	4.3	None	-	-	-	59.5	70	64	367	63.8	70	69	371
												2EH04502546	23.0	1	28.9	60.5	70	64	367	65.9	70	69	371
												2EH04505046	45.9	2	57.6	96.4	100	89	367	101.8	110	94	371
												2EH04507546	68.9	2	86.5	110.9	125	122	367	116.3	125	127	371
	575-3-60	11.1	94	12.9	108			1.1	10.5	2.7	3.5	None	-	-	-	47.5	60	51	298	51.0	60	55	301
												2EH04502558	23.0	1	23.1	48.8	60	51	298	53.1	60	55	301
												2EH04505058	45.9	2	46.1	77.5	80	71	298	81.9	90	75	301
												2EH04507558	68.9	2	69.2	89.1	90	98	298	93.5	100	102	301
AV25 (25)	208-3-60	22.4	149	41.0	304	22.4	149	2.3	25.4	6.7	9.6	None	-	-	-	144.1	175	154	793	153.7	175	165	802
												2EH04502525	18.8	1	52.2	144.1	175	154	793	153.7	175	165	802
												2EH04505025	37.6	2	104.4	179.0	200	165	793	191.0	200	176	802
												2EH04507525	56.3	2	156.3	204.8	225	224	793	216.8	225	235	802
	230-3-60	22.4	149	41.0	304	22.4	149	2.3	25.4	6.7	8.7	None	-	-	-	144.1	175	154	793	152.8	175	164	801
												2EH04502525	23.0	1	57.7	144.1	175	154	793	152.8	175	164	801
												2EH04505025	45.9	2	115.2	192.5	200	177	793	203.4	225	187	801
												2EH04507525	68.9	2	173.0	221.5	225	244	793	232.4	250	254	801
	460-3-60	10.6	75	19.2	147	10.6	75	1.3	12.7	3.4	4.3	None	-	-	-	69.9	80	75	394	74.2	90	80	398
												2EH04502546	23.0	1	28.9	60.5	80	75	394	65.9	90	80	398
												2EH04505046	45.9	2	57.6	96.4	100	89	394	101.8	110	94	398
												2EH04507546	68.9	2	86.5	110.9	125	122	394	116.3	125	127	398
	575-3-60	7.7	54	16.7	122	7.7	54	1.1	10.5	2.7	3.5	None	-	-	-	56.6	70	60	326	60.1	70	64	329
												2EH04502558	23.0	1	23.1	48.8	70	60	326	53.1	70	64	329
												2EH04505058	45.9	2	46.1	77.5	80	71	326	81.9	90	75	329
												2EH04507558	68.9	2	69.2	89.1	90	98	326	93.5	100	102	329
AV28 (27.5)	208-3-60	25.0	164	51.3	300	25.0	164	2.1	30.2	6.7	9.6	None	-	-	-	166.1	200	176	849	175.7	225	187	859
												2EH04502525	18.8	1	52.2	166.1	200	176	849	175.7	225	187	859
												2EH04505025	37.6	2	104.4	185.0	200	176	849	197.0	225	187	859
												2EH04507525	56.3	2	156.3	210.8	225	230	849	222.8	225	241	859
	230-3-60	25.0	164	51.3	300	25.0	164	2.1	30.2	6.7	8.7	None	-	-	-	166.1	200	176	849	174.8	225	186	858
												2EH04502525	23.0	1	57.7	166.1	200	176	849	174.8	225	186	858
												2EH04505025	45.9	2	115.2	198.5	200	183	849	209.4	225	193	858
												2EH04507525	68.9	2	173.0	227.5	250	249	849	238.4	250	259	858
	460-3-60	12.8	100	22.4	150	12.8	100	1.0	15.1	3.4	4.3	None	-	-	-	79.5	100	85	462	83.8	100	90	466
												2EH04502546	23.0	1	28.9	63.5	100	85	462	68.9	100	90	466
												2EH04505046	45.9	2	57.6	99.4	100	91	462	104.8	110	96	466
												2EH04507546	68.9	2	86.5	113.9	125	125	462	119.3	125	130	466
	575-3-60	9.6	78	19.9	109	9.6	78	0.9	12.0	2.7	3.5	None	-	-	-	65.1	80	69	349	68.6	80	73	352
												2EH04502558	23.0	1	23.1	50.6	80	69	349	55.0	80	73	352
												2EH04505058	45.9	2	46.1	79.4	80	73	349	83.8	90	77	352
												2EH04507558	68.9	2	69.2	91.0	100	100	349	95.3	100	104	352

Physical data

Table 51: AV15 to AV18 physical data

Component	Models					
	AV15			AV18		
Nominal tonnage	15			17.5		
ARI cooling performance	2 Stage	4 Stage		2 Stage	4 Stage	
Gross capacity @ ARI A point (Btu)	183,000	184,000		211,000	211,000	
ARI net capacity (Btu)	172,000	174,000		198,000	198,000	
EER	11.1[1] / 10.9[2]	11.0[1] / 10.8[2]		11.0[1] / 10.8[2]	11.0[1] / 10.8[2]	
IEER CV	13.0[1] / 12.8[2]	NA		12.6[1] / 12.4[2]	NA	
IEER with Intellispeed	14.2[1] / 14.0[2]	14.8[1] / 14.6[2]		14.2[1] / 14.0[2]	14.6[1] / 14.4[2]	
IEER with VAV	NA	14.6[1] / 14.4[2]		NA	14.4[1] / 14.2[2]	
CFM	4800	4570		5400	5780	
System power (KW)	15.78	16.11		18.33	18.33	
Refrigerant type	R-410a	R-410a		R-410a	R-410a	
Refrigerant charge (lb-oz)						
System 1	7-10	7-12		10-0	9-12	
System 2	8-2	8-0		10-4	10-0	
ARI heating performance						
Heating model	(N,S)1	(N,S)3	T3	(N,S)1	(N,S)3	T3
Heating type	Stg. low	Stg. high	Mod. high	Stg. low	Stg. high	Mod. high
1st stage heat input (K Btu)	165	300	140	165	300	140
2nd stage heat input (K Btu)	220	400	400	220	400	400
1st stage heat output (K Btu)	134	243	113	134	243	113
2nd stage heat output (K Btu)	178	324	324	178	324	324
Steady state efficiency (%)	81	81	81	81	81	81
No. of burners	5	9	9	5	9	9
No. of stages / Turn down	2	2	2.85 to 1	2	2	2.85 to 1
Temperature rise range (°F)	15-45	35-65	35-65	15-45	30-65	30-65
Gas limit setting (°F)	130	130	135	130	130	135
Gas piping connection (in.)	3/4	3/4	3/4	3/4	3/4	3/4
Dimensions (in.)						
Length	129-3/4					
Width	88-3/4					
Height	48-9/16					
Operating weight	1750			1830		
Compressors	2 Stage	4 Stage		2 Stage	4 Stage	
Type	Scroll	Scroll		Scroll	Scroll	
Quantity	2	2		2	2	
Unit capacity steps (%)	50 / 100	34/50/84/100		47 / 53	31/47/85/100	
Condenser coil data						
Face area (sq. ft.)	22.1			22.1		
Type	MCHX			MCHX		
Thickness	20 mm			25 mm		
FPI	23			23		
Circuitry type	2-Pass			2-Pass		
Evaporator coil data						
Face area (sq. st.)	22.0			22.0		
Rows	3			4		
Fins per inch	17			15		
Tube diameter	3/8			3/8		
Circuitry type	Intertwined			Intertwined		

Table 51: AV15 to AV18 physical data

Component	Models					
	AV15			AV18		
Nominal tonnage	**15**			**17.5**		
Refrigerant control	TXV			TXV		
Condenser fan data						
Quantity	2			2		
Fan diameter (in.)	30			30		
Type	Prop			Prop		
Drive type	Direct			Direct		
Number of motors	2			2		
Motor HP each	1/2			1/2		
RPM	850			850		
Nominal total CFM	10,800			10,700		
Belt drive evap fan data						
Quantity	2			2		
Fan size (in.)	15x15			15x15		
Type	Centrifugal			Centrifugal		
Static range	Std	Med	High	Std	Med	High
Motor sheave	1VP40	1VP40	1VP60	1VP60	1VP65	1VP65
Blower sheave	AK89	BK77	BK100	AK114	BK115	BK100
Belt	AX41	BX43	BX48	AX49	BX50	BX46
Motor HP each	2.9	3.7	5.25	3.7	5.25	7.5
RPM	1745	1750	1750	1750	1750	1760
Frame size	56	56	145T	56	145T	213T
Filters						
Quantity - size	6 - (20 x 25 x 2)[34]			6 - (20 x 25 x 2)[34]		
	6 - (20 x 25 x 4)[5]			6 - (20 x 25 x 4)[5]		

1 Cooling only unit or cooling unit with electric heat
2 Cooling unit with gas heat
3 2 in. throwaway, standard, MERV (Minimum Efficiency Reporting Value) 3
4 Optional 2 in. pleated, MERV 8
5 Optional 4 in. pleated, MERV 13

Table 52: AV20 to AV28 physical data

Component	Models								
	AV20		AV25		AV28				
Nominal tonnage	20		25		27.5				
ARI cooling performance	2 Stage	4 Stage	2 Stage	4 Stage	2 Stage	4 Stage			
Gross capacity @ ARI A point (Btu)	252,000	252,000	308,000	304,000	347,000	350,000			
ARI net capacity (Btu)	238,000	234,000	286,000	274,000	320,000	320,000			
EER	11.0[1] / 10.8[2]	11.0[1] / 10.8[2]	10.2[1] / 10.0[2]	10.2[1] / 10.0[2]	10.4[1] / 10.2[2]	10.2[1] / 10.0[2]			
IEER CV	12.4[1] / 12.2[2]	NA	11.6[1] / 11.4[2]	NA	11.6[1] / 11.4[2]	NA			
IEER with Intellispeed	14.2[1] / 14.0[2]	14.4[1] / 14.2[2]	14.0[1] / 13.8[2]	14.4[1] / 14.2[2]	13.4[1] / 13.2[2]	14.4[1] / 14.2[2]			
IEER with VAV	NA	14.2[1] / 14.0[2]	NA	14.2[1] / 14.0[2]	NA	14.2[1] / 14.0[2]			
CFM	6000	6090	8000	7800	9050	9350			
System power (KW)	22.04	21.67	28.60	27.40	31.37	32.00			
Refrigerant type	R-410a	R-410a	R-410a	R-410a	R-410a	R-410a			
Refrigerant charge (lb-oz)									
System 1	10-14	10-10	14-12	15-4	16-8	16-8			
System 2	11-4	11-10	15-4	16-0	17-4	17-4			
ARI heating performance									
Heating model	(N,S)1	(N,S)3	T3	(N,S)1	(N,S)3	T3	(N,S)1	(N,S)3	T3
Heating type	Stg. low	Stg. high	Mod. high	Stg. low	Stg. high	Mod. high	Stg. low	Stg. high	Mod. high
1st stage heat input (K Btu)	165	300	140	165	300	140	165	300	140
2nd stage heat input (K Btu)	220	400	400	220	400	400	220	400	400
1st stage heat output (K Btu)	134	243	113	134	243	113	134	243	113
2nd stage heat output (K Btu)	178	324	324	178	324	324	178	324	324
Steady state efficiency (%)	81	81	81	81	81	81	81	81	81
No. of burners	5	9	9	5	9	9	5	9	9
No. of stages / Turn down	2	2	2.85 to 1	2	2	2.85 to 1	2	2	2.85 to 1
Temperature rise range (°F)	15-45	30-65	30-65	10-40	20-55	20-55	10-40	20-55	20-55
Gas limit setting (°F)	130	130	135	130	130	135	130	130	135
Gas piping connection (in.)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Dimensions (in.)									
Length	143-13/16			143-13/16			160-1/16		
Width	88-3/4			88-3/4			88-3/4		
Height	48-9/16			56-9/16			56-9/16		
Operating weight	1930			2090			2170		
Compressors	2 Stage	4 Stage		2 Stage	4 Stage		2 Stage	4 Stage	
Type	Scroll	Scroll		Scroll	Scroll		Scroll	Scroll	
Quantity	2	2		2	3		2	3	
Unit capacity steps (%)	46 / 100	31/46/85/100		50 / 50	25/50/75/100		50 / 50	25/50/75/100	
Condenser coil data									
Face area (sq. ft.)	25.1			30.8			35.4		
Type	MCHX			MCHX			MCHX		
Thickness	25 mm			25 mm			25 mm		
FPI	23			23			23		
Circuitry type	2-Pass			2-Pass			2-Pass		
Evaporator coil data									
Face area (sq. st.)	22.0			26.0			26.0		
Rows	4			4			4		
Fins per inch	15			15			15		
Tube diameter	3/8			3/8			3/8		
Circuitry type	Intertwined			Intertwined			Intertwined		

Table 52: AV20 to AV28 physical data

Component	Models								
	AV20			AV25			AV28		
Nominal tonnage	**20**			**25**			**27.5**		
Refrigerant control	TXV			TXV			TXV		
Condenser fan data									
Quantity	4			4			4		
Fan diameter (in.)	24			24			30		
Type	Prop			Prop			Prop		
Drive type	Direct			Direct			Direct		
Number of motors	2			2			2		
Motor HP each	1/2			1/2			1/2		
RPM	1120			1120			850		
Nominal total CFM	15,800			16,900			21,400		
Belt drive evap fan data									
Quantity	2			2			2		
Fan size (in.)	15x15			15x15			15x15		
Type	Centrifugal			Centrifugal			Centrifugal		
Static range	Std	Med	High	Std	Med	High	Std	Med	High
Motor sheave	1VP60	2VP60	1VP65	2VP36	2VP60	2VP60	1VP65	1VP65	2VP60
Blower sheave	1B5V110	2BK100	1B5V90	2BK65	2B5V86	2BK80	1B5V110	1B5V90	2B5V74
Belt	BX48	BX48 (x2)	5VX490	BX37 (x2)	BX43 (x2)	BX43 (x2)	BX48	5VX490	5VX450 (x2)
Motor HP each	5.25	7.5	10	5.25	7.5	10	7.5	10	12
RPM	1750	1760	1765	1750	1760	1765	1760	1765	1765
Frame size	145T	213T	215T	145T	213T	215T	213T	215T	215T
Filters									
Quantity - size	6 - (20 x 25 x 2)[34]			9 - (16 x 25 x 2)[34]			9 - (16 x 25 x 2)[34]		
	6 - (20 x 25 x 4)[5]			9 - (16 x 25 x 4)[5]			9 - (16 x 25 x 4)[5]		

1 Cooling only unit or cooling unit with electric heat
2 Cooling unit with gas heat
3 2 in. throwaway, standard, MERV (Minimum Efficiency Reporting Value) 3
4 Optional 2 in. pleated, MERV 8
5 Optional 4 in. pleated, MERV 13

Optional electric heat

The factory-installed heaters are wired for single point power supply. You only need to bring the power supply into the single point terminal block.

These CSA approved heaters are located within the central compartment of the unit with the heater elements extending in to the supply air chamber.

Fuses are supplied, where required, by the factory. See Table 53 for minimum CFM limitations. See the electrical data tables for electrical data.

Table 53: Minimum Airflow Requirements

Minimum Airflow Requirements (up to 2 in. external static)			
Unit Tons	Heater kW		
	75	50	25
15	6000	4500	4500
17.5	6000	5250	5250
20	6000	6000	6000
25	7500	7500	7500
27.5	8250	8250	8250

Optional gas heat

The optional gas-fired heaters have aluminized-steel or optional stainless steel, tubular heat exchangers with spark ignition with proven pilot.

This unit is shipped from the factory for use with natural gas at elevations up to 2000 ft (610 m) above sea level. The unit may be field-converted for use with propane gas and/or elevations above 2000 ft with a listed conversion kit. Modulating furnaces, gas model T3, are NOT certified for use with propane and cannot be converted.

ⓘ **Note:** Installation of this furnace at altitudes above 2000 ft (610 m) shall be in accordance with local codes, or in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54 or National Standard of Canada, Natural Gas and Propane Installation Code, CSA B149.1.

Table 54: Gas application data

Unit		Input (MBH)	Output (MBH)	Temp. rise (°F) [1]
Size (tons)	Heat size			
AV15 (15)	(N,S)1	220	178	15-45
	(N,S)3	400	324	35-65
	T3	400	324	35-65
AV18 (17.5)	(N,S)1	220	178	15-45
	(N,S)3	400	324	30-65
	T3	400	324	30-65
AV20 (20)	(N,S)1	220	178	15-45
	(N,S)3	400	324	30-65
	T3	400	324	30-65
AV25 (25)	(N,S)1	220	178	10-40
	(N,S)3	400	324	20-55
	T3	400	324	20-55

Table 54: Gas application data

Unit		Input (MBH)	Output (MBH)	Temp. rise (°F) [1]
Size (tons)	Heat size			
AV28 (27.5)	(N,S)1	220	178	10-40
	(N,S)3	400	324	20-55
	T3	400	324	20-55

1 On VAV units with a non-modulating furnace, individual VAV boxes must be full open in heating mode to ensure airflow falls within the temperature rise range.

Table 55: Gas heat allowable air flow

Unit		Supply air (CFM)	
Size (tons)	Heat size	Min	Max
AV15 (15)	(N,S)1	3660	7500
	(N,S)3	4620	7500
	T3	3500	7500
AV18 (17.5)	(N,S)1	3660	8750
	(N,S)3	4620	8750
	T3	3500	8750
AV20 (20)	(N,S)1	3660	10000
	(N,S)3	4620	10000
	T3	3500	10000
AV25 (25)	(N,S)1	4120	12500
	(N,S)3	5450	12500
	T3	5000	12500
AV28 (27.5)	(N,S)1	4120	13750
	(N,S)3	5450	13750
	T3	5000	13750

Gas piping

Proper sizing of gas piping depends on the cubic feet per hour of gas flow required, specific gravity of the gas, and the length of run.

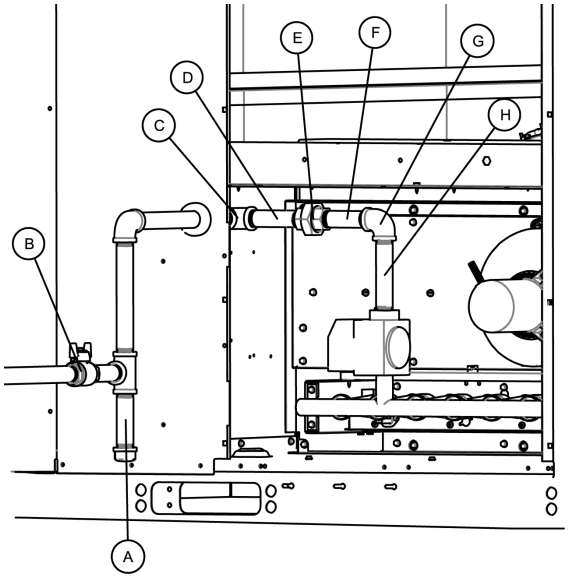
Follow the “National Fuel Gas Code” Z223.1 (in U.S.A.) or the current Gas Installation Codes CSA-B149.1 (in Canada) in all cases unless they are superseded by local codes or gas utility requirements.

See Table 56. The heating value of the gas may vary by locality. You must check the value with the local gas utility.

ⓘ **Note:** There may be a local gas utility requirement specifying a minimum diameter for gas piping. All units require a 3/4 in. pipe connection at the entrance fitting. The supply line should not be sized smaller than the entrance fitting size.

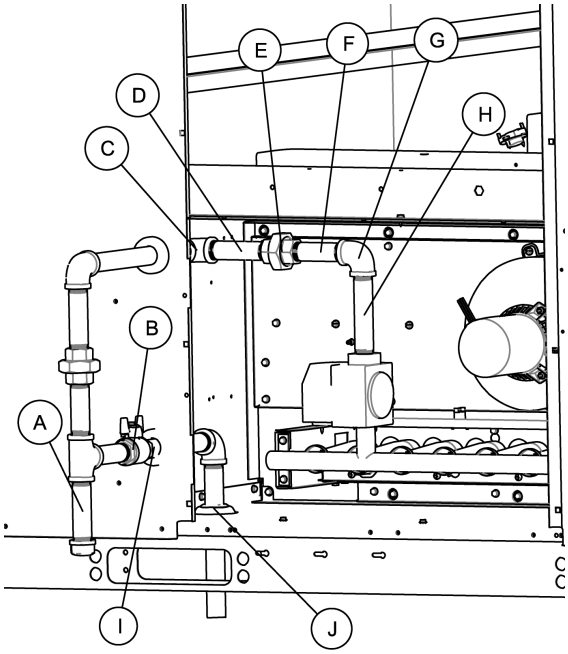
The following figures show the gas piping.

Figure 70: Side entry Gas piping



Item	Description
A	Sediment trap
B	Manual shut-off valve
C	90° elbow
D	4 ½ in. long nipple
E	Union
F	4 in. long nipple
G	90° elbow
H	5 ½ in. long nipple

Figure 71: Bottom entry gas piping



Item	Description
A	Sediment trap
B	Manual shut-off valve
C	90° elbow
D	4 ½ in. long nipple
E	Union
F	4 in. long nipple
G	90° elbow
H	5 ½ in. long nipple
I	Extra piping grommet (included)
J	Caulk between pipe and base pan hole to provide watertight seal

Table 56: Gas pipe sizing - capacity of pipe

Length of pipe (ft.)	Nominal iron pipe size		
	3/4 in.	1 in.	1-1/4 in.
10	278	520	1050
20	190	350	730
30	152	285	590
40	130	245	500
50	115	215	440
60	105	195	400
70	96	180	370
80	90	170	350
90	84	160	320
100	79	150	305

Note: Maximum capacity of pipe in cubic feet of gas per hour based upon a pressure drop of 0.3 inch W.C. and 0.6 specific gravity gas.

Gas connection

The gas supply line can be routed within the space and roof curb with the exit through the unit's basepan. See Physical dimensions for the gas piping inlet location. Typical supply piping arrangements are shown in the Gas piping section. All pipe nipples, fittings, and the gas cock are field supplied.

Apply the following gas piping recommendations.

- You must install a drip leg or sediment trap and a ground joint union in the gas piping.
- When required by local codes, install a manual shut-off valve outside of the unit.
- Use wrought iron or steel pipe for all gas lines. Apply pipe dope sparingly to male threads only.
- If local codes allow the use of a flexible gas appliance connector, always use a new listed connector. Do not use a connector which has previously serviced another gas appliance.

WARNING

Natural gas may contain some propane. Propane is an excellent solvent and will quickly dissolve white lead and most standard commercial compounds. A special pipe dope must be used when assembling wrought iron or steel pipe. Shellac based compounds such as Gaskolac or Stalastic, and compounds such as Rectorseal #5, Clydes's or John Crane may be used.

