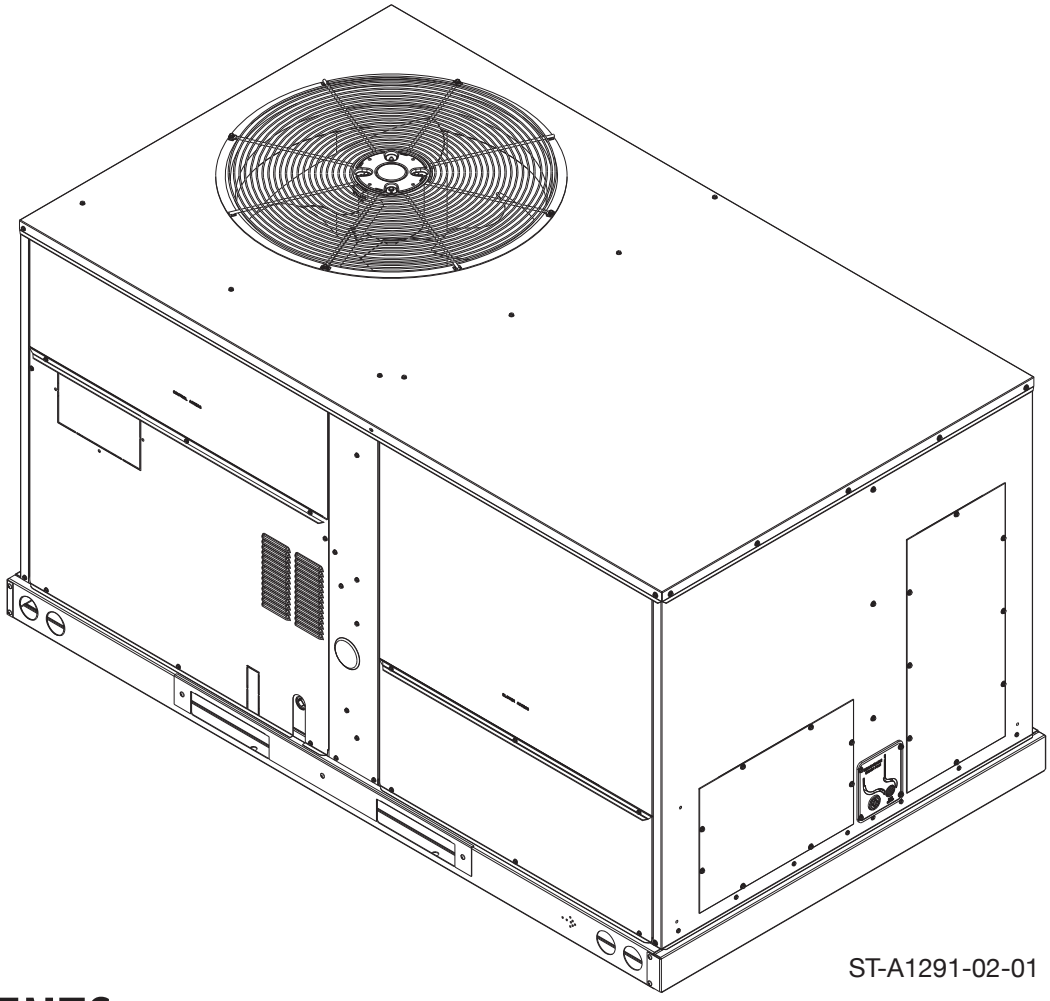
INSTALLATION INSTRUCTIONS

FOR RENAISSANCE™ PACKAGED AIR-CONDITIONING UNITS

RACC SERIES 3.0, 4.0, 5.0 & 6.0 TON [10.6, 14.1, 17.6 & 21.1 KW]
60 HZ MODELS
WITH R-410A REFRIGERANT



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CONTENTS

DO NOT DESTROY THIS MANUAL. PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN.

92-107218-04-04

Accredited by the RvA

ISO 9001:2015

Certificate Number: 30164

AHRI CERTIFIED®

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Unitary Large AC
AHRI Standard 340/360

Certification applies only when the complete system is listed with AHRI.

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AHRI Standard 210/240

Certification applies only when the complete system is listed with AHRI.

c UL us LISTED

RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

⚠WARNING

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THIS UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION, ADJUSTMENT, SERVICE OR MAINTENANCE, POSSIBLY RESULTING IN FIRE, ELECTRICAL SHOCK, CARBON MONOXIDE POISONING, EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠WARNING

PROPOSITION 65 WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

BA01-102

DO NOT DESTROY THIS MANUAL. PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN.