- Clean all piping of dirt and scale. Hammer on the outside of the pipe and blow out loose particles. Before initial start-up, make sure that all gas lines external to the unit are purged of air.
- The gas supply must be a separate line and installed in accordance with all safety codes as prescribed under Limitations.
- You must install a 1/8-inch NPT plugged tapping, accessible for test gage connection, immediately upstream of the gas supply connection to the unit.
- After the gas connections are complete, open the main shut-off valve admitting normal gas pressure to the mains. Check all joints for leaks with soap solution or other material suitable for the purpose. Never use a flame.

WARNING

FIRE OR EXPLOSION HAZARD

Failure to follow the safety warning exactly could result in serious injury, death, or property damage. Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.

CAUTION

The furnace and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing at pressures greater than 1/2 PSIG (3.5 kPa). Pressures greater than 1/2 PSIG (3.5 kPa) cause gas valve damage resulting in a hazardous condition. If the gas valve is subjected to a pressure greater than 1/2 PSIG (3.5 kPa), it must be replaced. The furnace must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG (3.5 kPa).

WARNING

Threaded joints must be coated with a sealing compound that is resistant to the action of liquefied petroleum gases. Do not use Teflon tape.

Propane units, tanks, and piping

All gas heat units are shipped from the factory equipped for natural gas use only. The unit may be converted in the field for use with propane gas with an accessory kit.

All propane gas equipment must conform to the safety standards of the National Fire Protection Association.

For satisfactory operation, propane gas pressure must be at the proper inlet pressure at the unit

under full load. See conversion kit instructions for minimum and maximum supply inlet pressure. Maintaining proper gas pressure depends on three main factors:

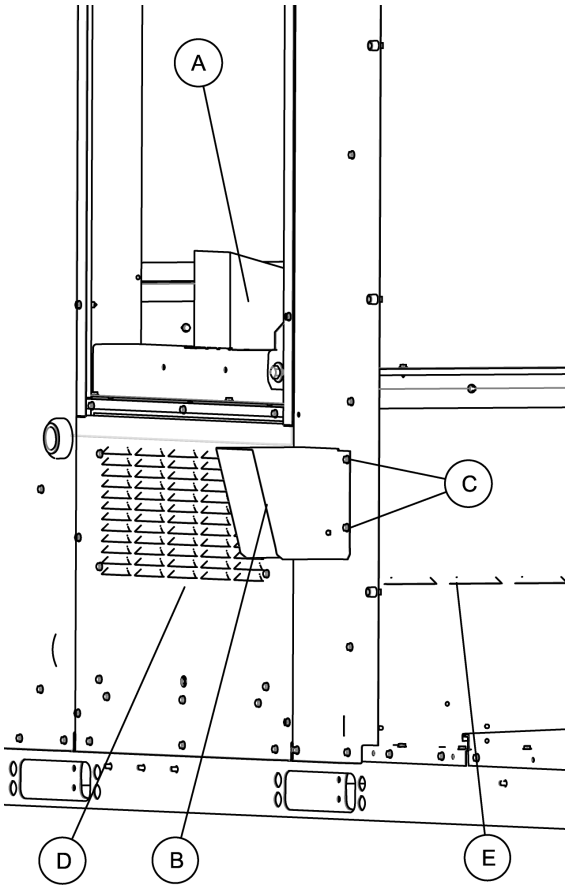
- The vaporization rate which depends on the temperature of the liquid and the wetted surface area of the containers.
- The proper pressure regulation. Two-stage regulation is recommended.
- The pressure drop in the lines between regulators and between the second stage regulator and the appliance. The pipe size required depends on the length of the pipe run and the total load of all appliances.

Complete information regarding tank sizing for vaporization, recommended regulator settings, and pipe sizing is available from most regulator manufacturers and propane gas suppliers.

Combustion air intake and flue exhaust

Combustion air intake louvers are incorporated into the heating compartment right outside wall and access panel. The flue exhaust is discharged out the front of the unit. Remove the factory shipping label and 4 screws that cover the exhaust opening. The flue exhaust hood is shipped in the blower compartment and must be installed over the discharge opening as shown in Figure 72 using these 4 screws. If necessary, a flue exhaust extension accessory may be installed in place of the hood.

Figure 72: Flue Exhaust Hood Detail



Item	Desciption
A	Flue Exhaust Hood (shipping location)
B	Flue Exhaust Hood (field-installed location)
C	Mounting screws, 4 x (included)
D	Combustion air intake louvers
E	Combustion air intake louvers

Options and accessories

The following sections describe options and accessories.

Electric heat

Electric heaters are available as factory-installed options or field-installed accessories. These heaters mount in the heat compartment with the heating elements extending into the supply air chamber. All electric heaters are fused and intended for use with single point power supply.

Motorized outdoor damper

The motorized outdoor damper can be a factory-installed option or a field-installed accessory. Field-installed motorized outdoor damper accessories include complete instructions for installation.

Economizer sequences

Several functions can drive the economizer, including: minimum position, free cooling, economizer loading, and minimum outdoor air supply.

Economizer minimum position

The economizer minimum position is set during occupied mode when outside air is not suitable for free cooling. The position of the damper is set proportionally between the economizer minimum position and the economizer minimum position low speed fan setpoints, in relationship to the VFD output percentage. On a constant volume single speed supply fan system, set both setpoints to the same value.

Free Cooling

Four types of free cooling options are available: dry bulb changeover, single enthalpy, dual enthalpy changeover, and auto.

Dry bulb changeover

For dry bulb economizer operation, the outside air is suitable for free cooling if the outside air temperature is 1°F below the economizer OAT enable setpoint and 1°F below the return air temperature (RAT).

Free cooling is no longer available if the outside air temperature rises above either the economizer OAT enable setpoint or the return air temperature.

Single enthalpy changeover

For single enthalpy economizer operation, the outside air is suitable for free cooling if the outside air enthalpy is at least 1 Btu/lb below the economizer outside air enthalpy setpoint and the outside air temperature is no greater than the RAT plus 9°F.

If the outside air temperature rises above the RAT plus 10°F, free cooling is no longer available. The outside air temperature must drop to no greater than RAT plus 9°F to enter free cooling again.

Free cooling is no longer available if the outside air enthalpy rises above the economizer outside air enthalpy setpoint.

Dual enthalpy changeover

For dual enthalpy economizer operation, the outside air enthalpy must be lower than the return air enthalpy by 1 Btu/lb and the outside air temperature is no greater than the RAT plus 9°F.

Auto

The control determines the type of free cooling changeover based on which sensors are present and reliable. Conditions include the following:

- Return and outside air dry bulb = dry bulb changeover
- Return and outside air dry bulb and outside air humidity = single enthalpy
- Return and outside air dry bulb and return and outside air humidity = dual enthalpy
- If either the return or outside air dry bulb sensors are unreliable, free cooling is not available

Free cooling operation

When the control determines that the outside air is suitable, the first stage of cooling is always free cooling.

Thermostat

In free cooling, with a thermostat input to Y1, the dampers modulate to control the supply air temperature to the economizer setpoint +/- 1°F (default 55°F).

If the thermostat provides an input to Y2 and the parameter COMPRESSORS OFF IN FREE COOLING is turned OFF, a compressor output energizes. The economizer dampers continue to modulate to control the supply air temperature to the economizer setpoint.

If the supply air temperature cannot be maintained within 5°F of the economizer setpoint, the first stage compressor (C1) is turned on. The second stage compressor (C2) is added as needed to keep the supply air temperature within the 5°F of the economizer setpoint.

Sensor

In free cooling, with a demand from the zone/return sensor for the first stage of cooling, the dampers modulate to control the supply air temperature to the economizer setpoint +/- 1°F.

If the economizer output is at 100% and the SAT is greater than the economizer setpoint + 1°F, the control starts a 12-minute timer to energize a compressor output.

If at any time the economizer output drops below 100%, the timer stops and resets when the economizer output returns to 100%.

When a compressor output is turned ON, the economizer dampers continue to modulate to control the supply air temperature to the economizer setpoint.

At no time is a compressor output turned ON if the economizer output is less than 100%, even if the differential between zone (or return) temperature and the current cooling setpoint is great enough to demand more than one stage of cooling.

If the economizer output goes to minimum position and the SAT is less than economizer setpoint -1°F, the control starts a 12-minute timer to de-energize a compressor output.

If at any time the economizer output goes above the minimum position, the timer stops and resets when the economizer output returns to minimum position.

If the demand for cooling from the space/return is satisfied, the economizer output modulates to minimum position and the compressor outputs are de-energized as long as their minimum run timers have expired.

Power exhaust

Setpoints

- Economizer enable: ON
- Power exhaust enable: ON
- Modulating power exhaust: OFF
- Exhaust VFD installed: OFF
- Building pressure sensor enabled: OFF
- Econo damper position for exh fan: ON Percent
- Econo damper position for exh fan: OFF Percent

Inputs

No inputs are present for non-modulating power exhaust.

Outputs

- 2-10 VDC from ECON on the economizer expansion module
- 24 VAC from EX-FAN to energize the exhaust fan on the economizer expansion module

Operation

Operation details include the following items:

- Compares the economizer output to the economizer damper position for exhaust fan on and off
- Energizes the exhaust fan when the economizer output is above the economizer damper position for exhaust fan on
- De-energizes the exhaust fan when the economizer output is below the economizer damper position for exhaust fan off

Modulating power exhaust

Setpoints

- Power exhaust fan type (ExFType) modulating damper
- Exhaust damper position fan on (ExDmpPosFanOn)
- Exhaust damper position fan off (ExDmpPosFanOff)
- Building pressure setpoint (Bldg-Sp)
- Building pressure reading (Bldg-Pres)

Inputs

The input for modulating power exhaust is: 0 to 5 VDC from building pressure sensor to terminals BLDG PRES.

Outputs

The outputs include the following items:

- 2 to 10 VDC from EX VFD for exhaust discharge damper modulation.
- 24 VAC from EX-FAN to energize exhaust fan

Operation

If the building pressure is above the building pressure setpoint, the exhaust damper output (EX VFD) increases to open the exhaust damper. If the building pressure is below the building pressure setpoint, the exhaust damper output (EX VFD) decreases to close exhaust damper. The EX-FAN output energizes when the exhaust damper output is greater than the exhaust damper position fan on. The EX-FAN output de-energizes when the exhaust damper output is less than the exhaust damper position fan off.

Modulating power exhaust with VFD

Setpoints and related data

The setpoints and related data include the following items:

- Power exhaust fan type (ExFType) variable frequency fan
- Building pressure setpoint (Bldg-Sp)
- Building pressure reading (Bldg-Pres)

Inputs

The input for modulating power exhaust with VFD is 0 to 5 VDC from building pressure sensor to terminal BLDG PRES.

Outputs

The outputs include the following items:

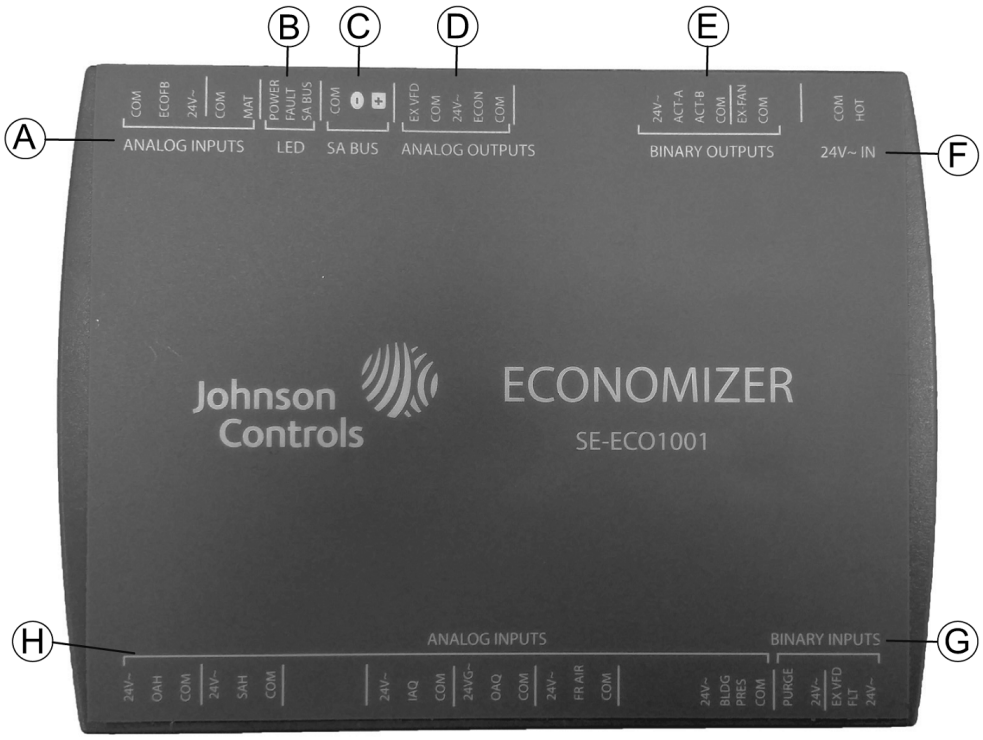
- 2 to 10 VDC from EX VFD
- 24 VAC from EX-FAN

Operation

If the building pressure is above the building pressure setpoint, the exhaust output (EX VFD) increases. If the building pressure is below the building pressure setpoint, the exhaust output (EX VFD) decreases. The EX-FAN binary output is energized any time the EX VFD analog output is greater than 2.16 VDC. The EX-FAN binary output is de-energized any time the EX VFD analog output is less than or equal to 2.16 VDC. The rate of change of the analog output is determined by the deviation from setpoint and length of time away from setpoint.

Smart Equipment™ economizer board

Figure 73: SE-ECO1001-0 economizer controller



The following tables describe the details of the economizer board. See the previous figure for connection locations.

Table 57: Smart Equipment™ economizer board - analog inputs

Location	Board label	Cover label	Description	Function and comments
A	C	COM	24 VAC common/0-10 VDC negative for economizer actuator position feedback	Connects through circuit trace to 24V~ IN pin COM
	IN2	ECOFB	0-10 VDC positive input from economizer actuator position feedback	The EconDampPos parameter reports input status (0-100%). Used to meet California Title 24 requirements for economizer actuator position feedback.
	R	24V~	24 VAC hot supplied for economizer actuator position feedback	Connects through circuit trace to 24V~ IN pin HOT
	C	COM	Mixed air temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	The MAT parameter reports input status (°F/°C), 3.65 VDC reading MAT (+) to COM (–) with open circuit. Read-only use in current control revision.
	IN1	MAT		

Table 57: Smart Equipment™ economizer board - analog inputs

Location	Board label	Cover label	Description	Function and comments
H	R	24V~	24 VAC hot supplied for the outdoor air humidity sensor	Connects through circuit trace to 24V~ IN pin HOT
	IN3	OAH	0-10 VDC positive input from the Outdoor Air Humidity sensor	OAH parameter reports input status (0-100%H). Used in outdoor air enthalpy calculation for dual enthalpy economizer free cooling changeover.
	C	COM	24 VAC common/0-10 VDC negative for the outdoor air humidity sensor	Connects through circuit trace to 24V~ IN pin COM
	R	24V~	24 VAC hot supplied for the supply air humidity sensor	Connects through circuit trace to 24V~ IN pin HOT
	IN4	SAH	0-10 VDC positive input from the Supply Air Humidity sensor	SAH parameter reports input status (0-100%H). Unused in current control revision.
	C	COM	24 VAC common/0-10 VDC negative for the supply air humidity sensor	Connects through circuit trace to 24V~ IN pin COM
	R	24V~	24 VAC hot supplied for the indoor air quality sensor	Connects through circuit trace to 24V~ IN pin HOT
	IN5	IAQ	0-10 VDC positive input from the Indoor Air Quality sensor	IAQRange parameter sets the CO2 parts per million measured by the indoor air quality sensor when it outputs 10 VDC; IAQ parameter reports input status (0-5000ppm). Used for demand ventilation functions if the NetIAQ parameter indicates ?Unrel.
	C	COM	24 VAC common/0-10 VDC negative for the indoor air quality sensor	Connects through circuit trace to 24V~ IN pin COM
	R	24V~	24 VAC hot supplied for the outdoor air quality sensor	Connects through circuit trace to 24V~ IN pin HOT
	IN6	OAQ	0-10 VDC positive input from the Outdoor Air Quality sensor	OAQRange parameter sets the CO2 parts per million measured by the outdoor air quality sensor when it outputs 10 VDC; OAQ parameter reports input status (0-5000ppm). Used for demand ventilation function when DVent-Mode selection is Diff between IAQ and OAQ and the NetOAQ parameter indicates ?Unrel.
	C	COM	24 VAC common/0-10 VDC negative for the outdoor air quality sensor	Connects through circuit trace to 24V~ IN pin COM
	R	24V~	24 VAC hot supplied for the air monitoring station sensor	Connects through circuit trace to 24V~ IN pin HOT
	IN7	FR AIR	0-10 VDC positive input from the air monitoring station sensor	MOA-Range parameter sets the cubic feet per minute/liters per second measured by the air monitoring station sensor when it outputs 10 VDC; Fr Air parameter reports input status (0-50000CFM/23595lps). Used for economizer minimum position reset in speed-controlled indoor blower applications.
	C	COM	24 VAC common/0-10 VDC negative for the air monitoring station sensor	Connects through circuit trace to 24V~ IN pin COM
	R	24V~	24 VAC hot supplied for the building pressure sensor	Connects through circuit trace to 24V~ IN pin HOT
	IN8	BLDG PRES	0-5 VDC positive input from the Building Pressure sensor	BldgPres parameter reports input status (-.250-.250”/w/-.062-.062kPa). Used for modulating power exhaust functions when ExFType selection is Modulating Damper or Variable Frequency Fan.
	C	COM	24 VAC common/0-5 VDC negative for the building pressure sensor	Connects through circuit trace to 24V~ IN pin COM

Table 58: Smart Equipment™ economizer board - LED details

Location	Board label	Cover label	Description	Function and comments
B	POWER	POWER	Green UCB power indicator	Lit indicates 24 VAC is present at 24V~ IN COM and HOT pins
	FAULT	FAULT	Red networking error and firmware error indicator	1/10th second on/off flashing indicates a networking error (polarity, addressing, etc.) or a firmware error (likely correctable with re-loading from USB flash drive)
	SA BUS	SA BUS	Green UCB SA bus communication transmission indicator	Lit/flickering indicates UCB-to-economizer board SA bus communication is currently active, off indicates the economizer board is awaiting SA bus communication

Table 59: Smart Equipment™ economizer board - SA bus details

Location	Board label	Cover label	Description	Function and comments
C[1]	C	COM	Common for SA BUS power and communication circuits	EconCtrlr parameter reports UCB-to-economizer board SA bus communication status. Negative of the SA BUS communication circuit to the UCB. Through the unit wiring harness, may continue on to the 4-stage board and/or fault detection and diagnostics board
	–	–	Communication for SA BUS devices	EconCtrlr parameter reports UCB-to-economizer board SA BUS communication status. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +) SA BUS communication circuit to the UCB. Through the unit wiring harness, may continue on to the 4-stage board and/or fault detection and diagnostics board
	+	+	Communication for SA BUS devices	EconCtrlr parameter reports UCB-to-economizer board SA BUS communication status. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts higher than –) SA BUS communication circuit to the UCB. Through the unit wiring harness, may continue on to the 4-stage board and/or fault detection and diagnostics board

1 When wiring the unit and other devices using the SA Bus and FC Bus, see Cable recommendations.

Table 60: Smart Equipment™ economizer board - analog outputs

Location	Board label	Cover label	Description	Function and comments
D	J4	EX VFD	2-10 VDC positive output for the modulating power Exhaust fan Variable Frequency Drive/discharge damper modulating power exhaust actuator	ExFanVFD parameter reports output status (0-100%) when ExFType selection is Variable Frequency Fan; EAD-O parameter reports output status (0-100%) when ExFType selection is Modulating Damper. Used to ramp the power exhaust fan VFD/position the discharge damper actuator.
		COM	24 VAC common/0-10 VDC negative for the power exhaust variable frequency drive/discharge damper modulating power exhaust actuator	Connects through circuit trace to 24V~ IN pin COM
		24V~	24 VAC hot supplied for the discharge damper modulating power exhaust actuator and economizer actuator	Connects through circuit trace to 24V~ IN pin HOT
		ECON	2-10 VDC output for the Economizer actuator	Econ parameter reports output status (0-100%). Used to position the economizer actuator for minimum position, free cooling, demand ventilation, cooling economizer loading and purge functions
		COM	24 VAC common/0-10 VDC negative for economizer actuator	Connects through circuit trace to 24V~ IN pin COM

Table 61: Smart Equipment™ economizer board - binary outputs

Location	Board label	Cover label	Description	Function and comments
E	J3	24V~	24 VAC hot supplied for an incremental (floating control) economizer actuator	Connects through circuit trace to 24V~ IN pin HOT
		ACT-A	24 VAC hot outputs to position an incremental (floating control) economizer actuator	Unused in current control revision
		ACT-B	24 VAC return	Unused in current control revision
		COM	24 VAC common for an incremental (floating control) economizer actuator	Connects through circuit trace to 24V~ IN pin COM
		EX-FAN	24 VAC hot output to energize power exhaust fan contactor coil/VFD enable relay coil	ExFan parameter reports output status (Off-On) when ExFType selection is Non-Modulating, Modulating Damper or Variable Frequency Fan. Used to turn on/enable the power exhaust fan motor.
		COM	24 VAC common/0-10 VDC negative for economizer actuator	Connects through circuit trace to 24V~ IN pin COM

Table 62: Smart Equipment™ economizer board - 24V~ IN connections

Location	Board label	Cover label	Description	Function and comments
F	C	COM	24 VAC transformer Common referenced to cabinet ground	24 VAC common connection to power the economizer board. Connects through circuit traces to C/COM terminals and pins distributed on the economizer board.
	R	HOT	24 VAC transformer HOT	24 VAC hot connection to power the economizer board. Connects through circuit traces to R/24V~ terminals and pins distributed on the economizer board.

Table 63: Smart Equipment™ economizer board - binary inputs

Location	Board label	Cover label	Description	Function and comments
G	IN9	PURGE	24 VAC hot input from the PURGE dry contact	Purge parameter reports input status (False with 0 VAC input-True with 24 VAC input). When Purge status is True, heating and cooling operation is prevented, the indoor blower and power exhaust fan operate, the economizer actuator is positioned to 100%.
		24V~	24 VAC hot supplied for the purge dry contact	Connects through circuit trace to 24V~ IN pin HOT
	IN10	EX VFD FLT	24 VAC hot input from the power Exhaust Variable Frequency Drive Fault contact	ExFanVFDFlt parameter reports input status (Normal with 0 VAC input-Alarm with 24 VAC input) when ExFType selection is Variable Frequency Fan. When ExFanVFDFlt status is Alarm, EX-FAN fan output is prevented.
		24V~	24 VAC hot supplied for the power exhaust variable frequency drive fault contact	Connects through circuit trace to 24V~ IN pin HOT

Indoor air quality

Indoor air quality (IAQ) is regulated by an indoor sensor input. The IAQ sensor is connected to the economizer board through the IAQ analog input terminal and the associated COM and 24V~ inputs on the economizer board. Terminal IAQ accepts a 0 to +10 VDC signal with respect to the IAQ terminal. When the signal is below its setpoint, the actuator can modulate normally in accordance with the enthalpy and mixed air sensor inputs. When the IAQ signal exceeds its setpoint setting and there is no call for free cooling, the actuator is proportionately modulated from the 0 to 10 VDC signal, with 0 VDC corresponding to full closed and 10 VDC corresponding to full open. When there is no call for free cooling, the damper position is limited by the IAQ maximum damper position setting. When the signal exceeds its setpoint (demand control ventilation setpoint) setting and there is a call for free cooling, the actuator modulates from the minimum position to the full open position based on the highest call from either the mixed air sensor input or the IAQ voltage input.

- Optional CO^2 space sensor kit (wall mount) - part no. 2AQ04700724
- Optional CO^2 sensor kit (unit mount) - part no. 2AQ04700624

Phasing

All units are properly phased at the factory. Check for proper compressor rotation. If the blower or compressors rotate in the wrong direction at start-up, the electrical connection to the unit is misphased. Change the phasing of the field line connection at the factory or field supplied disconnect to obtain proper rotation. Scroll compressors operate in only one direction. The scroll is misphased if it is drawing low amperage, has similar suction and discharge pressures, or it produces a high noise level.

⚠ CAUTION

Scroll compressors require proper rotation to operate correctly. Units are properly phased at the factory. Do not change the internal wiring to make the blower condenser fans or compressor rotate correctly.

Blower rotation

Check for proper supply air blower rotation. If the blower is rotating backwards, the line voltage at the unit point of power connection is misphased. See Phasing.

Adjusting the belt tension

To adjust the belt tension complete the following steps.

1. Loosen the four sled bolts (A).

Figure 74: Top View

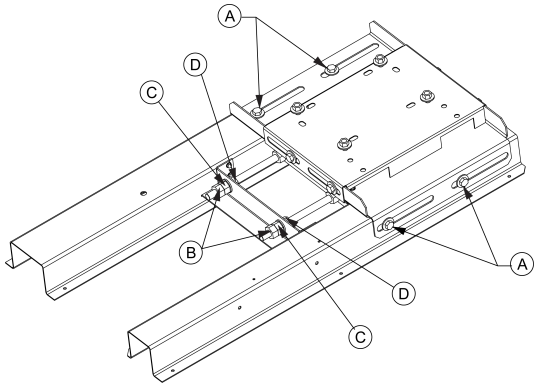
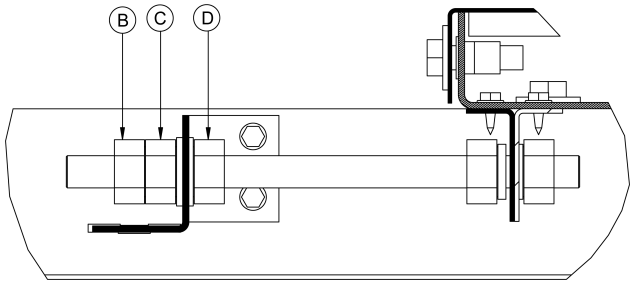


Figure 75: Side View



2. Break lock between nuts (B) and (C).

3. Adjust belt tension via adjustment nuts:

   a. Clear nuts (C) away from bracket and turn adjustment nuts (D) against bracket to increase belt tension.
   b. Clear nuts (D) away from bracket and turn adjustment nuts (C) against bracket to decrease belt tension.

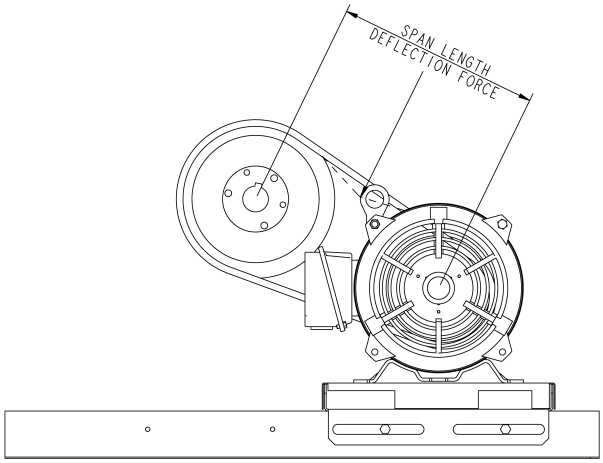
   ⓘ **Note:** For two-belt applications, adjust the two nut/bolt assemblies so that equal tension is obtained for both belts.

   ⓘ **Note:** New belts should be tensioned to the maximum deflection force recommended for the belt section. Table 64 contains the values to be used after break-in of new belts.

⚠ CAUTION

Check the belt tension at least two times during the first 24 hours of operation. After 24 hours of operation, retension to the recommended values in Table 64.

Figure 76: Measuring Belt Tension



4. Measure belt tension:

   a. Use a belt tension checker to apply a perpendicular force to one belt at the midpoint of the span as shown in the following figure. To determine the deflection distance from normal position, reference the adjacent belt (if applicable) or use a straight edge from sheave to sheave as a reference line.
   b. Increase applied force until a deflection distance of 0.2 inches is obtained and compare the measured deflection force against recommended deflection force in Table 64
   c. Adjust belt tension until recommended deflection force is measured.

5. After belt(s) have been tensioned properly, move all nuts (B, C, and D) against bracket and lock nut (B) against nut (C).

6. Tighten the four sled bolts (A).

Table 64: Belt tension

Belt Tension		
Application (Tons and Static)	**Deflection Force (lb.)**	**Deflection Distance (in.)**
15T Std	4.37	0.2
15T Med	6.26	0.2
15T High	6.75	0.2
17.5T Std	4.17	0.2
17.5T Med	6.36	0.2
17.5T High	8.33	0.2
20T Std	6.76	0.2
20T Med	5.52	0.2
20T High	9.54	0.2
25T Std	5.95	0.2
25T Med	5.52	0.2
25T High	6.66	0.2
27.5T Std	8.33	0.2
27.5T Med	9.54	0.2
27.5T High	7.12	0.2

CFM static pressure and power-altitude and temperature corrections

Use the information below to assist in the application of the product at altitudes at or exceeding 1000 feet above sea level.

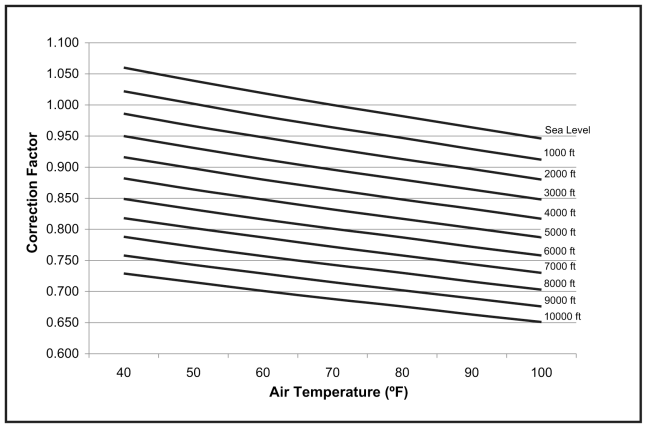
The air flow rates listed in the standard blower performance tables are based on standard air at sea level. As the altitude or temperature increases, the density of air decreases. In order to use the indoor blower tables for high altitude applications, certain corrections are necessary.

A centrifugal fan is a constant volume device. This means that, if the RPM remains constant, the CFM delivered is the same regardless of the density of the air. However, since the air at high altitude is less dense, less static pressure is generated and less power is required than a similar application at sea level. Air density correction factors are shown in the following table and figure.

Table 65: Altitude/temperature correction factors

Air temp.	Altitude (ft.)										
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
40	1.060	1.022	0.986	0.950	0.916	0.882	0.849	0.818	0.788	0.758	0.729
50	1.039	1.002	0.966	0.931	0.898	0.864	0.832	0.802	0.772	0.743	0.715
60	1.019	0.982	0.948	0.913	0.880	0.848	0.816	0.787	0.757	0.729	0.701
70	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.715	0.688
80	0.982	0.947	0.913	0.880	0.848	0.817	0.787	0.758	0.730	0.702	0.676
90	0.964	0.929	0.897	0.864	0.833	0.802	0.772	0.744	0.716	0.689	0.663
100	0.946	0.912	0.880	0.848	0.817	0.787	0.758	0.730	0.703	0.676	0.651

Figure 77: Altitude/temperature correction factors



Use the following examples to assist in determining the airflow performance of the product at altitude.

Example 1

What are the corrected CFM, static pressure, and BHP at an elevation of 5,000 ft. if the blower performance data is 6,000 CFM, 1.5 IWC and 4.0 BHP?

Solution 1

At an elevation of 5,000 ft. the indoor blower will still deliver 6,000 CFM if the rpm is unchanged. However, supply air limitations table must be used to determine the static pressure and BHP. Since no temperature data is given, we will assume an air temperature of 70°F. The airflow performance table shows the correction factor to be 0.832.

Corrected static pressure = 1.5 x 0.832 = 1.248 IWC

Corrected BHP = 4.0 x 0.832 = 3.328

Example 2

A system, located at 5,000 feet of elevation, is to deliver 6,000 CFM at a static pressure of 1.5 in. Use the unit blower tables to select the blower speed and the BHP requirement.

Solution 2

As in the example above, no temperature information is given so 70°F is assumed.

The 1.5 in. static pressure given is at an elevation of 5,000 ft. The first step is to convert this static pressure to equivalent sea level conditions.

Sea level static pressure = 1.5 / .832 = 1.80 in.

Enter the blower table at 6000 sCFM and static pressure of 1.8". The rpm listed will be the same rpm needed at 5,000 ft.

Suppose that the corresponding BHP listed in the table is 3.2. This value must be corrected for elevation.

BHP at 5,000 ft. = 3.2 x .832 = 2.66

Drive selection

1. Determine the required airflow.
2. Calculate or measure the amount of external static pressure.
3. With the operating point determined from the previous steps, locate this point on the appropriate supply air blower performance table. Linear interpolation may be necessary.
4. Note the RPM and BHP from the previous step and locate the appropriate motor and/or drive.
5. Review the BHP compared to the motor options available. Select the appropriate motor and/or drive.
6. Review the RPM range for the motor options available. Select the appropriate drive if multiple drives are available for the chosen motor.

7. Determine the turns open to obtain the required operation point.

Example

1. 5100 CFM
2. 0.8 iwg
3. Using the supply air blower performance table below, the following data point was located: 781 RPM and 1.97 BHP.
4. Using the RPM selection table below, Size X and Model Y is found.
5. 1.97 BHP does not exceed the maximum continuous BHP rating of any of the 3 motor options, so all 3 motors are still eligible for selection.
6. 781 RPM falls within the range of the 3 HP drive.
7. Using the 3 HP motor, 3.5 turns open achieves 781 RPM.

Table 66: Example supply air blower performance

Air flow (CFM)	Available external static pressure - IWG [1]																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Standard 2 HP and drive				Medium static 3 HP and drive								High static 5 HP and drive							
4500	575	0.74	636	1.07	697	1.39	759	1.71	821	2.02	881	2.30	941	2.56	998	2.78	1054	2.95	1106	3.08
4800	586	0.87	647	1.19	708	1.51	770	1.83	831	2.14	892	2.42	951	2.68	1009	2.90	1064	3.08	1117	3.20
5100	597	1.00	658	1.32	720	1.65	781	1.97	843	2.27	904	2.56	963	2.81	1021	3.03	1076	3.21	1129	3.33
5400	610	1.14	671	1.47	732	1.79	794	2.11	856	2.42	916	2.70	976	2.96	1033	3.18	1089	3.35	1141	3.48
															High static 5 HP and field supplied drive					

1 Blower performance includes gas heat exchangers and 2-inch filters. See the Static resistance table for additional applications. See the RPM selection table to determine the required motor sheave setting and to determine the maximum continuous BHP. kW = BHP x 0.833

Table 67: Example RPM selection

Model	HP	Max BHP	Motor sheave	Blower sheave	6 turns open	5 turns open	4 turns open	3 turns open	2 turns open	1 turn open	Fully closed
AV15	2.0	2.30	1VP40	AK89	N/A	487	528	568	609	649	690
	3.0	3.45	1VP40	BK77	656	705	753	802	851	899	948
	5.0	5.75	1VP60	BK100	789	826	862	899	936	972	1009

Airflow performance

Table 68: AV15 bottom duct application

Air flow (CFM)	Available external static pressure - IWG [1]																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Standard 2 HP and drive				Medium static 3 HP and drive								High static 5 HP and drive							
4500	575	0.74	636	1.07	697	1.39	759	1.71	821	2.02	881	2.30	941	2.56	998	2.78	1054	2.95	1106	3.08
4800	586	0.87	647	1.19	708	1.51	770	1.83	831	2.14	892	2.42	951	2.68	1009	2.90	1064	3.08	1117	3.20
5100	597	1.00	658	1.32	720	1.65	781	1.97	843	2.27	904	2.56	963	2.81	1021	3.03	1076	3.21	1129	3.33
5400	610	1.14	671	1.47	732	1.79	794	2.11	856	2.42	916	2.70	976	2.96	1033	3.18	1089	3.35	1141	3.48
5700	624	1.30	684	1.62	746	1.95	808	2.26	869	2.57	930	2.86	989	3.11	1047	3.33	1102	3.51	1155	3.63
6000	638	1.47	699	1.79	760	2.11	822	2.43	884	2.74	944	3.02	1004	3.28	1061	3.50	1117	3.68	1169	3.80
6300	653	1.65	714	1.97	776	2.30	837	2.61	899	2.92	960	3.21	1019	3.46	1077	3.68	1132	3.86	1185	3.98
6600	669	1.84	730	2.17	792	2.49	854	2.81	915	3.12	976	3.40	1035	3.66	1093	3.88	1148	4.05	1201	4.18
6900	686	2.05	747	2.38	809	2.70	870	3.02	932	3.33	992	3.61	1052	3.87	1109	4.09	1165	4.26	1218	4.39
7200	704	2.28	764	2.60	826	2.92	888	3.24	949	3.55	1010	3.83	1069	4.09	1127	4.31	1182	4.49	1235	4.61
7500	722	2.51	783	2.84	844	3.16	906	3.48	967	3.79	1028	4.07	1087	4.33	1145	4.55	1200	4.72	1253	4.85
											High static 5 HP and field supplied drive									

1 Blower performance includes gas heat exchangers and 2-inch filters. See the Static resistance table for additional applications. See the RPM selection table to determine the required motor sheave setting and to determine the maximum continuous BHP. kW = BHP x 0.968

Table 69: AV18 bottom duct application

Air flow (CFM)	Available external static pressure - IWG[1]																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Std 3 HP and field drive		Standard static 3 HP and drive						Med static 5 HP and drive				High static 7.5 HP and drive							
5400	648	1.00	703	1.41	758	1.77	813	2.10	868	2.40	923	2.69	977	2.96	1031	3.24	1085	3.52	1137	3.82
5800	662	1.24	716	1.65	771	2.01	827	2.34	882	2.64	937	2.93	991	3.20	1045	3.47	1099	3.76	1151	4.06
6200	677	1.50	732	1.91	787	2.27	842	2.60	897	2.91	952	3.19	1007	3.46	1061	3.74	1114	4.02	1167	4.32
6600	695	1.79	749	2.20	804	2.56	860	2.89	915	3.19	970	3.48	1024	3.75	1078	4.02	1131	4.31	1184	4.61
7000	714	2.10	768	2.51	824	2.87	879	3.20	934	3.50	989	3.79	1043	4.06	1097	4.34	1151	4.62	1203	4.92
7400	735	2.43	789	2.84	844	3.21	900	3.54	955	3.84	1010	4.12	1064	4.40	1118	4.67	1172	4.95	1224	5.25
7800	757	2.79	812	3.20	867	3.57	922	3.89	977	4.20	1032	4.48	1087	4.75	1141	5.03	1194	5.31	1247	5.61
8200	782	3.17	836	3.58	891	3.95	947	4.27	1002	4.58	1057	4.86	1111	5.13	1165	5.41	1219	5.69	1271	5.99
8600	808	3.57	862	3.98	918	4.35	973	4.67	1028	4.98	1083	5.26	1137	5.53	1191	5.81	1245	6.09	1297	6.39
9000	835	3.99	890	4.40	945	4.77	1000	5.10	1056	5.40	1111	5.68	1165	5.96	1219	6.23	1272	6.51	1325	6.81
											High static 7.5 HP and field supplied drive									

1 Blower performance includes gas heat exchangers and 2-inch filters. See the Static resistance table for additional applications. See the RPM selection table to determine the required motor sheave setting and to determine the maximum continuous BHP. kW = BHP x 0.929

Table 70: AV20 bottom duct application

Air Flow (CFM)	Available external static pressure - IWG[1]																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Standard static 5 HP and drive								Medium static 7.5 HP and drive						High static 10 HP and drive					
6000	703	1.38	751	1.78	799	2.15	848	2.49	897	2.81	947	3.10	997	3.37	1047	3.63	1098	3.86	1149	4.09
6500	723	1.71	770	2.11	819	2.47	867	2.82	917	3.13	966	3.43	1017	3.70	1067	3.95	1118	4.19	1168	4.41
7000	745	2.08	792	2.47	841	2.84	889	3.19	939	3.50	988	3.79	1039	4.07	1089	4.32	1140	4.56	1190	4.78
7500	769	2.49	817	2.89	865	3.26	914	3.60	963	3.91	1013	4.21	1063	4.48	1113	4.73	1164	4.97	1215	5.20
8000	796	2.94	843	3.34	891	3.71	940	4.05	990	4.37	1039	4.66	1089	4.94	1140	5.19	1190	5.43	1241	5.65
8500	825	3.44	872	3.84	920	4.21	969	4.55	1018	4.87	1068	5.16	1118	5.44	1169	5.69	1219	5.93	1270	6.15
9000	855	3.99	903	4.39	951	4.75	1000	5.10	1049	5.41	1099	5.71	1149	5.98	1199	6.23	1250	6.47	1301	6.69
9500	888	4.57	936	4.97	984	5.34	1033	5.68	1082	6.00	1132	6.29	1182	6.56	1232	6.82	1283	7.05	1334	7.28
10000	923	5.20	971	5.59	1019	5.96	1068	6.30	1117	6.62	1167	6.91	1217	7.19	1267	7.44	1318	7.68	1368	7.90
													High static 10 HP and field supplied drive							

1 Blower performance includes gas heat exchangers and 2-inch filters. See the Static resistance table for additional applications. See the RPM selection table to determine the required motor sheave setting and to determine the maximum continuous BHP. kW = BHP x 0.929

Table 71: AV25 bottom duct application

Air flow (CFM)	Available external static pressure - IWG[1]																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Standard static 5 HP and drive								Medium static 7.5 HP and drive						High static 10 HP and drive					
7500	780	2.53	832	2.95	884	3.34	937	3.72	990	4.07	1043	4.41	1095	4.75	1147	5.07	1198	5.39	1248	5.70
8000	807	2.99	858	3.41	911	3.80	963	4.17	1016	4.53	1069	4.87	1121	5.20	1173	5.53	1224	5.84	1274	6.16
8500	835	3.48	886	3.89	938	4.29	991	4.66	1044	5.02	1097	5.36	1149	5.69	1201	6.01	1252	6.33	1302	6.65
9000	864	3.99	916	4.41	968	4.80	1021	5.18	1074	5.53	1126	5.87	1179	6.20	1231	6.53	1282	6.85	1332	7.16
9500	895	4.53	947	4.95	999	5.34	1052	5.72	1105	6.07	1158	6.41	1210	6.75	1262	7.07	1313	7.39	1363	7.70
10000	928	5.10	980	5.52	1032	5.91	1085	6.28	1138	6.64	1190	6.98	1243	7.31	1295	7.64	1346	7.95	1396	8.27
10500	962	5.69	1014	6.11	1066	6.50	1119	6.87	1172	7.23	1225	7.57	1277	7.90	1329	8.23	1380	8.54	1430	8.86
11000	998	6.30	1050	6.72	1102	7.11	1155	7.49	1208	7.84	1260	8.18	1313	8.52	1365	8.84	1416	9.16	1466	9.47
11500	1035	6.94	1087	7.36	1139	7.75	1192	8.12	1245	8.48	1298	8.82	1350	9.15	1402	9.47	1453	9.79	1503	10.11
12000	1074	7.60	1125	8.01	1178	8.41	1230	8.78	1283	9.14	1336	9.48	1389	9.81	1440	10.13	1492	10.45	1542	10..77
12500	1114	8.27	1165	8.69	1218	9.08	1270	9.46	1323	9.81	1376	10.15	1428	10.49	1480	10.81	1531	11.13	-	-
									High static 10 HP and field supplied drive											

1 Blower performance includes gas heat exchangers and 2-inch filters. See the Static resistance table for additional applications. See the RPM selection table to determine the required motor sheave setting and to determine the maximum continuous BHP. kW = BHP x 0.929

Table 72: AV28 bottom duct application

Air flow (CFM)	Available external static pressure - IWG[1]																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Standard static 7.5 HP and drive								Medium static 10 HP and drive						High static 12 HP and drive					
8000	836	2.61	883	3.24	930	3.83	979	4.37	1027	4.88	1076	5.35	1125	5.78	1174	6.18	1222	6.55	1269	6.90
8500	862	3.21	909	3.84	956	4.43	1005	4.97	1053	5.48	1102	5.95	1151	6.38	1200	6.78	1248	7.15	1295	7.50
9000	890	3.85	936	4.48	984	5.07	1032	5.62	1081	6.12	1130	6.59	1178	7.02	1227	7.42	1275	7.79	1323	8.14
9500	918	4.53	965	5.16	1013	5.75	1061	6.30	1109	6.80	1158	7.27	1207	7.70	1256	8.11	1304	8.48	1352	8.82
10000	949	5.25	995	5.89	1043	6.47	1091	7.02	1140	7.52	1189	7.99	1237	8.43	1286	8.83	1334	9.20	1382	9.54
10500	980	6.01	1027	6.65	1074	7.23	1123	7.78	1171	8.28	1220	8.75	1269	9.19	1318	9.59	1366	9.96	1413	10.30
11000	1013	6.81	1060	7.44	1107	8.03	1155	8.58	1204	9.08	1253	9.55	1302	9.98	1350	10.38	1399	10.75	1446	11.10
11500	1047	7.64	1094	8.27	1141	8.86	1189	9.41	1238	9.91	1287	10.38	1336	10.81	1384	11.21	1433	11.59	1480	11.93
12000	1082	8.51	1129	9.14	1177	9.73	1225	10.27	1273	10.78	1322	11.25	1371	11.68	1420	12.08	1468	12.45	1515	12.79
12500	1119	9.40	1165	10.04	1213	10.62	1261	11.17	1310	11.68	1359	12.14	1407	12.58	1456	12.98	1504	13.35	-	-
13000	1156	10.33	1203	10.97	1250	11.55	1299	12.10	1347	12.61	1396	13.07	1445	13.51	-	-	-	-	-	-
13500	1195	11.29	1241	11.93	1289	12.51	1337	13.06	1386	13.57	-	-	-	-	-	-	-	-	-	-
14000	1234	12.28	1281	12.92	1328	13.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
							High static 12 HP and field supplied drive													

1 Blower performance includes gas heat exchangers and 2-inch filters. See the Static resistance table for additional applications. See the RPM selection table to determine the required motor sheave setting and to determine the maximum continuous BHP. kW = BHP x 0.819

Air balance

⚠ CAUTION

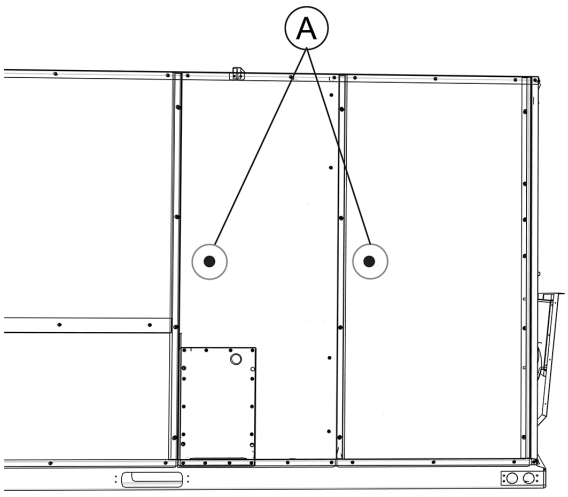
On VAV units verify that the VFD drive is set to maximum output, exhaust dampers are closed, and individual space damper boxes are full open. VFD units with bypass must not be in bypass mode (LINE position) unless all individual space dampers are full open.