CONTENTS (DETAILED)

A. IMPORTANT SAFETY AND GENERAL INFORMATION

A.1 Introduction

This booklet contains the installation and operating instructions for your 3 ton, 4 ton, 5 ton, or 6 ton packaged cooling unit. There are some precautions that should be taken to ensure proper operation. Improper installation can result in unsatisfactory operation or dangerous conditions.

Read this booklet and any instructions packaged with separate equipment required to make up the system prior to installation. Give this booklet to the owner and explain its provisions. The owner should retain this booklet for future reference.

The images contained within this document may not be an exact representation of every unit, accessory, installation, etc. We reserve the right to change the content of this document at any time.

⚠WARNING: The manufacturer's warranty does not cover any damage or defect to the air conditioner caused by the attachment or use of any components, accessories or devices (other than those authorized by the manufacturer) into, onto or in conjunction with the air conditioner.

You should be aware that the use of unauthorized components, accessories or devices may adversely affect the operation of the air conditioner and may also endanger life and property. The manufacturer disclaims any responsibility for such loss or injury resulting from the use of such unauthorized components, accessories or devices.

A.2 Agency Performance Audit and Efficiency Testing Notice

NOTICE: BREAK-IN PERIOD

Prior to agency testing, run the compressor for 16 hours at 115°f outdoor ambient temperature and 80° dry bulb / 75° wet bulb indoor ambient temperature.

NOTICE: EFFICIENCY TESTING NOTICE

For purposes of verifying or testing efficiency ratings, the test procedure in Title 10 Appendix M to Subpart B of Part 430 (Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps), and the clarifying provisions provided in the standards listed below that were applicable at the date of manufacture should be used for test set up and performance.

SETUP

- ASHRAE 37 - 2009 (RA 2019)

PERFORMANCE:

- ANSI/ASHRAE 90.1 - 2019
- ANSI/ASHRAE 103 (2017)
- AHRI Operations for Unitary Small AC Equipment 210/240 (2017) for 3-5T
- AHRI Operations for Unitary Large AC Equipment 340/360 (2015) for 6T

SAFETY

UL 1995 5th Edition

A.3. Importance of a Quality Installation

Optimal system performance and longevity depend upon a quality and proper installation. Failure to properly setup and commission this unit could result in undesirable operation and subsequent faults and potential failures.

Carefully follow all guidelines listed in the manual and industry best practices. Conform to all local code requirements. Contact your local technical representative with any questions or concerns.

A.4. Importance of Air Flow and Setup

Optimal system performance is also dependent upon having the ideal airflow across the condensing and evaporating coils, and upon matching the charge weight to the manufacturer's spec for the unit. Improper or restricted air flow, and incorrect charge weight, will hinder the performance of the unit. Please refer to the manufacturer's recommended clearances for setting the unit and the included guide for setting air flow. Refer to the rating plate for the charge weight.

A.5. Checking Product and Inspection

Upon receiving the unit, inspect it for any damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. IMPORTANT: Check the unit model number, heating size, electrical characteristics, and accessories to determine if they are correct.

B. GENERAL SPECIFICATIONS

B.1 Safety Warnings

⚠WARNING: The manufacturer's warranty does not cover any damage or defect to the air conditioner caused by the attachment or use of any components, accessories or devices (other than those authorized by the manufacturer) into, onto or in conjunction with the air conditioner. You should be aware that the use of unauthorized components, accessories or devices may adversely affect the operation of the air conditioner and may also endanger life and property. The manufacturer disclaims any responsibility for such loss or injury resulting from the use of such unauthorized components, accessories or devices.

⚠WARNING: Disconnect all power to the unit before starting maintenance. Failure to do so can result in severe electrical shock or death

⚠CAUTION: R-410A systems operate at higher pressures than R-22 systems. Do not use R-22 service equipment or components on R-410A equipment.

⚠WARNING: do not, under any circumstances, connect return ductwork to any other heat producing device such as a fireplace insert, stove, etc. Unauthorized use of such devices may result in fire, carbon monoxide poisoning, explosion, property damage, severe personal injury or death.

⚠WARNING: The unit must be permanently grounded. A grounding lug is provided in the electric heat access area for a ground wire.

Failure to ground this unit can result in fire or electrical shock causing property damage, severe personal injury or death.