Start the supply air blower motor. Adjust the resistances in both the supply and the return air duct systems to balance the air distribution throughout the conditioned space. The job specifications may require that this balancing be done by someone other than the equipment installer.

Checking air quantity

1. Remove the dot plugs from the supply and return air access panels on the back side of the unit. See Figure 78.

Figure 78: Dot plug location



Item	Description
A	Dot plug location

2. Insert at least 8 in. of 1/4 in. tubing into each of these holes for sufficient penetration into the air flow on both sides of the indoor coil.

Note: You must insert the tubes and hold them in a position perpendicular to the air flow so that velocity pressure does not affect the static pressure readings.

3. Use an inclined manometer to determine the pressure drop across the dry evaporator coil and filters. The moisture on an evaporator coil may vary greatly, measuring the pressure drop across a wet coil under field conditions could be inaccurate. To ensure that the coil is dry, deactivate the compressors while the test is being run.

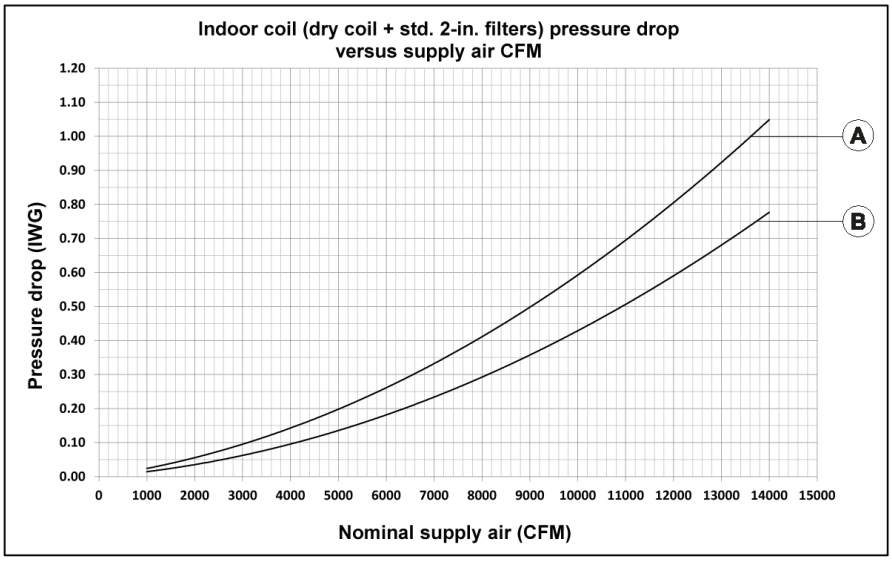
Note: De-energize the compressors before taking any test measurements to ensure that the indoor coil is dry.

4. Use the pressure drop across a dry coil, to determine the actual CFM through the unit from the curve in the following figure.

WARNING

Failure to properly adjust the total system air quantity can result in extensive blower damage.

Figure 79: Pressure drop



Item	Description
A	15 to 20 tons
B	25 to 27.5 tons

Supply air drive adjustment

The RPM of the supply air blower depends on the required CFM, the unit accessories or options, and the static resistances of both the supply and the return air duct systems. With this information, the RPM for the supply air blower and the motor pulley adjustment (turns open) can be determined from the blower performance data tables.

CAUTION

You must adjust the belt drive blower systems to the specific static and CFM requirements for the application. The belt drive blowers are not set at the factory for any specific static or CFM. You must adjust the blower speed and belt tension.Verify proper sheave alignment. Tighten the blower pulley and motor sheave set screws after these adjustments. Recheck the set screws after 10 to 12 hours of run time.

See the blower motor and drive data table.

Note the following:

- The supply air CFM must be within the limitations shown in the blower performance tables.
- You can adjust pulleys in half turn increments.
- Adjust the belt tension.
- Tighten the blower pulley and motor sheave set screws after any adjustments. Re-check the set screws after 10 to 12 hours run time.

Table 73: Additional static resistance

Model	CFM	Cooling only	Reheat coil	Economizer	Electric heat kW		
					25	50	75
AV15 AV18 AV20	4000	0.09	0.03	0.01	0.07	0.06	0.05
	5000	0.11	0.05	0.02	0.09	0.08	0.07
	6000	0.15	0.06	0.07	0.13	0.11	0.10
	7000	0.20	0.07	0.11	0.18	0.16	0.15
	8000	0.28	0.09	0.14	0.26	0.24	0.23
	9000	0.38	0.10	0.15	0.35	0.34	0.32
	10000	0.49	0.11	0.16	0.46	0.44	0.42
AV25 AV28	7000	0.20	0.04	0.11	0.18	0.16	0.15
	8000	0.28	0.06	0.13	0.26	0.24	0.23
	9000	0.38	0.07	0.16	0.35	0.34	0.32
	10000	0.49	0.08	0.19	0.46	0.44	0.42
	11000	0.60	0.10	0.23	0.56	0.53	0.51
	12000	0.70	0.11	0.28	0.65	0.62	0.59
	13000	0.76	0.13	0.34	0.69	0.65	0.61
	14000	0.80	0.14	0.43	0.73	0.69	0.65

Note:

- For cooling only models, add the cooling only value to the available static resistance in the respective blower performance tables.
- For models with electric heat, add the electric heat value for your heater size to the available static resistance in the respective blower performance tables.
- If the unit contains a reheat coil or economizer, deduct the corresponding value from the available external static pressure shown in the respective blower performance tables.
- The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct is less than 0.25 IWG, the unit delivers less CFM during full economizer operation.

Operation

The following sections describe the sequences of operation for the units.

Cooling sequence of operation

Compressor Operation

2 Stage Cooling

This section assumes Free Cooling is not available.

1. Compressors are controlled by the Y1 through Y2 thermostat inputs. If the Lead/Lag function is turned OFF, a Y1 input energizes the C1 output. Thermostat Input into Y2 energizes the C2 output respectively.
2. The FAN output for indoor fan operation energizes with any cooling output after the Fan On Delay for Cool expires.
3. CN-FAN output energizes when either C1 or C2 is energized
4. A 30 second interstage delay occurs when multiple stages are requested. When the thermostat cooling inputs are lost and the minimum runtime expires, the compressor outputs stage off.

   Note: A Y2 input without a Y1 input energizes C1 first and then C2 30 seconds later.

4 Stage Cooling

This section assumes Free Cooling is not available.

1. Compressors are controlled by the Y1 through Y4 thermostat inputs. Y1 input energizes the C1 output. A Y2 input energizes the C3 output. A Y3 input de-energizes the C3 output and energizes the C2 output. A Y4 input energizes the C3 output.

   ⓘ **Note:** For 15 to 20 ton models, the C1 output energizes the first stage on the 2 stage compressor and the C3 output energizes the second stage on the 2 stage compressor. For 25 to 27.5 ton models, the C1 output energizes the first of the tandem compressors and the C3 output energizes the second of the tandem compressors.

2. The FAN output for indoor fan operation energizes with any cooling output after the Fan On Delay for Cool expires.

3. Both the CF1 and CF2 outputs energize when any compressor stage is energized.

4. A 30-second interstage delay occurs when multiple stages are requested. Compressor minimum off times are enforced while staging up and down. When the thermostat cooling inputs are lost and the minimum runtime expires, the compressor outputs stage off.

5. Staging down sequence:

   - Y1, Y2, Y3, Y4 – C1, C2, C3
   - Y1, Y2, Y3 (Y4 off) – C1, C2 (C3 off)
   - Y1, Y2 (Y3 off) – C2 (C1 off)
   - Y1 (Y2 off) – C1 on (C2 off)
   - All thermostat signals off – all stages off

Continuous blower

When the room thermostat fan switch is set to ON, the supply air blower operates continuously.

Intermittent blower

With the room thermostat fan switch set to AUTO and the system switch set to either the AUTO or HEAT settings, the blower is energized whenever a cooling or heating operation is requested. The blower is energized after any specified delay associated with the operation.

When energized, the indoor blower has a minimum run time of 30 seconds. Additionally, the indoor blower has a delay of 10 seconds minimum off.

Optional VAV startup and control

⚠ CAUTION

If the unit is operated with the manual bypass switch in the LINE (BYPASS) position and there are VAV boxes present in the duct system, then boxes must be driven to the full-open position using a customer-supplied power source to prevent over-pressurizing and possible damage to the ductwork.

For units with VFD and VAV control, you must put the unit into the occupied mode to start operation. The default setting for all VAV units is unoccupied, therefore the installer must either keep the jumper wire between terminals R - OCC or use network communicationof a BAS control system to switch between the unoccupied and occupied modes.

When placed into the occupied mode, the speed of the indoor blower motor is controlled by duct static pressure. The duct static setpoint (default = 1.5 in.) is the pressure that the VFD drive maintains when operating the unit in VAV mode. If the duct static pressure reaches or exceeds the high-limit setpoint (default = 4.5 in.), then the supply fan motor is shutdown.

The supply air temperature (SAT) is controlled by staging compressors on and off to satisfy the operating cooling supply air temp setpoint. There are three setpoints that determine the resulting operating cooling supply air temp setpoint.

1. VAV cooling supply air temp upper setpoint (default 60°F)

2. VAV cooling supply air temp lower setpoint (default 55°F)

3. VAV supply air temp reset setpoint (default 72°F)

When the return air temperature (RAT) is above the VAV supply air temperature reset setpoint the SAT is maintained at +/- 5 degrees of the VAV cooling supply air temperature lower setpoint.

When the return air temperature (RAT) is below the VAV supply air temperature reset setpoint the SAT is maintained at +/- 5 degrees of the VAV cooling supply air temperature upper setpoint.

When the outdoor air condition is sufficient for free cooling, the economizer modulates to control the SAT to +/- 1 degrees of the operational setpoint.

Cooling operation errors

Each cooling system is monitored for operation outside of the intended parameters. Errors are handled as described below. All system errors override minimum run times for compressors.

ⓘ **Note:** The following components are needed to access the control points in the Smart Equipment™ control.

- Local LCD on the unit control board.

OR

- Mobile Access Portal (MAP) Gateway (Portable).
    - Source 1 P/N S1-JC-MAP1810-OP
    - MAP Gateway Quick Start Guide P/N 24-10737-16
    - MAP Gateway Instruction P/N 24-10737-8

High-pressure limit switch

During cooling operation, if a high-pressure limit switch opens, the UCB de-energizes the associated compressor, initiates the ASCD (anti-short cycle delay), and, if the other compressor is idle, stops the condenser fans. If the call for cooling is still present at the conclusion of the ASCD, the UCB re-energizes the halted compressor.

If a high-pressure switch opens three times within two hours of operation, the UCB locks out the associated compressor. If the other compressor is inactive, the condenser fans are deenergized.

Low-pressure limit switch

The low-pressure limit switch is not monitored during the initial 30 seconds of a cooling system's operation. For the following 30 seconds, the UCB monitors the low-pressure switch to ensure it closes. If the low-pressure switch fails to close after the 30-second monitoring phase, the UCB de-energizes the associated compressor, initiates the ASCD, and, if the other compressor is idle, stops the condenser fans. If the LPS is still open after the ASCD, the compressor is not be energized for 30 seconds. The second and third times that the UCB sees an open LPS counts towards the three occurrences that cause a UCB lock-out.

When the low-pressure switch is proven (closed during the 30- second monitor period described above), the UCB monitors the low-pressure limit switch for any openings. If the low-pressure switch opens for greater than 5 seconds, the UCB de-energizes the associated compressor, initiates the ASCD, and, if the other compressor is idle, stops the condenser fans.

If the call for cooling is still present at the conclusion of the ASCD, the UCB re-energizes the halted compressor.

If a low-pressure switch opens three times within one hour of operation, the UCB locks out the associated compressor. If the other compressor is inactive, the condenser fans are deenergized.

Evaporator low limit

The evaporator low limit sensor is located on the suction line at the evaporator coil.

During cooling operation, if the evaporator low limit sensor (EC1, 2) detects a temperature below 26°F (default), the UCB de-energizes the associated compressor, initiates the ASCD, and, if the other compressor is idle, stops the condenser fans. If the call for cooling is still present at the conclusion of the ASCD, the UCB re-energizes the halted compressor. If the UCB detects the evaporator low limit sensor (EC1, 2) falling below 26°F (default) three times within two hours of operation, the UCB locks out the associated compressor. If the other compressor is inactive, the condenser fans are de-energized.

Low ambient cooling

To determine when to operate in low ambient mode, the UCB has an outdoor air temperature sensor (OAT) with a low ambient setpoint at 45ºF (default). When the OAT sensor senses a temperature below the low ambient setpoint and the thermostat is calling for cooling, the UCB operates in the low ambient mode.

Low ambient mode operates the compressors in the following manner: 10 minutes on, 5 minutes off. The indoor blower is operated throughout the cycle. The 5-minute off period is necessary to defrost the indoor coil.

Low ambient mode always begins with compressor operation. Compressor minimum run time may extend the minutes of compressor operation. The off cycle begins immediately following the elapse of the minimum run time.

When operating in low ambient mode, an evaporator low limit sensor (EC1, 2) temperature below 26ºF, the UCB deenergizes the associated compressor. If the call for cooling is still present at the end of the ASCD and the evaporator temperature sensor (EC1, 2) temperature is above 26°F, the unit resumes operation.

Safety controls

The unit control board monitors the following inputs for each cooling system:

1. An evaporator low limit sensor (EC1, 2) to protect against low evaporator temperatures due to a low airflow or a low return air temperature, set at 26°F. The sensor is located on the suction line at the evaporator coil.

2. A high-pressure switch to protect against excessive discharge pressures due to a blocked condenser coil or a condenser motor failure. The switch opens at 650 ± 10 psig and resets 450 ± 15 psig.

3. A low-pressure switch to protect against loss of refrigerant charge. The switch opens at 50 ± 5 psig and resets at 71 ± 5 psig.

The above pressure switches are hard-soldered to the unit. The refrigeration systems are independently monitored and controlled. On any fault, only the associated system is affected by any safety/preventive action. The other refrigerant system continues in operation unless it is affected by the fault as well.

The unit control board monitors the temperature limit switch of electric heat units and the temperature limit switch and the gas valve of gas furnace units.

Compressor protection

In addition to the external pressure switches, the compressors also have inherent (internal) protection. If there is an abnormal temperature rise in a compressor, the protector opens to shut down the compressor. The UCB incorporates features to minimize compressor wear and damage. An anti-short cycle delay (ASCD) is used to prevent operation of a compressor too soon after its previous run. Additionally, a minimum run time is imposed any time a compressor is energized.

The ASCD is initiated on unit start-up and on any compressor reset or lock-out.

Reset

Remove the call for cooling by raising thermostat setting higher than the conditioned space temperature.

Reheat sequence of operation

Dehumidification (Hot Gas Reheat)

The rooftop unit can have an optional hot gas reheat (HGRH) system factory installed. HGRH is utilized to help dehumidify the interior space.

- This is accomplished by controlling the compressors to the evaporator leaving air setpoint, which is typically set lower than the active DAT cooling setpoint
- The colder air allows for more moisture removal from the discharge air
- The discharge air then passes through the HGRH coil, which adds heat to the discharge air
- Reheating the air allows dehumidification of the space while preventing over-cooling, which keeps building personnel comfortable

The HGRH system is always on refrigeration circuit #2. The HGRH system uses a 3-way modulating valve controlled by a stepper motor.

The HGRH coil is located after the evaporator coil in the airstream.

There is a solenoid installed on the outlet of the HGRH coil. This HGRH bleed solenoid valve allows excess refrigerant and oil to bleed back into the suction line when HGRH operation is not needed.

Dehumidification Sequence

The unit controller continuously monitors a %RH value. This value can be either from the space or return air.

When the current humidity level rises above the dehumidification setpoint, the unit enables the HGRH system.

Setpoints for the dehumidification sequence can be found under the *Details* > *Humidity Control* > *Setup* menu.

There are two different operating sequences for HGRH.

Unit in Active Cooling Mode

When the unit is in an active cooling mode and there is a demand for dehumidification, the HGRH valve is controlled to the active DAT cooling setpoint.

The compressors are controlled to the active evaporator air temperature (EAT) setpoint.

Typically the active EAT setpoint is lower than the active DAT cooling setpoint. This allows for additional humidity to be removed while still providing sensible cooling.

Unit in Idle Mode

When the unit is not in an active cooling mode and there is a demand for dehumidification, the HGRH valve is controlled to an active DAT setpoint based on a reset schedule utilizing the effective cooling DAT setpoint and the current RAT. See Figure 80.

The compressors are controlled to the active EAT setpoint. This allows for humidity to be removed from the air while not over-cooling the space.

The unit controller uses the current humidity level as the basis for the active EAT setpoint.

- When the humidity level first increases above the active humidity setpoint, the active EAT setpoint is equal to the low cooling DAT setpoint
- When the humidity level continues to increase, the active EAT setpoint resets lower to allow for moisture removal

If at any time during an active dehumidification sequence the changeover sensor sees a demand for heat,HGRH operation is terminated regardless of the current humidity level.

Figure 80: Active DAT Setpoint when Unit Is In Idle Mode

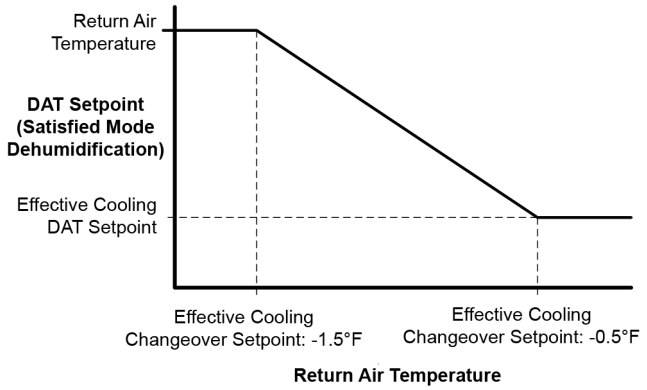


Figure 81: Active EAT Setpoint Based on Humidity Level

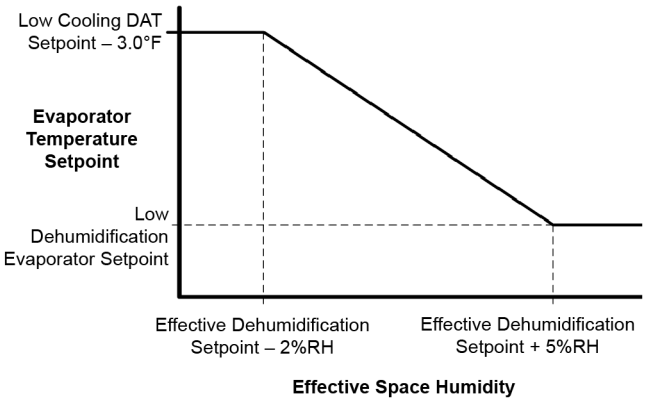
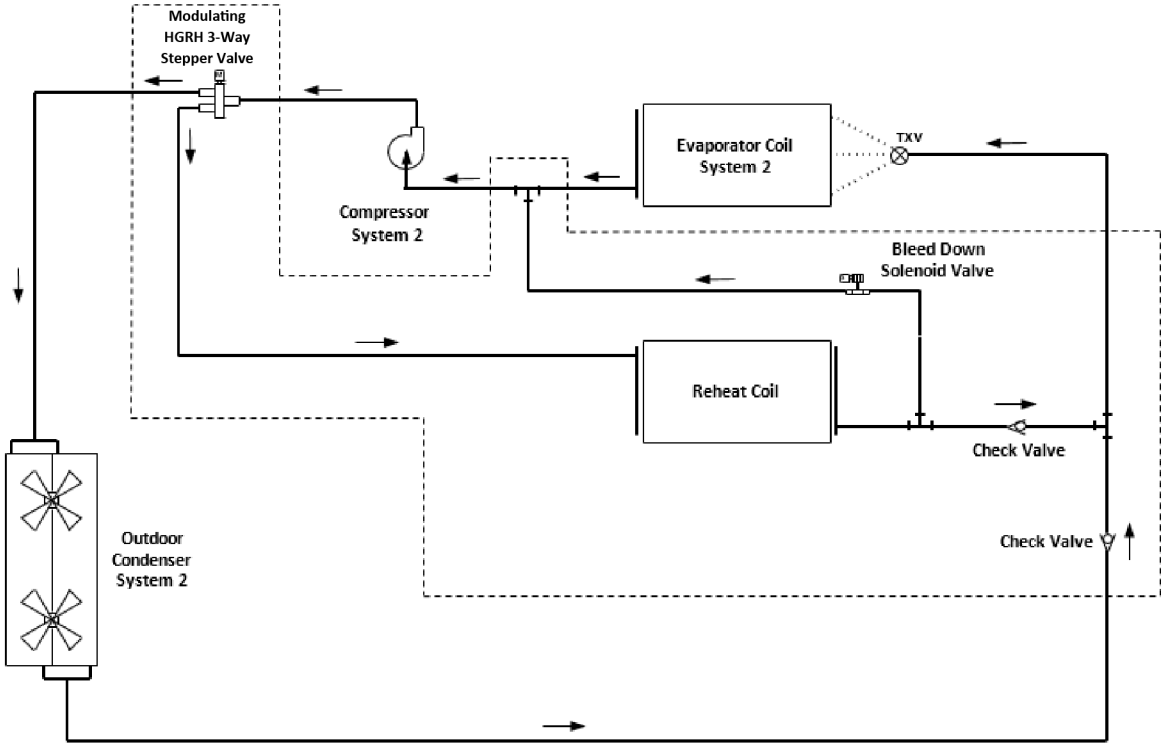


Figure 82: HGRH Schematic



Modulating HGRH 3-way Stepper Valve

The refrigerant flow is modulated using a 3-way modulating valve. This valve is closed when there is no demand for HGRH. Once a demand for HGRH exists, the 3-way valve opens. In HGRH mode, the 3-way valve has a minimum position of 20% and a maximum position of 75% for 15T models and 80% for 17.5, 20, 25 and 27.5T models. For 15, 25 and 27.5T models, the valve is allowed to open up to 100% if not meeting the requirement after running at maximum position for 1 min .

Condenser Fan Control

In HGRH mode, system 2 condenser fan(s) are off when OAT drops to 75.0°F or below for 15, 17.5 and 20T models and when it drops to 55.0°F or below for 25 and 27.5T models.

Hot Gas Reheat Valve

The HGRH bleed valve is a normally open valve that is piped between the HGRH coil and the compressor system 2 suction line. The HGRH bleed valve prevents refrigerant and oil from being trapped in the HGRH coils when HGRH is inactive.

The HGRH valve is open when there is no demand for HGRH. Once a demand for HGRH exists, the HGRH bleed valve closes.

After the demand for HGRH is satisfied, the unit controller starts a 5 minute timer. When the 5 minute timer expires, the HGRH bleed valve opens.

Electric heating sequence of operations

The following sequence describes the operation of the electric heat section.

⚠ CAUTION

For units with VFD and electric heat, the speed of the indoor blower motor continues to be controlled by duct static pressure via the VAV control board.If there are VAV boxes present in the duct system, the boxes must be driven to the full-open position using a customer-supplied power source to ensure adequate airflow across the heating elements.

Single-stage heating

This applies only to the 25 kW heater, all other heaters must use a two-stage thermostat.

- When there is a call for heat by the thermostat, the heater contactor (HC1) and the blower motor are energized. For 208/230 V units the HC1 and HC2 contactors are energized.
- The thermostat cycles the electric heat to satisfy the heating requirements of the conditioned space.

Two-stage heating

This applies to all heaters except the 25 kW heater.

- When there is a call for heat by the thermostat, for 460V and 575V units the heater contactor (HC1) and the blower motor are energized. For 208/230 V units the HC1 and HC2 contactors and the blower motor are energized.

  If the second stage of heat is required, for 460V and 575V units the HC2 contactor and the blower motor are energized. For 208/230V units with a 50 kW heater the HC3 contactor and blower motor are energized. For 208/230V units with a 75 kW heather the HC3 and HC4 contactors and the blower motor are energized.
- The thermostat cycles the electric heat to satisfy the heating requirements of the conditioned space.

ⓘ **Note:** All electric heaters are provided with single use backup protection limits. These de-energize the heaters if the primary limit fails to open or the contactors fail to open in a failure mode. When the backup limit trips it will need to be replaced for the heater to be operational again.

Electric heat operation errors

Temperature limit

If the UCB senses zero volts from the high temperature limit, the indoor blower motor is immediately energized.

The limit is monitored at all times when the unit is in an operational mode where the electric heaters may be turned on.

If the temperature limit opens three times within one hour, it locks on the indoor blower.

Electric heat safety controls

The UCB monitors the temperature limit switch of electric heat units.

The control circuit includes the following safety controls:

Temperature limit switch

Temperature limit switch (LS1A, LS1B)

This control is located inside the heater compartment and is set to open at 140° F. It resets automatically. The limit switch operates when a high temperature condition, caused by inadequate supply air flow occurs, this shuts down the heater and energizing the blower.

Temperature limit switch (LS2A, LS2B)

This control is located inside the heater compartment and is set to open at at 180° F. It is a single use limit. These limit switches de-energize the heaters if the primary limit fails to open or the contactors fail to open in a failure mode. When the backup limit trips it will need to be replaced for the heater to be operational again.

Reset

Removes the call for heating by lowering the thermostat setting lower than the conditioned space temperature.

Gas heat sequence of operation

1. Heating stages are controlled by the W1 through W2 thermostat inputs. A W1 or W2 input energizes a H1 or H1/H2 output.
2. When the pre-ignition process is complete the ignition module energizes the gas valve and provides a 24 V input to the MV terminal on the UCB.
3. The FAN ON HEAT DELAY timer starts as soon as 24 V is present on MV terminal. When the timer expires the FAN output for the indoor fan operation energizes. If 24 V is not received on the MV terminal within 6 minutes, an alarm appears and the fan output energizes immediately and remains On until the alarm clears.

4. When the thermostat heat inputs are lost and the 120 second Minimum Heat Run Timers have expired, heating outputs stage off. The FAN OFF HEAT DELAY timer starts when 24 V is removed from the MV terminal. When the timer expires, the FAN output for the indoor fan operation de-energizes.

   ⓘ **Note:** If 24 V is lost on the MV terminal during the same heat cycle, an alarm appears and the fan output energizes and remains On until 24 V is present again on the MV terminal.

   ⓘ **Note:** If 24 V is present on the MV terminal without a call for heat, an alarm appears and the fan output energizes. If this condition occurs for 6 minutes an alarm appears, and remains, until the alarm condition is cleared.

5. At any time, if 24 V is lost on the LIMIT terminal, the FAN output for indoor fan operation is energized. If 24 V is lost on the LIMIT input 3 times in 1 hour, an alarm appears and the FAN output is energized. The heating H1 and H2 outputs are de-energized until the alarm is cleared.

Additional heating operation for modulating furnaces

Normal Heating

The Modulating Furnace Control (MFC) is circuited between the UCB and Ignition Control Board (ICB). The MFC determines the appropriate heat level demand to send to the ICB. When the MFC receives a W1 input (H1 output from the UCB), the MFC will adjust the heat level demand to maintain a supply air temperature of the selected value on the W1 SAT jumper. When the MFC receives a W1/W2 input (H1/H2 output from the UCB), the MFC will maintain the added value of "W1 SAT" plus "W2 SAT ADDED VALUE" pin selections. The MFC sends heat level demands to the ICB through a serial communication signal.

Air Tempering Mode

In air tempering mode, the MFC will try to maintain neutral supply air temperature to the conditioned air space when it senses cold incoming mixed air. This condition is typically created when there is a fresh outside air demand in cold ambient conditions.

If the Air Tempering pin jumper is set to any value other than "OFF", the MFC will initiate furnace operation if the Mixed Air Temperature (MAT) sensor input reading is 3°F below the selected value. The MFC will then adjust the heat demand level to control the Supply Air Temperature (SAT) to the selected value.

To operate Air Tempering, Air Proving Switch (APS) input must be on, W1/W2 heat call from the UCB must be off, and all compressor inputs must have been off for 10 minutes. If the MFC has been in tempering mode (heating) for 10 minutes and the SAT reading is 5°F or more above the Air Tempering selected value, heating is ended. If all conditions for Air Tempering are still met, it will be re-initiated after a 10 minute minimum off delay.

Two Stage Gas Heat Ignition Control Board Function

Ignition Control Board on Standby

The Ignition Control Board (ICB) has all outputs deenergized and monitors the thermostat and flame sense. The ICB resets ignition trial and flame loss counters. The ICB begins a call for heat when W1 is energized at the Unit Control Board (UCB). The ICB ignores W2 until ignition has been established.

Pressure switch proving

The ICB energizes the induced draft motor and waits for the low pressure switch to close. When the low pressure switch closes, the control begins Pre-purge period. If the call for heat is lost, the control de-energizes the inducer without post-purge and returns to standby.

If the low pressure switch does not close within 10 seconds of inducer energizing, the control flashes "2" on the LED. If the pressure switch does not close within 5 minutes of inducer energizing, the control shuts off the inducer for 30 seconds, then energizes the inducer for another 5 minute try to close the pressure switch. This cycle continues indefinitely until either the pressure switch is proved closed, or the call for heat ends.

Pre-purge

The ICB monitors the low pressure switch and ensures it remains closed during pre-purge. If the pressure switch opens, the control goes back to pressure switch proving mode. The control waits for a 15 second pre-purge period, then begins the ignition trial.

Ignition trial period

The ICB energizes the main gas valve, second stage gas valve and spark outputs for a 10 second Ignition trial. The control de-energizes the spark when flame is sensed and enters a flame stabilization period.

If flame is not established within the ignition trial period, the control de-energizes the spark and gas valve and checks for maximum number of ignition trials. The ICB has a maximum number of 3 ignition trials. If the control has attempted the maximum number of ignition trials within the same call for heat without flame, the control will lockout flashing "4" on the LED. If the control has attempted less than maximum ignition trials, it begins an inter-purge period before attempting another ignition trial.

If the call for heat is lost during an ignition trial period, the control immediately de-energizes spark and gas. The control runs the inducer motor through a post purge period before de-energizing.

If the pressure switch is lost during an ignition trial period, the control immediately de-energizes spark and gas. The control begins pressure switch proving before an inter-purge and re-ignition attempt.

Flame stabilization period

If a flame is detected during the Ignition Trial Period, the ICB then enters the flame stabilization period. If a flame is not detected in 2 seconds, the main valve is de-energized and a retry operation begins. The flame stabilization period lasts 10 seconds. flame detection must be lost for 2 seconds during flame stabilization for the main valve to be de-energized. When the flame stabilization period has ended, a loss of flame detection for 3/4 seconds will result in the main valve being de-energized.

If flame is lost during the flame stabilization period, the control counts it as a flame loss and retries ignition or locks out as described in Low heat section.

Main Burner operation

High heat warm-up

Two stage models run high heat for the first 30 seconds following flame stabilization period regardless of W2 demand. If W2 is not energized at the end of this 30 second period the control de-energizes the high gas output. If W2 is energized the control remains on high heat.

Low heat

The ICB keeps the main gas valve and induced draft motor energized while continuously monitoring the call for heat, low pressure switch, and flame status.

If the call for heat (W1) is lost, the control de-energizes the gas valve and begins post purge.

If low pressure switch opens, the control de-energizes the gas valve and begins pressure switch proving mode.

If flame is lost, the control de-energizes the gas valve within 2.0 second and counts the flame loss. If flame has been lost more than 5 times within the same call for heat, the control locks out flashing "5" on the LED. If flame has been lost less than 5 times, the control attempts re-ignition after a 30 second inter-purge period.

High heat

The ICB recognizes a call for 2nd stage heat when W2 is energized. The control energizes the high gas output.

If the call for 2nd stage heat goes away and the 1st stage call remains, the control de-energizes the high gas valve and returns to low heat operation.

Response to loss of W1, low pressure switch, and flame are identical to low heat operation.

Post Purge

The ICB runs the induced draft motor for a 5 second post-purge period, then de-energizes the inducer. If a call for heat occurs during post-purge, the control finishes the post-purge, drops inducer out to re-prove open pressure switch before continuing with the heat cycle.

Lockout

While in lockout, the ICB keeps the main gas valve and induced draft motor de-energized.

Lockouts due to failed ignition or flame losses may be reset by removing the call for heat (W1) for more than 1 second, but less than 20 seconds, or by removing power from the control for over 0.25 seconds. The control will automatically reset lockout after 60 minutes.

Lockouts due to detected internal control faults will reset after 60 minutes or power interruption.

High temperature limit switch

If the high temperature limit switch is open the control will run the inducer, de-energize the gas valve, and flash "6" on the LED. When the high temperature switch closes, the control will restart the ignition sequence beginning with pre-purge.

If the high temperature limit is open for more than 6 minutes continuously during a call for heat, it is assumed that the main blower has failed and the control shall enter a hard lockout and flash a "9"

on the LED. During the hard lockout, the control will continue to run the inducer as long as the limit switch is open. If the limit switch recloses in this hard lockout condition, the inducer will run a post purge and then shutoff. The control shall remain locked out until power is removed and shall not reset automatically.

Roll-out switch

If the roll-out switch opens for more than 0.25 seconds, the ICB will run the inducer for a post-purge period, immediately de-energize the gas valve, and flash "7" on the LED.

If the roll-out switch closes, the control shall remain locked out until power removed or "W" is removed. Rollout switch lockout shall not reset automatically.

Power interruptions

Power interruptions less than 0.80 seconds shall not cause the ICB to interrupt the heat sequence. Power interruptions over 0.250 seconds will cause the control reset lockout and ignition trial counters. Power interruptions of any duration shall not cause lockout or any operation requiring manual intervention.

Flame present with Gas off

If flame is sensed for longer than 2.0 seconds during a period when the gas valve should be closed, the ICB will enter lockout. The control will turn on the inducer blower while the flame is present.

Welded gas valve relay response

If either or both Main and 2nd Stage Gas valve outputs are sensed to be off for more than 1 second when commanded to be **ON** the ICB shuts off all outputs and enters lockout.

If the Main valve output is sensed to be energized for more than 1 second when commanded to be off, the control de-energizes the induced draft motor (if flame is not present) to attempt to open the pressure switch to de-energize the gas valve. If the Main gas valve is still sensed as energized after the inducer has been off for 15 seconds, the control re-energizes the inducer to attempt to vent the unburned gas. In either case, the control locks out.

Modulating Gas Heat Ignition Control Board Function

Ignition Control Board on Standby

The Ignition Control Board (ICB) has all outputs de-energized and monitors the communications port and flame sense. The ICB resets ignition trial and flame loss counters. The ICB begins a call for heat when a communicated demand level is requested from the Modulating Furnace Control (MFC) on the RS485 port.

Call for heat

The ICB checks to see if the pressure switch is open and the RPM sensor input indicates that the inducer motor is not currently active. If the pressure switch is closed or the RPM sensor detects that the inducer is active, the ICB flashes "3" on the LED and waits indefinitely for it to become inactive. When the inducer is sensed as inactive, the ICB begins air flow proving period. If the call for heat is lost, the ICB goes back to Standby.

Air flow proving

The ICB energizes the induced draft motor and waits for the low pressure switch to close and for the RPM sensor to provide a feedback signal of at least a level of 500 RPM. When the low pressure switch closes and the RPM sensor indicates at least 500 RPM, the control begins Pre-purge period. If the call for heat is lost, the control de-energizes the inducer without post-purge and returns to standby. If the low pressure switch does not close and the RPM sensor does not reach 500 RPM within 10 seconds of inducer energizing, the control flashes "2" on the LED. If the pressure switch does not close and the RPM sensor does not indicate at least 500 RPM within 5 minutes of inducer energizing, the control shuts off the inducer for 30 seconds, then energizes the inducer for another 5 minute try to close the pressure switch and reach 500 RPM. This cycle continues indefinitely until either the airflow is proven, or the call for heat ends.

Pre-purge

The ICB monitors the low pressure switch/RPM sensor and ensures air flow remains present during pre-purge. If the pressure switch opens or the RPM sensor drops under 500 RPM, the control goes back to pressure switch proving mode. The control waits for a 30 second pre-purge period, then begins the ignition trial.

Ignition trial period

The ICB energizes the main gas valve and spark outputs for a 10 second Ignition trial. The control de-energizes the spark when flame is sensed and enters a flame stabilization period. If flame is not established within the ignition trial period, the control de-energizes the spark and gas valve and checks for maximum number of ignition trials. The ICB has a maximum number of 3 ignition trials. If the control has attempted the maximum number of ignition trials within the same call for

heat without flame, the control will lockout flashing "4" on the LED. If the control has attempted less than maximum ignition trials, it begins an inter-purge period before attempting another ignition trial. If the call for heat is lost during an ignition trial period, the control immediately de-energizes spark and gas. The control runs the inducer motor through a post purge period before de-energizing. If the pressure switch is lost during an ignition trial period, the control immediately de-energizes spark and gas. The control begins pressure switch proving before an inter-purge and re-ignition attempt. If the RPM sensor indicates loss of air flow during an ignition trial period, the control will de-energize spark and gas after the 10 second ignition period. The control begins air flow proving before an inter-purge and re-ignition attempt.

Flame stabilization period

If a flame is detected during the Ignition Trial Period, the ICB then enters the flame stabilization period. If a flame is not detected in 3 seconds (+/-1 second), the main valve is de-energized and a retry operation begins. The flame stabilization period lasts 10 seconds. Flame detection must be lost for 3 seconds (+/-1 second) during flame stabilization for the main valve to be de-energized. When the flame stabilization period has ended, a loss of flame detection within 1 to 2 seconds will result in the main valve being de-energized. If flame is lost during the flame stabilization period, the control counts it as a flame loss and retries ignition or locks out as described in Steady Heat section.

Main Burner operation

Main Burner operation

High heat warm-up

The ICB runs high heat for the first 30 seconds following Flame Stabilization period regardless of demand. If high heat is not requested at the end of this 30 second period the control reduces the high gas output and steps the inducer to a lower speed requested by the demand level. If high heat is requested the control remains on high heat.

Steady Heat

The ICB keeps the main gas valve and induced draft motor energized while continuously monitoring the call for heat, low pressure switch, RPM sensor, and flame status. If the call for heat demand is lost, the control de-energizes the gas valve and begins post purge. If low pressure switch opens or the inducer motor RPM sensor drops below 500 RPM, the control de-energizes the gas valve and begins pressure switch proving mode. If flame is lost, the control de-energizes the gas valve within 2.0 second and counts the flame loss. If flame has been lost more than 5 times within the same call for heat, the control locks out flashing "5" on the LED. If flame has been lost less than 5 times, the control attempts re-ignition after a 30 second inter-purge period.

Post Purge

The ICB runs the induced draft motor for a 5 second post-purge period, then de-energizes the inducer. If a call for heat occurs during post-purge, the control finishes the post-purge, drops inducer out to re-prove air flow before continuing with the heat cycle.

Lockout

While in lockout, the ICB keeps the main gas valve and induced draft motor de-energized. Lockouts due to failed ignition or flame losses may be reset by removing the call for heat (communicated demand) for more than 1 second, but less than 20 seconds, or by removing power from the control for over 0.25 seconds. The control will automatically reset lockout after 60 minutes. Lockouts due to detected internal control faults will reset after 60 minutes or power interruption.

High temperature limit switch

Any time the high temperature limit switch is open the ICB will run the inducer, de-energize the gas valve, and flash "6" on the LED. When the high temperature switch closes, the control will restart the ignition sequence beginning with pre-purge. If the high temperature limit is open for more than 6 minutes continuously during a call for heat, it is assumed that the main blower has failed and the control shall enter a hard lockout and flash a “9” on the LED. During the hard lockout, the control will continue to run the inducer as long as the limit switch is open. If the limit switch recloses in this hard lockout condition, the inducer will run a post purge and then shutoff. The control shall remain locked out until power is removed and shall not reset automatically.

Roll-out switch

If the roll-out switch opens for more than 0.25 seconds, the ICB will run the inducer for a post-purge period, immediately de-energize the gas valve, and flash "7" on the LED. If the roll-out switch closes, the control shall remain locked out until power removed or demand is removed. Roll-out switch lockout shall not reset automatically.

Power interruptions

Power interruptions less than 80mS shall not cause a change in operating mode. Power interruptions more than 100mS may cause the ICB to interrupt its current operational mode and re-start the

operational sequence. Power interruptions of any duration are not to cause lockout or any operation requiring manual intervention to recover.

Flame present with Gas off

If flame is sensed for longer than 2.0 seconds during a period when the gas valve should be closed, the ICB will enter lockout. The control will turn on the inducer blower while the flame is present.

Welded gas valve relay response.

If Main gas valve output is sensed to be off for more than 1 second when commanded to be on, the ICB shuts off all outputs and enters lockout. If the Main valve output is sensed to be energized for more than 1 second when commanded to be off, the control de-energizes the induced draft motor (if flame is not present) to attempt to open the pressure switch to de-energize the gas valve. If the Main gas valve is still sensed as energized after the inducer has been off for 10 seconds, the control re-energizes the inducer to attempt to vent the unburned gas. In either case, the control locks out.

Cooling start-up

The following sections describe the cooling start-up procedures.

Cooling pre-start checklist

When the installation is complete, perform the following checks:

1. Check the electrical supply voltage being supplied. Verify that it is the same as the voltage listed on the unit nameplate.
2. Set the room thermostat to the off position.
3. Turn on electrical power to the unit.
4. Set the room thermostat fan switch to on.
5. Check the indoor blower rotation.

   If the blower rotation is in the wrong direction, see Phasing section.

   a. Check the blower drive belt tension.
6. Check the unit supply air (CFM).
7. Measure the evaporator fan motor's amp draw.
8. Set the room thermostat fan switch to off.
9. Turn off electrical power to the unit.

Operating the unit

1. Turn on electrical power to the unit.
2. Set the room thermostat setting lower than the room temperature.

   First stage compressors energize after the built-in time delay of five minutes. Additional stages of cooling will be energized by the thermostat if needed.

Post-start checklist

1. Verify proper system pressures for both circuits.
2. Measure the temperature drop across the evaporator coil.
3. Measure the system amperage draw across all legs of 3 phase power wires.
4. Measure the condenser fan amperage draw.

Gas heat start-up

The following sections describe the gas heat start-up procedures.

Gas heat pre-start checklist

When the installation is complete, perform the following checks.

1. Check the type of gas supply. Verify that it is the same as the gas supply listed on the unit nameplate.
2. Verify that the combustion air intake and flue exhaust are free of any debris or obstruction.
3. Verify that the hood is installed over the flue exhaust discharge opening.
4. For modulating furnaces, set the System Selection bottom pin jumper to COMMISSION on the Modulating Furnace Control to properly check the input rate and manifold pressure.

Operating instructions

CAUTION

This furnace is equipped with an automatic re-ignition system. DO NOT attempt to manually light the burners.

Lighting the main burners

1. Turn off electrical power to unit.
2. Set the room thermostat to the lowest setting.
3. Turn the gas valve switch to the ON position.
4. Turn on electrical power to the unit.
5. Set the room thermostat to the required temperature.

   If the set temperature on the thermostat is above room temperature, the main burners will ignite.

Gas heat post-start checklist

After the entire control circuit has been energized and the heating section is operating, perform the following checks:

1. Check for gas leaks in the unit piping and the supply piping.

WARNING

FIRE OR EXPLOSION HAZARD

Failure to follow the safety warning exactly could result in serious injury, death, or property damage. Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.

2. Check for the correct manifold gas pressures, input rates, and air temperature rise. See Checking Gas Heat Input section.
3. Check the supply gas pressure. It must be within the limits shown on the rating nameplate.