⚠WARNING: Only electric heater kits supplied by this manufacturer as described in this publication have been designed, tested, and

Evaluated for use with this unit. Use of any other manufactured electric heaters installed within this unit may cause hazardous conditions resulting in property damage, fire, bodily injury or death.

B. GENERAL SPECIFICATIONS

B.2. Major Components

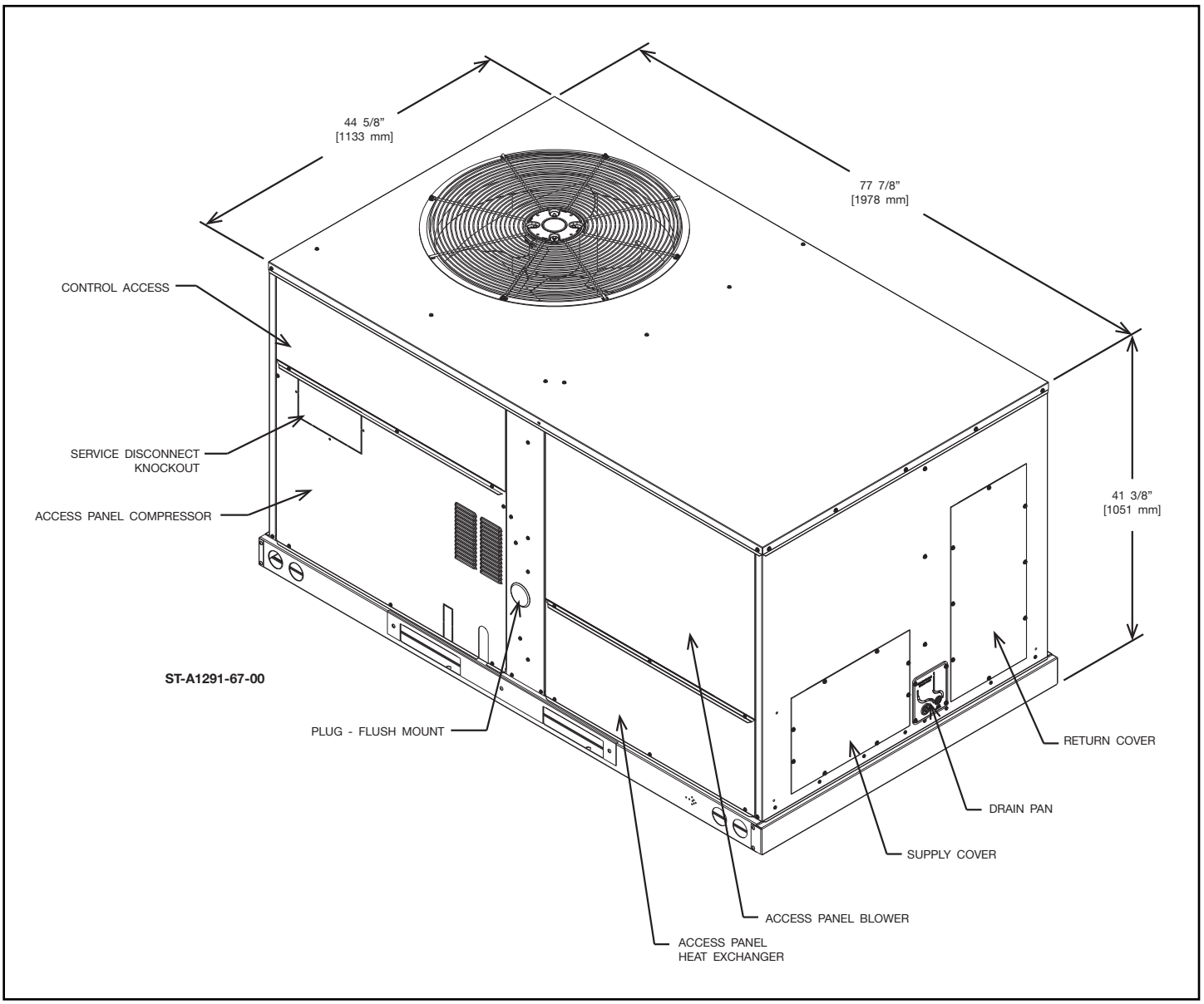
The unit includes a hermetically-sealed refrigerating system consisting of a scroll compressor, condenser coil, evaporator coil with TXV, a circulation air blower, a condenser fan, and all necessary internal electrical wiring.

The cooling system of these units is factory evacuated, charged, and performance tested. Refrigerant amount and type are indicated on rating plate.