   Note: You must check the supply pressure with all gas appliances in the building at full fire. The standby gas pressure must never exceed 13 in. or the operating pressure drop below the minimum as specified on the unit rating plate. If the gas pressure is outside these limits, contact the local gas utility or propane supplier for corrective action.

Table 74: Natural Gas Inputs and Pressures

Gas Model	Gas Input (MBH)		Manifold Pressure (in. w.c.)		Supply Pressure (in. w.c.)	
	Normal	Reduced	Normal	Reduced	Min	Max
(N,S)1	220	165	3.5	2.1	4.5	10.5
(N,S)3	400	300	3.5	2.1	4.8	10.5
T3	400	140	3.5	0.6	5.0	10.5

Note: Propane inputs and pressures are provided in the listed conversion kit instructions. Modulating furnaces, gas model T3, are NOT certified for use with propane and cannot be converted.

Shutting down the unit

1. Set the thermostat to the lowest temperature setting.
2. Turn off all electrical power to unit.
3. Open the gas heat access panel.
4. Turn the gas valve switch to the OFF position.
5. For modulating furnaces, when commissioning is complete return the System Selection bottom pin jumper to NORM OPERATION on the Modulating Furnace Control.

Checking Gas Heat Input

For two stage and modulating furnaces, input rate should be checked at full input and minimum input. The intended input for each furnace is shown in Physical data and on the unit rating plate. The table applies to units operating on 60 Hz power only.

Important

If this is a modulating furnace, the Modulating Furnace Control board must be in COMMISSION mode on the System Selection pin jumper when checking input rate. Otherwise, the furnace input will fluctuate automatically and not maintain a steady rate. In COMMISSION mode, a second stage thermostat call will run the furnace at full input and a first stage call will run at minimum input.

To determine the rate of gas flow at Second Stage (full input)

To determine the rate of gas flow at Second Stage (full input):

1. Turn off all other gas appliances connected to the gas meter.
2. Turn on the furnace and make sure the thermostat is calling for Second stage (100% input) heat.
3. Measure the time needed for one revolution of the hand on the lowest increment dial on the meter. A typical gas meter has a 1/2 or a 1 cubic foot test dial.
4. Using the number of seconds it takes for one revolution of the dial, calculate the cubic feet of gas consumed per hour. (See example below).
5. If necessary, adjust the high pressure regulator as discussed in the section “Manifold Gas Pressure Adjustment”. **Be sure not to over-fire the furnace on second stage.** If in doubt, it is better to leave the second stage of the furnace slightly under-fired. Repeat Steps 1-5.

To determine the rate of gas flow at First Stage (minimum input)

1. Turn off all other gas appliances connected to the gas meter.
2. Turn on the furnace and make sure the thermostat is calling for first stage (minimum input) heat.
3. Even when the thermostat is calling for first stage heat, the unit will light on second stage and will run on second stage for 1 minute. Allow this one-minute time period to expire and be certain the unit is running on first stage.
4. Measure the time needed for one revolution of the hand on the lowest increment dial on the meter. A typical gas meter has a 1/2 or a 1 cubic foot test dial.
5. Using the number of seconds it takes for one revolution of the dial, calculate the cubic feet of gas consumed per hour (See example below).
6. If necessary, adjust the low pressure regulator as discussed in the section "Manifold Gas Pressure Adjustment". **Be sure not to under-fire the furnace on first stage.** If in doubt, it is better to leave the first stage of the furnace slightly over-fired. Repeat Steps 1-6.

Table 75: Gas Rate Cubic Feet Per Hour

Seconds for One Rev.	Size of Test Dial	
	1/2 cu. ft.	1 cu. ft.
10	180	360
12	150	300
14	129	257
16	113	225
18	100	200
20	90	180
22	82	164
24	75	150
26	69	138
28	64	129
30	60	120
32	56	113
34	53	106
36	50	100
38	47	95
40	45	90
42	43	86
44	41	82
46	39	78
48	37	75
50	36	72
52	35	69
54	34	67
56	32	64
58	31	62
60	30	60

Note: To find the Btu input, multiply the number of cubic feet of gas consumed per hour by the Btu content of the gas in your particular locality (contact your gas company for this information as it varies widely from area to area).

EXAMPLE

By actual measurement, it takes 19 seconds for the hand on a 1 cubic foot dial to make a revolution with a 200,000 Btuh furnace running. To determine rotations per minute, divide 60 by 19 = 3.16. To calculate rotations per hour, multiply 3.16 • 60 = 189.6. Multiply 189.6 • 1 (0.5 if using a 1/2 cubic foot dial) = 189.6. Multiply 189.6 • (the Btu rating of the gas). For this example, assume the gas has a Btu rating of 1050 Btu/ft^3. The result of 199,000 Btuh is within 2% of the 200,000 Btuh rating of the furnace.

Manifold Gas Pressure Adjustment

Two Stage

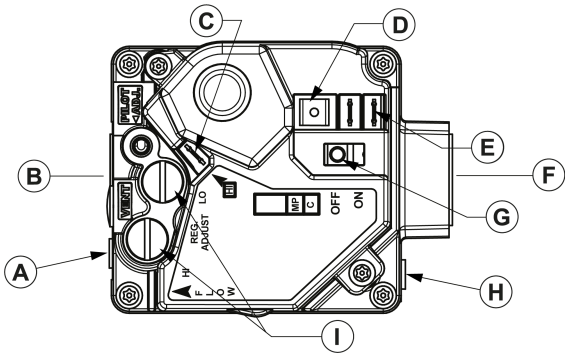
This gas furnace has two heat stages. Therefore, the gas valve has two adjustment screws located under two cover screws. The second stage adjustment screw is adjacent to the "HI" marking on the valve and the first stage adjustment screw is located adjacent to the "LO" marking on the valve.

Manifold pressure adjustment procedure.

Adjust second stage first, then adjust first stage pressure (refer to Physical data or the unit rating plate.

1. Turn off all power to the unit.
2. Using the outlet pressure port on the gas valve, connect a manometer to monitor the manifold pressure.
3. Remove cover screws covering HI and LO pressure adjustment screws.
4. Turn on power to the unit.
5. Set thermostat to call for second stage heat and start furnace.
6. If necessary, using a screwdriver, turn the second stage adjustment screw (adjacent to the “HI” marking on the valve) clockwise to increase manifold pressure or counterclockwise to decrease manifold pressure.
7. After the high manifold pressure has been checked, adjust the thermostat to call for first stage heat.
8. If necessary, using a screwdriver, turn the first stage adjustment screw (adjacent to the “LO” marking on the valve) clockwise to increase manifold pressure or counterclockwise to decrease manifold pressure.
9. Once pressure has been checked, replace the cover screws covering the HI and LO pressure adjustment screws.

Figure 83: Two Stage Gas Valve



Item	Description
A	Outlet pressure tap 1/8 in. - 27 NPT
B	Outlet
C	3/16 in. x .032 in. thk. male spade terminal - 2nd stage coil
D	External jumper
E	1/4 in. x .032 in. thk. male spade terminals (2) - common
F	Inlet
G	On/Off switch
H	Inlet pressure tap 1/8 in. - 27 NPT
I	Regulator cover screws (reg. adj. beneath these screws)

Modulating

This gas furnace is a fully modulating system. The modulating furnace requires manifold pressure adjustment at both the highest setting (100%, full input) and lowest setting (35%, minimum input) of the gas valve to ensure it will regulate properly across the full range. Both settings are adjusted by a single Rotary DIP Switch on the valve (see Figure 84).

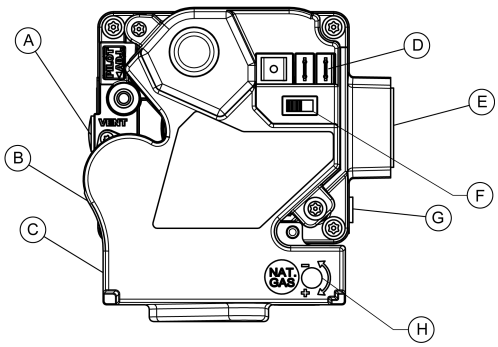
Important

The Modulating Furnace Control (MFC) board must be in COMMISSION mode on the System Selection pin jumper when checking input rate. Otherwise, the manifold pressure will fluctuate automatically and not maintain a steady rate. In COMMISSION mode, the MFC will maintain a 100% (full input) heat demand with a second stage thermostat call and a 35% (minimum input) heat demand with a first stage call.

1. Turn off all power to the unit.
2. Using the outlet pressure port on the gas valve, connect a manometer to monitor the manifold pressure.
3. Remove the plastic cap covering the pressure adjustment Rotary DIP Switch.
4. Turn on power to the unit.
5. Set thermostat to call for second stage heat and start furnace.
6. If necessary, using a small flat-head screwdriver, turn the Rotary DIP Switch clockwise to increase manifold pressure or counterclockwise to decrease manifold pressure.

   ⓘ **Note:** When adjusting the Rotary DIP Switch, the operator should wait ~1 second between steps to allow the software to register the change. If a change is not registered, the offset will return to its original setting.
7. After manifold pressure has been checked at its highest setting, adjust the thermostat to call for first stage heat to set the manifold pressure at its lowest setting.
8. Wait at least one minute for the furnace to step down to its lowest setting and adjust the manifold pressure, if necessary, using the same procedure in step 6.
9. Once pressure has been checked, replace the plastic cap covering the Rotary DIP Switch.

Figure 84: Gas valve



Item	Description
A	Outlet
B	Outlet pressure tap, 1/8 in. – 27 NPT
C	5-Pin plug (modulator)
D	1/4 in. X 0.032 in. thk male spade terminals (2) – main and common
E	Inlet
F	On/Off switch
G	Inlet pressure tap, 1/8 in. – 27 NPT
H	Regulator cap (regulator adjustment rotary dip switch beneath)

Adjustment Of Temperature Rise

The temperature rise (the difference of temperature between the mixed air entering the furnace and the heated air leaving the furnace) must lie within the range shown on the unit rating plate and the data in Physical data when the unit is operating as full input.

Air temperature rise should be determined when the furnace is firing at full input. Two stage furnaces require a second stage thermostat call. Modulating furnaces require a second stage thermostat call and the Modulating Furnace Control must be in COMMISSION mode to maintain full input.

After the temperature rise has been determined, the CFM can be calculated as follows:

$$\text{CFM} = \text{Btu Input} \cdot \frac{0.8}{(1.08 \cdot \Delta°\text{F})}$$

After about 20 minutes of operation, determine the furnace temperature rise. Take readings of both the return air and the heated air in the ducts (about 6 feet from the furnace) where they will not be affected by radiant heat. Increase the blower

CFM to decrease the temperature rise; decrease the blower CFM to increase the rise (See Supply air drive adjustment).

Note: Each gas heat exchanger size has a minimum allowable CFM. Below this CFM, the limit will open.

Burners/Orifices Inspection/ Servicing

Before checking or changing burners or orifices, CLOSE MAIN MANUAL SHUT-OFF VALVE AND SHUT OFF ALL POWER TO THE UNIT.

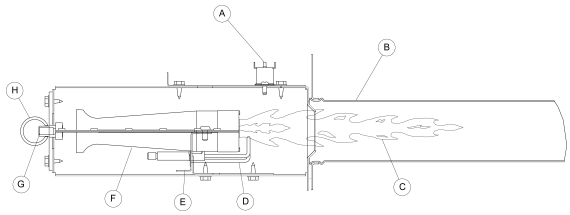
1. Open the union fitting just upstream of the unit gas valve and downstream from the main manual shut-off valve in the gas supply line.
2. Remove the screws holding each end of the manifold to the manifold supports.
3. Disconnect wiring to the gas valve. Remove the manifold & gas valve assembly. Orifices can now be inspected and/or replaced.

   To service burners, complete step 4.
4. Remove the heat shield on top of the manifold supports. Burners are now accessible for inspection and/or replacement.

Note: Reverse the above procedure to replace the assemblies.

Make sure that burners are level and seat at the rear of the gas orifice.

Figure 85: Typical Flame



Item	Description
A	Roll-out switch
B	Heat exchanger tube
C	Burner flame (blue only)
D	Ignitor
E	Burner bracket
F	Burner
G	Orifice
H	Manifold

Charging the unit

Table 76: AV15 charging table - system 1

Air flow indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	115	57	300	81	28
	85	120	60	350	90	27
	95	125	63	401	100	26
300 CFM/ton 80/67	75	125	62	304	83	24
	85	129	64	355	92	23
	95	133	66	405	101	22
300 CFM/ton 80/72	75	135	68	308	84	21
	85	138	69	359	93	20
	95	141	70	410	102	19
300 CFM/ton 75/62	75	114	56	300	80	24
	85	118	59	351	89	23
	95	122	61	402	99	22
400 CFM/ton 80/62	75	127	60	306	84	24
	85	130	64	356	93	23
	95	133	67	405	101	22
400 CFM/ton 80/67	75	131	66	307	84	21
	85	135	67	358	93	21
	95	138	69	408	101	20
400 CFM/ton 80/72	75	135	71	308	83	19
	85	139	71	360	93	19
	95	143	71	411	102	18
400 CFM/ton 75/62	75	123	59	305	82	20
	85	126	62	355	91	19
	95	129	65	406	99	19

Table 77: AV15 charging table - system 2

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	115	58	302	82	28
	85	120	60	353	91	27
	95	125	62	404	101	26
300 CFM/ton 80/67	75	125	65	306	84	24
	85	128	65	357	93	23
	95	132	66	409	102	22
300 CFM/ton 80/72	75	135	72	310	86	21
	85	137	71	362	95	20
	95	139	69	414	103	19
300 CFM/ton 75/62	75	115	58	301	82	24
	85	119	59	353	91	23
	95	122	61	404	100	22
400 CFM/ton 80/62	75	126	61	308	84	24
	85	129	63	358	93	23
	95	132	66	408	101	22
400 CFM/ton 80/67	75	130	68	309	83	21
	85	133	68	360	93	21
	95	137	68	412	102	20
400 CFM/ton 80/72	75	133	75	310	83	19
	85	137	73	363	93	19
	95	141	70	416	103	18
400 CFM/ton 75/62	75	122	60	306	83	20
	85	125	62	357	91	19
	95	128	64	408	100	19

Table 78: AV18 charging table - system 1

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	130	62	304	93	29
	85	133	61	355	101	27
	95	137	59	406	109	26
300 CFM/ton 80/67	75	137	65	311	92	25
	85	140	62	362	100	24
	95	142	60	414	108	23
300 CFM/ton 80/72	75	144	67	317	91	22
	85	146	64	369	99	21
	95	147	60	421	106	20
300 CFM/ton 75/62	75	128	59	304	92	25
	85	131	58	355	100	23
	95	133	56	406	108	22
400 CFM/ton 80/62	75	138	67	311	90	24
	85	141	66	362	99	23
	95	145	64	414	108	22
400 CFM/ton 80/67	75	142	68	316	90	22
	85	145	66	366	99	21
	95	148	64	416	108	20
400 CFM/ton 80/72	75	146	69	320	89	20
	85	149	66	370	98	19
	95	151	64	419	108	18
400 CFM/ton 75/62	75	134	63	310	90	21
	85	137	62	361	98	20
	95	140	61	412	106	19

Table 79: AV18 charging table - system 2

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	125	65	307	93	29
	85	130	65	356	104	27
	95	134	65	406	115	26
300 CFM/ton 80/67	75	131	67	315	91	25
	85	136	67	363	103	24
	95	140	66	412	114	23
300 CFM/ton 80/72	75	138	69	322	89	22
	85	142	68	370	102	21
	95	146	68	418	114	20
300 CFM/ton 75/62	75	123	62	307	93	25
	85	127	62	356	103	23
	95	132	62	404	114	22
400 CFM/ton 80/62	75	132	69	315	91	24
	85	137	69	364	102	23
	95	141	69	413	112	22
400 CFM/ton 80/67	75	136	70	320	90	22
	85	140	70	368	101	21
	95	144	69	416	113	20
400 CFM/ton 80/72	75	140	71	324	88	20
	85	144	70	372	101	19
	95	148	70	419	113	18
400 CFM/ton 75/62	75	129	65	314	91	21
	85	133	65	362	102	20
	95	137	65	411	112	19

Table 80: AV20 charging table - system 1

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	120	60	277	86	29
	85	121	58	329	93	28
	95	123	55	381	99	27
300 CFM/ton 80/67	75	127	64	282	84	26
	85	128	61	334	91	24
	95	130	59	386	99	23
300 CFM/ton 80/72	75	133	67	286	82	22
	85	135	65	338	90	21
	95	136	63	391	98	20
300 CFM/ton 75/62	75	118	58	277	85	25
	85	119	55	330	92	24
	95	120	53	383	98	23
400 CFM/ton 80/62	75	126	65	281	83	25
	85	129	63	331	91	24
	95	131	61	382	99	23
400 CFM/ton 80/67	75	131	67	284	82	22
	85	133	65	334	90	21
	95	135	63	385	98	20
400 CFM/ton 80/72	75	136	68	287	80	20
	85	137	66	337	89	19
	95	139	64	388	98	18
400 CFM/ton 75/62	75	123	61	280	82	21
	85	125	59	331	90	20
	95	127	57	383	98	19

Table 81: AV20 charging table - system 2

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	121	61	283	83	29
	85	125	59	331	93	28
	95	129	57	378	103	27
300 CFM/ton 80/67	75	128	64	290	82	26
	85	131	62	336	92	24
	95	135	59	382	102	23
300 CFM/ton 80/72	75	134	68	296	80	22
	85	138	65	340	91	21
	95	141	61	385	102	20
300 CFM/ton 75/62	75	119	58	283	83	25
	85	123	56	331	92	24
	95	126	55	379	101	23
400 CFM/ton 80/62	75	127	66	290	82	25
	85	132	64	339	92	24
	95	137	62	388	103	23
400 CFM/ton 80/67	75	132	68	294	81	22
	85	136	65	342	92	21
	95	141	63	390	103	20
400 CFM/ton 80/72	75	136	70	298	79	20
	85	140	67	345	91	19
	95	144	64	392	103	18
400 CFM/ton 75/62	75	125	62	289	82	21
	85	129	60	338	92	20
	95	133	59	388	102	19

Table 82: AV25 charging table - system 1

Air flow Indoor DB/WB	Outdoor dry bulb °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	126	52	292	92	29
	85	129	53	343	99	27
	95	132	53	394	106	26
300 CFM/ton 80/67	75	134	55	295	94	25
	85	136	56	346	100	24
	95	139	57	397	107	23
300 CFM/ton 80/72	75	142	58	298	96	21
	85	144	59	350	102	20
	95	146	60	401	108	19
300 CFM/ton 75/62	75	124	51	292	91	24
	85	127	51	343	98	23
	95	129	52	394	104	22
400 CFM/ton 80/62	75	135	58	295	93	24
	85	138	58	346	100	23
	95	141	57	396	108	22
400 CFM/ton 80/67	75	140	59	296	94	22
	85	142	59	347	101	21
	95	145	59	398	109	20
400 CFM/ton 80/72	75	145	59	298	96	19
	85	147	60	349	103	19
	95	148	60	400	109	18
400 CFM/ton 75/62	75	131	55	295	91	20
	85	134	55	345	99	20
	95	136	55	396	106	19

Table 83: AV25 charging table - system 2

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	125	54	294	89	29
	85	128	54	344	98	27
	95	131	54	394	107	26
300 CFM/ton 80/67	75	132	56	298	91	25
	85	134	56	348	99	24
	95	137	56	399	107	23
300 CFM/ton 80/72	75	139	58	303	92	21
	85	141	58	353	99	20
	95	143	58	403	107	19
300 CFM/ton 75/62	75	123	52	294	89	24
	85	125	52	344	97	23
	95	128	52	394	105	22
400 CFM/ton 80/62	75	133	58	299	89	24
	85	136	58	349	98	23
	95	139	57	399	107	22
400 CFM/ton 80/67	75	137	59	301	90	22
	85	140	58	351	98	21
	95	142	58	401	107	20
400 CFM/ton 80/72	75	141	59	304	91	19
	85	143	59	354	99	19
	95	145	59	403	107	18
400 CFM/ton 75/62	75	129	55	298	89	20
	85	132	55	348	97	20
	95	134	55	398	105	19

Table 84: AV28 charging table - system 1

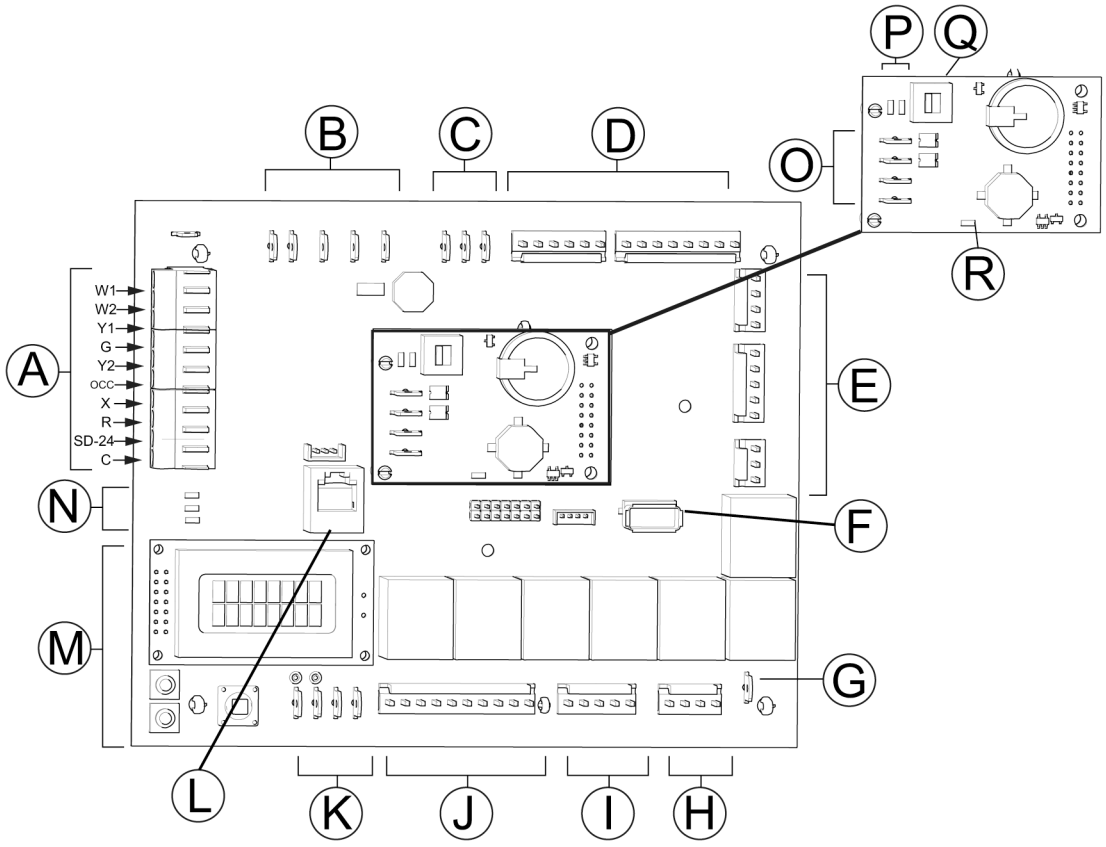
Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	120	53	284	79	29
	85	122	54	337	88	28
	95	125	54	390	97	27
300 CFM/ton 80/67	75	127	58	288	78	25
	85	130	58	342	87	24
	95	133	58	396	97	23
300 CFM/ton 80/72	75	135	62	291	77	21
	85	138	62	347	87	20
	95	140	63	403	96	20
300 CFM/ton 75/62	75	118	52	286	77	25
	85	120	53	339	87	24
	95	123	53	393	96	22
400 CFM/ton 80/62	75	128	57	286	80	25
	85	131	58	339	89	24
	95	134	58	392	98	22
400 CFM/ton 80/67	75	134	60	289	80	22
	85	136	60	342	89	21
	95	138	60	395	98	20
400 CFM/ton 80/72	75	139	63	291	79	19
	85	141	63	345	88	18
	95	142	62	398	97	18
400 CFM/ton 75/62	75	125	55	287	79	21
	85	127	55	341	88	20
	95	130	56	394	97	19

Table 85: AV28 charging table - system 2

Air flow Indoor DB/WB	Outdoor DB °F	Suction pressure psig	Suction temp °F	Liquid pressure psig	Liquid temp °F	Delta T indoor DB °F
300 CFM/ton 80/62	75	121	56	280	81	29
	85	124	56	331	90	28
	95	127	56	382	99	27
300 CFM/ton 80/67	75	128	60	286	80	25
	85	131	60	337	89	24
	95	133	60	389	98	23
300 CFM/ton 80/72	75	136	64	292	79	21
	85	137	64	344	88	20
	95	139	64	395	97	20
300 CFM/ton 75/62	75	119	55	281	79	25
	85	121	55	333	89	24
	95	124	55	384	98	22
400 CFM/ton 80/62	75	128	60	283	82	25
	85	131	59	334	91	24
	95	134	59	384	100	22
400 CFM/ton 80/67	75	133	62	288	81	22
	85	136	62	337	90	21
	95	138	61	387	99	20
400 CFM/ton 80/72	75	138	64	292	80	19
	85	140	64	341	89	18
	95	141	63	390	97	18
400 CFM/ton 75/62	75	125	57	284	80	21
	85	127	57	335	89	20
	95	130	57	386	98	19

Smart Equipment™ unit control board

Figure 86: Unit control board



The following tables describe the details of the UCB, see the previous figure for the connection locations.

Table 86: Smart Equipment™ UCB - thermostat connection strip

Location	Label	Description	Function and comments
A	W1	1st stage heating request, 24 VAC input switched from R	Not effective for cooling-only units
	W2	2nd stage heating request, 24 VAC input switched from R	Not effective for cooling-only units or units with single-stage heat sections
	Y1	1st stage cooling request, 24 VAC input switched from R	
	Y2	2nd stage cooling request, 24 VAC input switched from R	Visible in the display menu when the #ClgStgs parameter is set for 2 or more, also effective for economizer free cooling supply air temperature reset when the #ClgStgs parameter is set for 1 or more
	G	Continuous indoor blower request, 24 VAC input switched from R	
	OCC	Occupancy request, 24 VAC input switched from R	Must have the OccMode parameter set for External to be effective
	X	Hard lockout indicator, 24 volt output to a light thermostat LED	
	R	24 VAC hot for thermostat switching and power	If field-added external accessories for unit shutdown are used, 24 VAC hot return from smoke detector, condensate overflow and/or user shutdown relay switching in series
	SD-24	If field-added external accessories for unit shutdown are used, 24 VAC hot out for smoke detector, condensate overflow and/or user shutdown relay switching in series	Unit wiring harness jumper plug for factory shutdown accessories must be removed if the switching of field-added external accessories for unit shutdown are wired between thermostat connection strip SD-24 and R
	C	24 VAC common for thermostat power	

Table 87: Smart Equipment™ UCB - limit, 24 VAC power, and shutdown connections

Location	Label	Description	Function and comments
B	LIMIT	Monitored 24 VAC input through heat section limit switch(es)	If voltage is absent, indicating the heat section is over-temperature, the UCB will bring on the indoor blower
	C	24 VAC, 75 VA transformer Common referenced to cabinet ground	Connects through circuit traces to thermostat connection strip C and indoor blower VFD pin C
	24V	24 VAC, 75 VA transformer hot	Powers the UCB microprocessor, connects through circuit trace to the SD 24 terminal
	SD 24	24 VAC hot out for factory accessory smoke detector, condensate overflow and/or user shutdown relay switching in series	Connects through circuit trace to thermostat connection strip SD-24. A wiring harness jumper plug connecting SD 24 to SD R is in place if factory accessories for unit shutdown are not used - this jumper plug must be removed if the switching of field-added external accessories for unit shutdown are wired between thermostat connection strip SD-24 and R
	SD R	24 VAC hot return from factory accessory smoke detector, condensate overflow and user shutdown relay switching in series	Connects through circuit trace to the R terminal on the upper left of the board
	R	24 VAC hot for switched inputs to the UCB	Connects through circuit trace to the thermostat connection strip R terminal, right FAN OVR pin, right HPS1 pin, right HPS2 pin, lower DFS pin and lower APS pin

Table 88: Smart Equipment™ UCB - space temperature sensor connections

Location	Label	Description	Function and comments
C	ST	Space Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Positive of VDC circuit (3.625 VDC reading to COM with open circuit), effective if "Thermostat-only Control" parameter is set OFF, space sensor override momentary shorts ST to COM to initiate/terminate temporary occupancy
	COM	Common for ST and SSO inputs	Negative of VDC circuit for ST and SSO inputs
	SSO	Space Sensor Offset input from 0 to 20KΩ potentiometer	Positive of VDC circuit (3.625 VDC reading to COM with open circuit), 10KΩ/2.5 VDC is 0°F offset, 0Ω/0 VDC is maximum above offset and 20KΩ/3.4 VDC is maximum below offset from active space temperature setpoint

Table 89: Smart Equipment™ UCB - temperature sensor connections

Location	Label	Description	Function and comments
D	SAT+	Supply Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading SAT+ to SAT– with open circuit. Used in heat/cool staging cutouts, free cooling operation, demand ventilation operation, comfort ventilation operation, economizer loading operation, VAV cooling operation, hydronic heat operation.
	RAT+	Return Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading RAT+ to RAT– with open circuit. Used in return air enthalpy calculation. Substitutes for space temperature if no other space temperature input is present.
	OAT+	Outside Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation but may be a communicated value; 3.625 VDC reading OAT+ to OAT– with open circuit. Used in heat/cool cutouts, low ambient cooling determination, dry bulb free cooling changeover, outside air enthalpy calculation, economizer loading operation, heat pump demand defrost calculation.
	CC1+	#1 refrigerant circuit Condenser Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for heat pump units, not required for A/C units; 3.625 VDC reading CC1+ to CC1– with open circuit. Used in heat pump demand defrost calculation.
	EC1+	#1 refrigerant circuit Evaporator Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading EC1+ to EC1– with open circuit. Used in suction line temperature safety.
	CC2+	#2 refrigerant circuit Condenser Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for 2-compressor heat pump units, not required for 2-compressor A/C units, not active for 1-compressor units; 3.625 VDC reading CC2+ to CC2– with open circuit. Used in heat pump demand defrost calculation.
	EC2+	#2 refrigerant circuit Evaporator Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation of 2-compressor units, not active for 1-compressor units; 3.625 VDC reading EC2+ to EC2– with open circuit. Used in suction line temperature safety.

Table 90: Smart Equipment™ UCB - pinned connections

Location	Label	Description	Function and comments
E	RAH+	Return Air Humidity input from 0-10 VDC @ 0-100% RH sensor	Input required for reheat units, optional in all other units, may be a communicated value. Used in return air enthalpy calculation, temperature/humidity setpoint reset, reheat operation.
	DCT PRS+	Supply Duct Pressure input from 0-5 VDC @ 0-5" w.c. sensor	Input required for variable air volume units. Used in VAV indoor blower operation.
	DFS (upper pin)	24 VAC hot return from Dirty Filter Switch	Optional input; switch closure for greater than 15 seconds during indoor blower operation initiates a notification alarm
	DFS (lower pin)	24 VAC hot out for Dirty Filter Switch	Connects through circuit trace to the R terminal
	APS (upper pin)	24 VAC hot return from Air Proving Switch	When this optional input is enabled: the air proving switch must close within 30 seconds of initiation of indoor blower operation and not open for greater than 10 seconds during indoor blower operation to allow heat/cool operation and prevent an "APS open" alarm; the air proving switch must open within 30 seconds of termination of indoor blower operation to prevent an "APS stuck closed" notification alarm
	APS (lower pin)	24 VAC hot out for Air Proving Switch	Connects through circuit trace to the R terminal
	C	Common for the VFD output	Negative of the VDC circuit for the VFD output
	VFD	2-10 VDC (0-100%) output for the indoor blower Variable Frequency Drive	Output is active with indoor blower operation. For CV units: this output provides stepped IntelliSpeed control of the indoor blower VFD based on fan-only, cooling stage and heating stage outputs. For VAV units: this output provides control of the indoor blower VFD based on supply duct static pressure input and setpoint.
	VFDFLT	24 VAC hot input from the normally open VFD alarm contact	The VFD alarm contact switches from R within the unit wiring harness. 24 VAC input results in unit shutdown and a "VFD fault" alarm

Table 91: Smart Equipment™ UCB - USB connector

Location	Label	Description	Function and comments
F	J10	Type A female Universal Serial Bus connector	Used for backup, restoration, and copying of board parameters as well as board software updating through a flash drive
	J15	Factory wired SA Bus connector	

Table 92: Smart Equipment™ UCB - 24 V terminal

Location	Label	Description	Function and comments
G	24V FOR OUTPUTS	24 VAC hot for H1, H2, CN-FAN, AUX HGR, FAN C1 and C2 output relay contact switching	Output relay circuitry is isolated from other UCB components and the 24 VAC hot source may be from a second transformer in the unit

Table 93: Smart Equipment™ UCB - heat section connections

Location	Label	Description	Function and comments
H	H1	24 VAC hot output for heat section stage 1	Not effective for cooling-only units. Output if demand is present and permissions allow one stage or two stages of heat section operation
	H2	24 VAC hot output for heat section stage 2	Not effective for cooling-only units or units with single-stage heat sections. Output if demand is present and permissions allow two stages of heat section operation
	MV	24 VAC hot input confirming heat section operation	Sourced from gas valve in gas heat units or first stage heat contactor in electric heat units. Input within 5 minutes from initiation of H1 output initiates the "Heat On Fan Delay" timer, loss of input following the termination of H1 output initiates the "Heat On Fan Delay" timer, no input within 5 minutes from initiation of H1 output initiates an "Ignition Failure" alarm, input for longer than 5 minutes without H1 output initiates a "Gas Valve Mis-wire" alarm

Table 94: Smart Equipment™ UCB - pin cooling and fan output

Location	Label	Description	Function and comments
I	CN-FAN	24 VAC hot output for the condenser fan contactor coil	Output with either C1 or C2 output; interrupted during defrost cycle for heat pump units
	AUX HGR	24 VAC hot output for hot gas reheat components	Effective only for reheat units, output with reheat operation
	FAN	24 VAC hot output for indoor blower contactor coil/indoor blower VFD enable relay coil	Output with heat/cool operation, G input or schedule demand
	C1	24 VAC hot output for compressor 1	If demand is present and permissions allow compressor 1 operation; output with compressor cooling, comfort ventilation cooling, reheat or heat pump heating demands
	C2	24 VAC hot output for compressor 2	Not effective for one stage compressor UCBs. If demand is present and permissions allow compressor 2 operation; output with compressor cooling, comfort ventilation cooling or heat pump heating demands

Table 95: Smart Equipment™ UCB - refrigerant circuit safety switch and indoor blower overload connections

Location	Label	Description	Function and comments
J	HPS1 (right pin)	24 VAC hot out for refrigerant circuit 1 High Pressure Switch	Connects through circuit trace to the R terminal
	HPS1 (left pin)	24 VAC hot return from refrigerant circuit 1 High Pressure Switch	Input is only considered if C1 output is needed; input must be present to allow C1 output. Three HPS1 trips in a two hour period cause a “High Pressure Switch 1 Lockout” and C1 output is then prevented until alarm reset. Connects through circuit trace to the right LPS1 pin.
	LPS1 (right pin)	24 VAC hot out for refrigerant circuit 1 Low Pressure Switch	Connects through circuit trace to the left HSP1 pin
	LPS1 (left pin)	24 VAC hot return from refrigerant circuit 1 Low Pressure Switch	Input is only considered after 30 seconds of C1 output; afterwards, input must be present to allow C1 output. Three LPS1 trips in a one hour period cause a “Low Pressure Switch 1 Lockout” and C1 output is then prevented until alarm reset.
	HPS2 (right pin)	24 VAC hot out for refrigerant circuit 2 High Pressure Switch	Not effective for one stage compressor UCBs. Connects through circuit trace to the R terminal
	HPS2 (left pin)	24 VAC hot return from refrigerant circuit 2 High Pressure Switch	Not effective for one stage compressor UCBs. Input is only considered if C2 output is needed; input must be present to allow C1 output. Three HPS2 trips in a two hour period cause a “High Pressure Switch 1 Lockout” and C2 output is then prevented until alarm reset. Connects through circuit trace to the right LPS2 pin.
	LPS2 (right pin)	24 VAC hot out for refrigerant circuit 2 Low Pressure Switch	Not effective for one stage compressor UCBs. Connects through circuit trace to the left HSP2 pin
	LPS2 (left pin)	24 VAC hot return from refrigerant circuit 2 Low Pressure Switch	Not effective for one stage compressor UCBs. Input is only considered after 30 seconds of C2 output; afterwards, input must be present to allow C2 output. Three LPS2 trips in a one hour period cause a “Low Pressure Switch 2 Lockout” and C2 output is then prevented until alarm reset.
	FAN OVR (right pin)	24 VAC hot out for indoor blower FAN Overload relay contact/ motor protector switch	Connects through circuit trace to the R terminal
	FAN OVR (left pin)	24 VAC hot return from indoor blower FAN Overload relay contact/motor protector switch	Input is only considered if FAN output is needed; input must be present to allow FAN output and unit operation. One FAN OVR trip lasting longer than 5 minutes or three FAN OVR trips in a two hour period cause a “Fan Overload Lockout” and unit operation is then prevented until alarm reset.

Table 96: Smart Equipment™ UCB - SA BUS connections

Location	Label	Description	Function and comments[1]
K	PWR	Power for SA (“Sensor-Actuator”) BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the 15 VDC (reading to C) circuit for powering an optional netstat and/or Multi Touch gateway
	C	Common for SA BUS power and communication circuits	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Negative of the SA BUS circuits
	–	Communication for SA BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection and diagnostics board, netstat and/or Multi Touch gateway
	+	Communication for SA BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts higher than –) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection and diagnostics board, netstat and/or Multi Touch gateway
L	J8	6-pin phone jack connector	Incorporates the SA BUS terminals for convenience/alternate connection of SA BUS devices, primarily used for temporary service connection of the Multi Touch gateway

1 When wiring unit and other devices using the SA Bus and FC Bus, see Cable recommendations.

Table 97: Smart Equipment™ UCB - user interface

Location	Label	Description	Function and comments
M	Display	On-board, 2-line x 8-character back-lit display	On-board display, buttons and joystick allow access to UCB, economizer, 4-stage and FDD board parameters
	ENTER	Button for display menu acknowledgment and navigation	
	CANCEL	Button for display menu navigation and zeroing of active compressor ASCD timer	
	JOY	4-way Joystick for display menu navigation	

Table 98: Smart Equipment™ UCB - LEDs

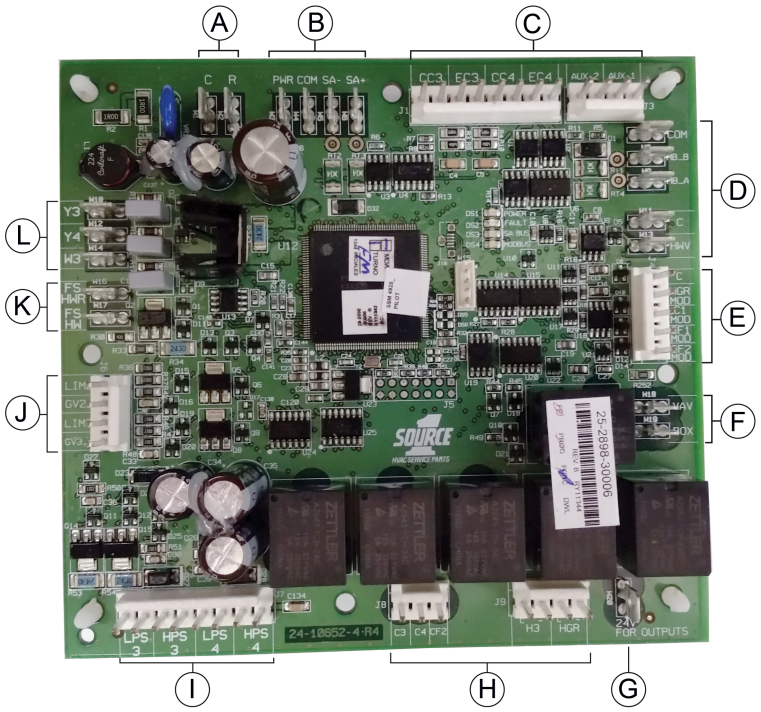
Location	Label	Description	Function and comments
N	POWER	Green UCB power indicator	Lit indicates 24 VAC is present at C and 24V terminals
	FAULT	Red hard lockout, networking error and firmware error indicator	1/2 second on/off flashing indicates one or more alarm is currently active, 1/10th second on/off flashing indicates a networking error (polarity, addressing, etc.) or a firmware error (likely correctable with re-loading from USB flash drive)
	SA BUS	Green UCB SA bus communication transmission indicator	Lit/flickering indicates UCB SA bus communication is currently active, off indicates the UCB is awaiting SA bus communication

Table 99: Smart Equipment™ UCB - optional communication sub-board

Location	Label	Description	Function and comments
O Terminal FC BUS connections	FC+	FC (“Field Connected”) BUS BACnet MSTP communication	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to COM; at least 0.25 volts higher than –) FC bus BACnet MSTP communication circuit
	FC–	FC (“Field Connected”) BUS BACnet MSTP communication	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to COM; at least 0.25 volts lower than +) FC bus BACnet MSTP communication circuit
	COM	Common for the FC (“Field Connected”) BUS BACnet MSTP communication circuit	Negative of the VDC FC bus BACnet MSTP communication circuit
	SHLD	Shield for the FC (“Field Connected”) BUS BACnet MSTP communication circuit	Earth ground reference of the cable to prevent interference on the FC bus BACnet MSTP communication circuit
Q	EOL switch	End Of Line selector switch for the FC BUS BACnet MSTP communication circuit	ON selected only for the UCB that is the terminus of the FC bus BACnet MSTP communication cable to prevent signal “bounce-back”
P	EOL	Green End Of Line indicator	Lit indicates the EOL switch is selected ON
	FC BUS	Green FC bus communication transmission indicator	Lit/flickering indicates outgoing UCB FC bus communication is currently active, off indicates the UCB is awaiting incoming FC bus communication
R	ISO PWR	Green communication board Isolated Power indicator	Lit indicates the UCB is supplying power to the communication sub-board

Four-stage board

Figure 87: Four-stage board



The following tables describe the details of the four-stage board, see the previous figure for the connection locations.

Table 100: Four-stage board - power and communication terminals

Location	Label	Description	Function and comments
A	C	24VAC common for 4-stage board power	
	R	24VAC hot for 4-stage board power	
B	PWR	Sensor Actuator (SA) Bus Power for SA bus devices	Not used on 4-stage board
	COM	Common for SA BUS power and communication circuits	Negative of the SA BUS circuits
	SA-	Communication for SA BUS devices	Negative of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection and diagnostics board, netstat and/or MAP Gateway
	SA+	Communication for SA BUS devices	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts higher than –) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection and diagnostics board, netstat and/or MAP Gateway

Table 101: Four-stage board - temperature sensor connections

Location	Label	Description	Function and comments
C	CC3+	#3 refrigerant circuit Condenser Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for heat pump units, not required for A/C units; 3.625 VDC reading CC3+ to CC3– with open circuit. Used in heat pump demand defrost calculation.
	EC3+	#3 refrigerant circuit Evaporator Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading EC3+ to EC3– with open circuit. Used in suction line temperature safety.
	CC4+	#4 refrigerant circuit Condenser Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for heat pump units, not required for A/C units; 3.625 VDC reading CC4+ to CC4– with open circuit. Used in heat pump demand defrost calculation.