B.3. Product Data Information

B.3.1. Dimensional Information

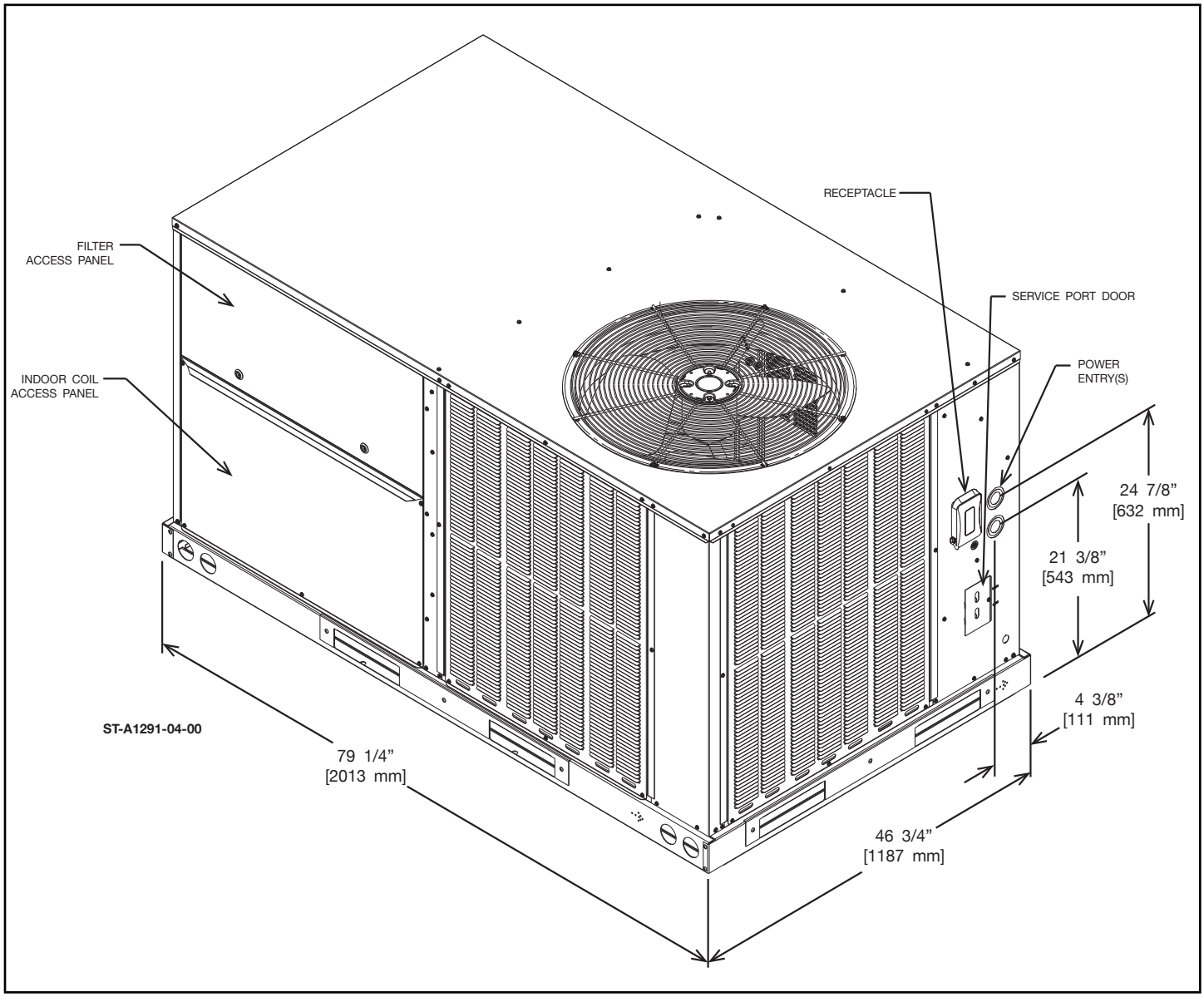
IMPORTANT: This unit must be mounted level in both directions to allow water to drain from the condenser section and condensate pan.



B.3. Product Data Information

B.3.1. Dimensional Information (Cont.)

IMPORTANT: This unit must be mounted level in both directions to allow water to drain from the condenser section and condensate pan.