Table 101: Four-stage board - temperature sensor connections

Location	Label	Description	Function and comments
C	EC4+	#4 refrigerant circuit Evaporator Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading EC4+ to EC4– with open circuit. Used in suction line temperature safety.
	AUX-2+	Not used	Not used
	AUX-1+	Not used	Not used

Table 102: Four-stage board - quick connect

Location	Label	Description	Function and comments
D	COM	Common for Modbus connection to staged heat board	Future
	MB_B	Terminal B for Modbus connection to staged heat board	Future
	MB_A	Terminal A for Modbus connection to staged heat board	Future
	C	Common for HW Valve connection	0-10VDC
	HWV	Analog out for HW Valve	0-10VDC
F	VAV	VAV box Common relay contact	Used to interlock the VAV boxes with RTU morning warm-up
	BOX	VAV box normally open relay contact	Used to interlock the VAV boxes with RTU morning warm-up

Table 103: Four-stage board - harness connectors

Location	Label	Description	Function and comments
E	C	Common for analog outputs	Future
	HGR MOD	0-10VDC analog output for hot gas reheat	Future
	C1 MOD	0-10VDC analog output for C1 modulation	Future
	CF1 MOD	0-10VDC analog output for Condenser Fan 1 modulation	Future
	CF2 MOD	0-10VDC analog output for Condenser Fan 2 modulation	Future

Table 104: Four-stage board - outputs and cool and heat section connections

Location	Label	Description	Function and comments
G	24V FOR OUTPUTS	24 VAC hot for C3, C4, CF2, H3, and HGR	Output relay circuitry is isolated from other 4-stage components and the 24 VAC hot source may be from a second transformer in the unit
H	C3	24 VAC hot output for compressor 3	If demand is present and permissions allow compressor 3 operation
	C4	24 VAC hot output for compressor 4	If demand is present and permissions allow compressor 4 operation
	CF2	24 VAC hot output for the condenser fan contactor coil	Output with either C3 or C4 output.
	H3	24 VAC hot output for heat section stage 3	Not effective for cooling-only units. Output if demand is present and permissions allow heat section operation
	HGR	24 VAC hot output for hot gas reheat	Future

Table 105: Four-stage board - refrigerant circuit safety switches

Location	Label	Description	Function and comments
I	LPS3 (right pin)	24 VAC hot out for refrigerant circuit 3 Low Pressure Switch	Connects through circuit trace to the left HSP3 pin
	LPS3 (left pin)	24 VAC hot return from refrigerant circuit 3 Low Pressure Switch	Input is only considered after 30 seconds of C3 output; afterwards, input must be present to allow C3 output. Three LPS3 trips in a one hour period cause a “Low Pressure Switch 3 Lockout” and C3 output is then prevented until alarm reset.
	HPS3 (right pin)	24 VAC hot out for refrigerant circuit 3 High Pressure Switch	Connects through circuit trace to the R terminal
	HPS3 (left pin)	24 VAC hot return from refrigerant circuit 3 High Pressure Switch	Input is only considered if C3 output is needed; input must be present to allow C3 output. Three HPS3 trips in a two hour period cause a “High Pressure Switch 3 Lockout” and C3 output is then prevented until alarm reset. Connects through circuit trace to the right LPS3 pin.
	LPS4 (right pin)	24 VAC hot out for refrigerant circuit 4 Low Pressure Switch	Connects through circuit trace to the left HSP4 pin
	LPS4 (left pin)	24 VAC hot return from refrigerant circuit 4 Low Pressure Switch	Input is only considered after 30 seconds of C4 output; afterwards, input must be present to allow C4 output. Three LPS4 trips in a one hour period cause a “Low Pressure Switch 4 Lockout” and C4 output is then prevented until alarm reset.
	HPS4 (right pin)	24 VAC hot out for refrigerant circuit 4 High Pressure Switch	Connects through circuit trace to the R terminal
	HPS4 (left pin)	24 VAC hot return from refrigerant circuit 4 High Pressure Switch	Input is only considered if C4 output is needed; input must be present to allow C4 output. Three HPS4 trips in a two hour period cause a “High Pressure Switch 4 Lockout” and C4 output is then prevented until alarm reset. Connects through circuit trace to the right LPS4 pin.

Table 106: Four-stage board - heat safety circuit

Location	Label	Description	Function and comments
J	LIM2	Monitored 24 VAC input through heat section limit switches	If voltage is absent, indicating the heat section is over temperature, the UCB will bring on the indoor blower
	GV2	24 VAC hot input confirming heat section operation	Sourced from gas valve 2 in gas heat units or second stage heat contactor in electric heat units. Input within 5 minutes from initiation of H2 output initiates the Heat On Fan Delay timer, loss of input following the termination of H2 output initiates the Heat On Fan Delay timer, no input within 5 minutes from initiation of H2 output initiates an Ignition Failure alarm, input for longer than 5 minutes without H2 output initiates a Gas Valve Mis-wire alarm
	LIM3	Monitored 24 VAC input through heat section limit switches	If voltage is absent, indicating the heat section is over temperature, the UCB will bring on the indoor blower
	GV3,4	24 VAC hot input confirming heat section operation	

Table 107: Four-stage board - hot water safety quick connects and thermostat inputs

Location	Label	Description	Function and comments
K	FS HWR	Flow switch for Hydronic heat – 24VAC hot output	Flow switch interlock for hot water coil
	FS HW	Flow switch for Hydronic heat – 24VAC hot return	Flow switch interlock for hot water coil
L	Y3	3rd stage cooling request, 24 VAC input switched from R	Visible in the display menu when the #ClgStgs parameter is set to 4, also effective for economizer free cooling supply air temperature reset when the #ClgStgs parameter is set to 4
	Y4	4th stage cooling request, 24 VAC input switched from R	Visible in the display menu when the #ClgStgs parameter is set to 4, also effective for economizer free cooling supply air temperature reset when the #ClgStgs parameter is set to 4
	W3	3rd stage heating request, 24 VAC input switched from R	Not effective for cooling-only units

Cable recommendations

Table 108: Cable type for FC buses and SA buses in order of preference

Bus and cable type	Non-plenum applications		Plenum applications	
	Part number	O.D.	Part number	O.D.
FC Bus: 22 AWG stranded, 3-wire twisted shielded cable[1]	Anixter: CBL-22/3-FC-PVC Belden®: B5501FE	0.138 in.	Anixter: CBL-22/3-FC-PLN Belden: B6501FE	0.140 in.
SA Bus (Terminal Block): 22 AWG stranded, 4-wire, 2 twisted-pair shielded cable	Anixter: CBL-22/2P-SA-PVC Belden: B5541FE	0.209 in.	Anixter: CBL-22/2P-SA-PLN Belden: B6541FE	0.206 in.
SA Bus (Modular Jack): 26 AWG solid 6-wire, 3 twisted-pair cable[2]	—	—	Anixter preassembled: CBL-NETWORK25 CBL-NETWORK50 CBL-NETWORK75 CBL-NETWORK100	0.15 in.
FC Bus: 22 AWG stranded, 3-wire twisted non-shielded cable	Belden: B5501UE	0.135 in.	Belden: B6501UE	0.131 in.
SA Bus (Terminal Block): 22 AWG stranded, 4-wire, 2 twisted-pair non-shielded cable	Belden: B5541UE	0.206 in.	Belden: B6541UE	0.199 in.

1 We strongly recommend 3-wire (for FC bus) and 4-wire, 2 twisted-pair (for SA bus), 22 AWG stranded, shielded cable. A 22 gauge cable offers the best performance for various baud rates, cable distances, and number of trunk devices primarily due to lower conductor-to-conductor capacitance. Shielded cable offers better overall electrical noise immunity than non-shielded cable. Observe the shield grounding requirements.

2 We recommend 26 AWG solid, 6-wire (3 twisted pairs) cable as the best fit for fabricating modular cables with the modular jack housing assembly. Be sure the cable you use fits the modular jack housing. The preassembled cables that are available from Anixter (Part No. CBL-NETWORKxxx) use 24 gauge wire.

Modulating Furnace Control

Figure 88: Modulating Furnace Control Board

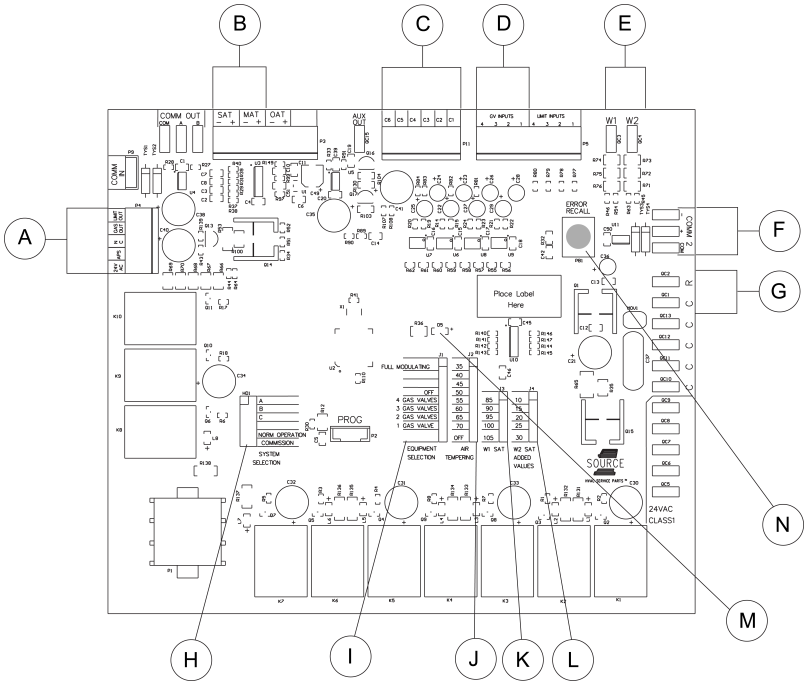


Table 109: Modulating Furnace Control Board Details

	Description		Function and Comments
A	APS	24 VAC hot return from Air Proving Switch	Air Proving Switch input verifies indoor airflow operation. During Normal Heating, if APS input (closed switch) is not received within 2 minutes of heat call, LED alarm will flash "5" but will not interrupt heat demand output. APS input is required to operate Air Tempering.
	NC	Not Used	Not Used
	GAS OUT	24 VAC output confirming heat section operation	Sends gas valve operation signal to UCB. During Normal Heating, when GV INPUT is received MFC will immediately output gas signal to UCB. In Air Tempering, MFC will not output gas signal to UCB; this is to avoid UCB alarm (Air Tempering operates without thermostat heating call from UCB).
B	SAT+	Supply Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Senses temperature of air leaving heat section. Input required for normal operation; 5.0 VDC reading SAT+ to SAT– with open circuit. Used in Normal Heating and Air Tempering to adjust heat demand output to maintain target supply air temperature. If MFC receives invalid SAT input (indicating bad thermistor) during Normal Heating, heat demand will default to 35% heat output (lowest level). MFC will not operatate Air Tempering with invalid SAT input. LED alarm will flash "3" with invalid SAT.
	MAT+	Mixed Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Senses temperature of air entering heat section. 5.0 VDC reading SAT+ to SAT– with open circuit. Used in Normal Heating to limit air temperature rise (SAT minus MAT) to a maximum of 65°F. Used in Air Tempering to determine if MAT is below value on "AIR TEMPERING" pin selection. MFC will not operatate Air Tempering with invalid MAT input. LED alarm will flash "4" with invalid MAT.

Table 109: Modulating Furnace Control Board Details

	Description		Function and Comments
C	C1 thru C6	Compressor signals, 24 VAC inputs (not all used)	Sourced from compressor control voltage signals. Monitors all compressors in the unit. If any compressors are on, the LED will flash "6" (non-fault condition) and the MFC will not operate Air Tempering.
D	GV INPUTS, 1	24 VAC input confirming heat section operation	Sourced from main gas valve ON signal. Used in MFC logic for "GAS OUT" output. If GV INPUT is not received within 5 minutes of heat demand output, LED alarm will flash "2" but will not interrupt heat demand output.
E	W1	1st stage heating request, 24 VAC input from H1 on UCB	With W1 input only from the UCB, MFC will adjust heat demand level to maintain supply air temperature value on "W1 SAT" pin selection.
	W2	2nd stage heating request, 24 VAC input from H2 on UCB	With W2 input (plus W1) from the UCB, MFC will adjust heat demand level to maintain supply air temperature of the added value of "W1 SAT" plus "W2 SAT ADDED VALUE" pin selections.
F	COMM 2, -	Communication for ignition control	Heat call and demand level to ignition control. Negative of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +).
	COMM 2, +	Communication for ignition control	Heat call and demand level to ignition control. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than -).
	COMM, COM	Common for ignition control communication circuit	
G	R	24 VAC hot for MFC board power	
	C	24 VAC common for MFC board power	
H	SYSTEM SELECTION (2 jumper pins)	System and operating mode pin selections	There are 2 jumpers for this pin bank. "A" and "NORM OPERATION" yields normal operation. "A" and "COMMISSION" is for rating the furnace and adjusting manifold pressure; automated modulation is bypassed, W1 input will output steady 35% (lowest) heat demand, W1 and W2 input will output steady 100% (highest) heat demand. "(BLANK)" and "COMMISSION" will step through an auto-sequence routine with a W1 or W1 and W2 input.
I	EQUIPMENT SELECTION (2 jumper pins)	Equipement type pin selections	There are 2 jumpers for this pin bank. "FULL MODULATING" and "1 GAS VALVE" should always be selected for this system.
J	AIR TEMPERING (1 jumper pin)	Air Tempering pin selection.	Used to select whether the Air Tempering function is allowed to operate. If jumper is set to any value other than "OFF", the MFC will initiate furnace operation if the MAT sensor input reading is 3°F below the selected value. To operate Air Tempering, APS input must be on, W1/W2 heat call from UCB must be off, and all compressor inputs must have been off for 10 minutes. If MFC has been in tempering mode (heating) for 10 minutes and SAT reading is 5°F or more above the Air Tempering selected value, heating is ended. If all conditions for Air Tempering are still met, it will be reiniatied after a 10 minute minimum off delay.
K	W1 SAT (1 jumper pin)	W1 SAT setpoint pin selection.	With W1 input only from the UCB, MFC will adjust heat demand level to maintain supply air temperature value on "W1 SAT" pin selection.
L	W2 SAT ADDED VALUE (1 jumper pin)	W2 SAT Added Value setpoint pin selection.	With W2 input (plus W1) from the UCB, MFC will adjust heat demand level to maintain supply air temperature of the added value of "W1 SAT" plus "W2 SAT ADDED VALUE" pin selections.
M	LED Light	LED status or alarm code	Flash count corresponds to status or fault condition.
N	ERROR RECALL (Button)	Error recall button	When pushed, the last 5 alarms will be flashed by the LED. The most recent will be flashed first, followed by the next most recent, and continuing until all the alarms stored (5 maximum) have been flashed.

START-UP & SERVICE DATA INSTRUCTION

COMMERCIAL PACKAGE UNITS

3.0 To 40.0 TONS

START-UP CHECKLIST

Date: _____

Job Name: _____

Customer Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Model Number: _____ Serial Number: _____

Qualified Start-up Technician: _____ Signature: _____

HVAC Contractor: _____ Phone: _____

Address: _____

Contractor's E-mail Address: _____

Electrical Contractor: _____ Phone: _____

Distributor Name: _____ Phone: _____

WARRANTY STATEMENT

Johnson Controls/Ducted Systems is confident that this equipment will operate to the owner's satisfaction if the proper procedures are followed and checks are made at initial start-up. This confidence is supported by the 30 day dealer protection coverage portion of our standard warranty policy which states that Johnson Controls/ Ducted Systems will cover parts and labor on new equipment start-up failures that are caused by a defect in factory workmanship or material, for a period of 30 days from installation. Refer to the current standard warranty policy and warranty manual for details.

In the event that communication with Johnson Controls/Ducted Systems is required regarding technical and/or warranty concerns, all parties to the discussion should have a copy of the equipment start-up sheet for reference. A copy of the original start-up sheet should be filed with the Technical Services Department.

The packaged unit is available in constant or variable air volume versions with a large variety of custom options and accessories available. Therefore, some variation in the startup procedure will exist depending upon the products capacity, control system, options and accessories installed.

This start-up sheet covers all startup check points common to all package equipment. In addition it covers essential startup check points for a number of common installation options. Depending upon the particular unit being started not all sections of this startup sheet will apply. Complete those sections applicable and use the notes section to record any additional information pertinent to your particular installation.

Warranty claims are to be made through the distributor from whom the equipment was purchased.

EQUIPMENT STARTUP

Use the local LCD or Mobile Access Portal (MAP) Gateway to complete the start-up.

A copy of the completed start-up sheet should be kept on file by the distributor providing the equipment and a copy sent to:

Johnson Controls/Ducted Systems
Technical Services Department
5005 York Drive
Norman, OK 73069

SAFETY WARNINGS

The inspections and recording of data outlined in this procedure are required for start-up of Johnson Controls/Ducted Systems' packaged products. Industry recognized safety standards and practices must be observed at all times. General industry knowledge and experience are required to assure technician safety. It is the responsibility of the technician to assess all potential dangers and take all steps warranted to perform the work in a safe manner. By addressing those potential dangers, prior to beginning any work, the technician can perform the work in a safe manner with minimal risk of injury.

⚠WARNING

Lethal voltages are present during some start-up checks. Extreme caution must be used at all times.

⚠WARNING

Moving parts may be exposed during some startup checks. Extreme caution must be used at all times.

NOTE: Read and review this entire document before beginning any of the startup procedures.

DESIGN APPLICATION INFORMATION

This information will be available from the specifying engineer who selected the equipment. If the system is a VAV system the CFM will be the airflow when the remote VAV boxes are in the full open position and the frequency drive is operating at 60 HZ. **Do not proceed with the equipment start-up without the design CFM information.**

Design Supply Air CFM: _____ Design Return Air CFM:_____

Design Outdoor Air CFM At Minimum Position: _____

Total External Static Pressure: _____

Supply Static Pressure: _____

Return Static Pressure: _____

Design Building Static Pressure: _____

Outside Air Dilution: Economizer Position Percentage: _____ CFM: _____

Supply Gas Pressure After Regulator W/o Heat Active _____ Inches_____

ADDITIONAL APPLICATION NOTES FROM SPECIFYING ENGINEER:

REFERENCE

General Inspection	Completed	See Notes
Unit inspected for shipping, storage, or rigging damage	☐	☐
Unit installed with proper clearances	☐	☐
Unit installed within slope limitations	☐	☐
Refrigeration system checked for gross leaks (presence of oil)	☐	☐
Terminal screws and wiring connections checked for tightness	☐	☐
Filters installed correctly and clean	☐	☐
Economizer hoods installed in operating position	☐	☐
Condensate drain trapped properly, refer to Installation Manual	☐	☐
Economizer damper linkage tight	☐	☐
Gas Heat vent hood installed	☐	☐
All field wiring (power and control) complete	☐	☐

Air Moving Inspection	Completed	See Notes
Alignment of drive components	☐	☐
Belt tension adjusted properly	☐	☐
Blower pulleys tight on shaft, bearing set screws tight, wheel tight to shaft	☐	☐
Pressure switch or transducer tubing installed properly	☐	☐

Exhaust Inspection Powered ☐ Barometric Relief ☐	Completed	See Notes
Check hub for tightness	☐	☐
Check fan blade for clearance	☐	☐
Check for proper rotation	☐	☐
Check for proper mounting (screen faces towards unit)	☐	☐
Prove operation by increasing minimum setting on economizer	☐	☐

Economizer Inspection Standard ☐ BAS ☐	Completed	See Notes
CO_2 sensor installed Yes ☐ No ☐	☐	☐
Check economizer setting (Reference Smart Equipment™ Control Board LCD menu location)	☐	☐
Prove economizer open/close through Smart Equipment™ Board Setting	☐	☐

Reheat Mode Normal ☐ or Alternate ☐ Not Applicable ☐
Humidity Sensor (2SH0401) _____

Operating Measurements - Air Flow

Fan operates with proper rotation (All VFD equipped units with the optional Manual Bypass must be phased for correct blower rotation with the Bypass switch set in the LINE position) ID Fans ☐ Exh. Fans ☐ Cond. Fans ☐	
Pressure drop across dry evaporator coil (At maximum design CFM) [1]	IWC
External Static Pressure	IWC
Return Static Pressure	IWC
Supply Static Pressure	IWC
Supply Air CFM Using Dry Coil Chart	CFM
Final Adjusted Supply Air CFM[2]	CFM

1. Consult the proper airflow to pressure drop table to obtain the actual airflow at the measured pressure differential.
2. Was a motor pulley adjustment or change required to obtain the correct airflow?
   Was it necessary to increase of decrease the airflow to meet the design conditions?
   If the motor pulley size was changed, measure the outside diameters of the motor and blower pulleys and record those diameters here;

Blower Motor HP _____FLA_____ RPM_____

Pulley Pitch Diameter _____Turns Out_____ Final Turns Out_____

Blower Pulley Pitch Diameter _____ Fixed Sheave_____

ELECTRICAL DATA

T1 - T2 _____ Volts T2 - T3 _____ Volts

Control Voltage _____ Volts T1 - T3 _____ Volts

Device	Nameplate	Measured List All Three Amperages
Supply Fan Motor[1, 2]	AMPS	AMPS
Exhaust Motor (Dampers 100%)	AMPS	AMPS
Condenser Fan #1	AMPS	AMPS
Condenser Fan #2 (if equipped)	AMPS	AMPS
Condenser Fan #3 (if equipped)	AMPS	AMPS
Condenser Fan #4 (if equipped)	AMPS	AMPS
Compressor #1	AMPS	AMPS
Compressor #2 (if equipped)	AMPS	AMPS
Compressor #3 (if equipped)	AMPS	AMPS
Compressor #4 (if equipped)	AMPS	AMPS

1. VAV units with heat section - simulate heat call to drive VAV boxes and VFD/IGV to maximum design airflow position.
2. VAV units without heat section - VAV boxes must be set to maximum design airflow position.

OPERATING MEASUREMENTS - COOLING

Stage	Discharge Pressure	Discharge Temp.	Liquid Line Temp.[1]	Subcooling[2]	Suction Pressure	Suction Temp.	Superheat
First	#	°	°	°	#	°	°
Second (if equipped)	#	°	°	°	#	°	°
Third (if equipped)	#	°	°	°	#	°	°
Fourth (if equipped)	#	°	°	°	#	°	°
Reheat 1st Stage	#	°	°	°	#	°	°

1. Liquid temperature should be taken before filter/drier.
2. Subtract 10 psi from discharge pressure for estimated liquid line pressure

Outside air temperature	_____	°F db	_____	°F wb	_____ %RH
Return Air Temperature	_____	°F db	_____	°F wb	_____ %RH
Mixed Air Temperature	_____	°F db	_____	°F wb	_____ %RH
Supply Air Temperature	_____	°F db	_____	°F wb	_____ %RH

REFRIGERANT SAFETIES

Action	Completed	See Notes
Prove Compressor Rotation (3 phase only) by gauge pressure	☐	☐
Prove High Pressure Safety, All Systems	☐	☐
Prove Low Pressure Safety, All Systems	☐	☐

OPERATING MEASUREMENTS - GAS HEATING

Fuel Type: ☐ Natural Gas ☐ LP Gas

Action		Completed	See Notes
Check for gas leaks		☐	☐
Prove Ventor Motor Operation		☐	☐
Prove Primary Safety Operation		☐	☐
Prove Auxiliary Safety Operation		☐	☐
Prove Rollout Switch Operation		☐	☐
Prove Smoke Detector Operation		☐	☐
Manifold Pressure	Stage 1	IWC	☐
	Stage 2 (If Equipped)	IWC	☐
	Stage 3 (If Equipped)	IWC	☐
Supply gas pressure at full fire		IWC	☐
Check temperature rise[1]	☐ measured at full fire	°F	☐

1. Input X Eff. (BTU output)
   1.08 X Temp. Rise

OPERATIONAL MEASUREMENTS - STAGING CONTROLS

Verify Proper Operation of Heating/Cooling Staging Controls	
Create a cooling demand at the Thermostat, BAS System or Smart Equipment™ Verify that cooling/economizer stages are energized.	☐
Create a heating demand at the Thermostat, BAS System or Smart Equipment™ Verify that heating stages are energized.	☐
Verify Proper Operation of the Variable Frequency Drive (If Required)	
Verify that motor speed modulates with duct pressure change.	☐

FINAL - INSPECTION

Verify that all operational control set points have been set to desired value Scroll through all setpoints and change as may be necessary to suit the occupant requirements.	☐
Verify that all option parameters are correct Scroll through all option parameters and ensure that all installed options are enabled in the software and all others are disabled in the software. (Factory software settings should match the installed options)	☐
Verify that all access panels have been closed and secured	☐
Save a backup file from the unit control board onto a USB flash drive.	☐

OBSERVED PRODUCT DEFICIENCIES & CONCERNS:

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