B.3.2. Product Specifications

The packaged Air Conditioning rooftop unit is available with 10, 15, 20, or 24 KW electric heat input (either factory installed or field installed). Cooling capacity is 3.0, 4.0, 5.0, and 6.0 nominal tons. Units are convertible from downflow supply/return to sideflow supply/return by relocation of supply/return cover panels. See section ***C.3.5. Cover Panel Installation/ Conversion Procedure*** for more details.

The units are weatherized for mounting outside of the building.

⚠WARNING: Units are not design certified to be installed inside the structure. Doing so can cause inadequate unit performance as well as property damage.

B. GENERAL SPECIFICATIONS

B.3. Product Data Information

B.3.3. General Data

*See **Appendix A** towards the end of this manual for General Data.*

B.3.4. Electrical Data Reference

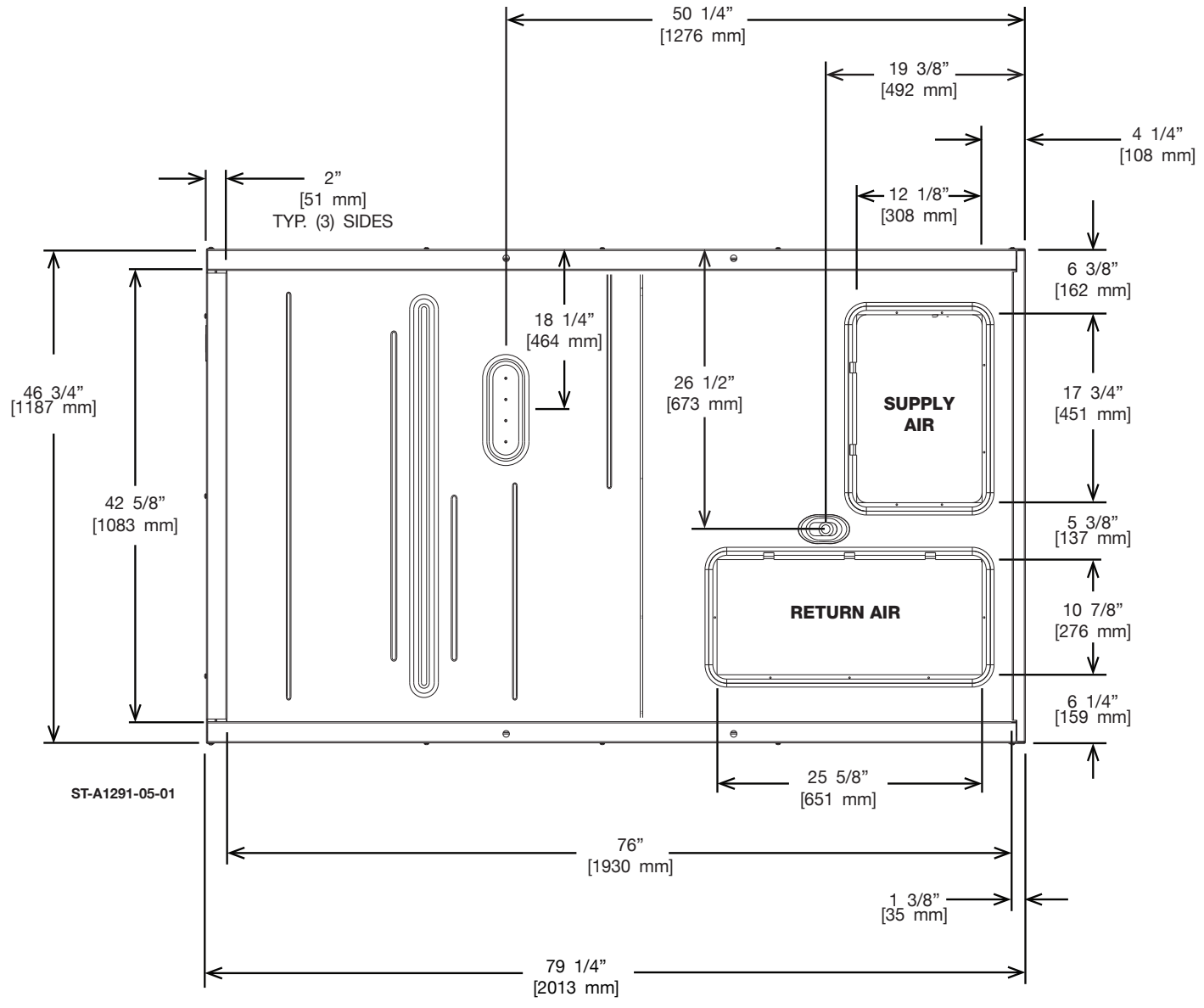
*See **Appendix B** towards the end of this manual for Electrical Data.*

B.3.5. Air Flow Performance Data

*See **Appendix C** towards the end of this manual for Air Flow Performance Data.*

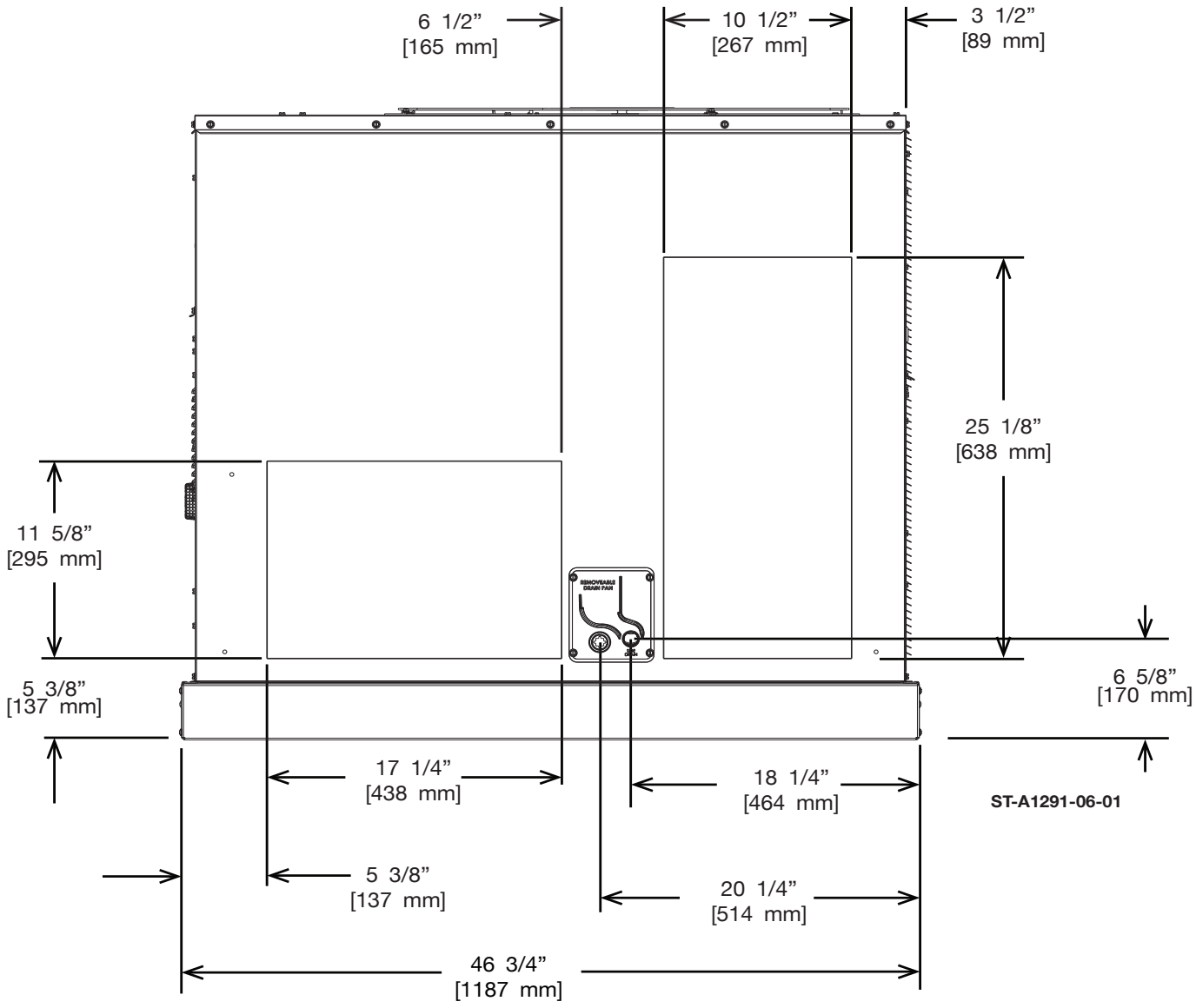
B.3.6. Supply and Return Duct Dimensions

Figure B.3.6. - A: Supply And Return Dimensions For Downflow Applications (Bottom View Looking Up)



B.3.6. Supply and Return Duct Dimensions

Figure B.3.6. - B: Supply And Return Dimensions For Horizontal Applications



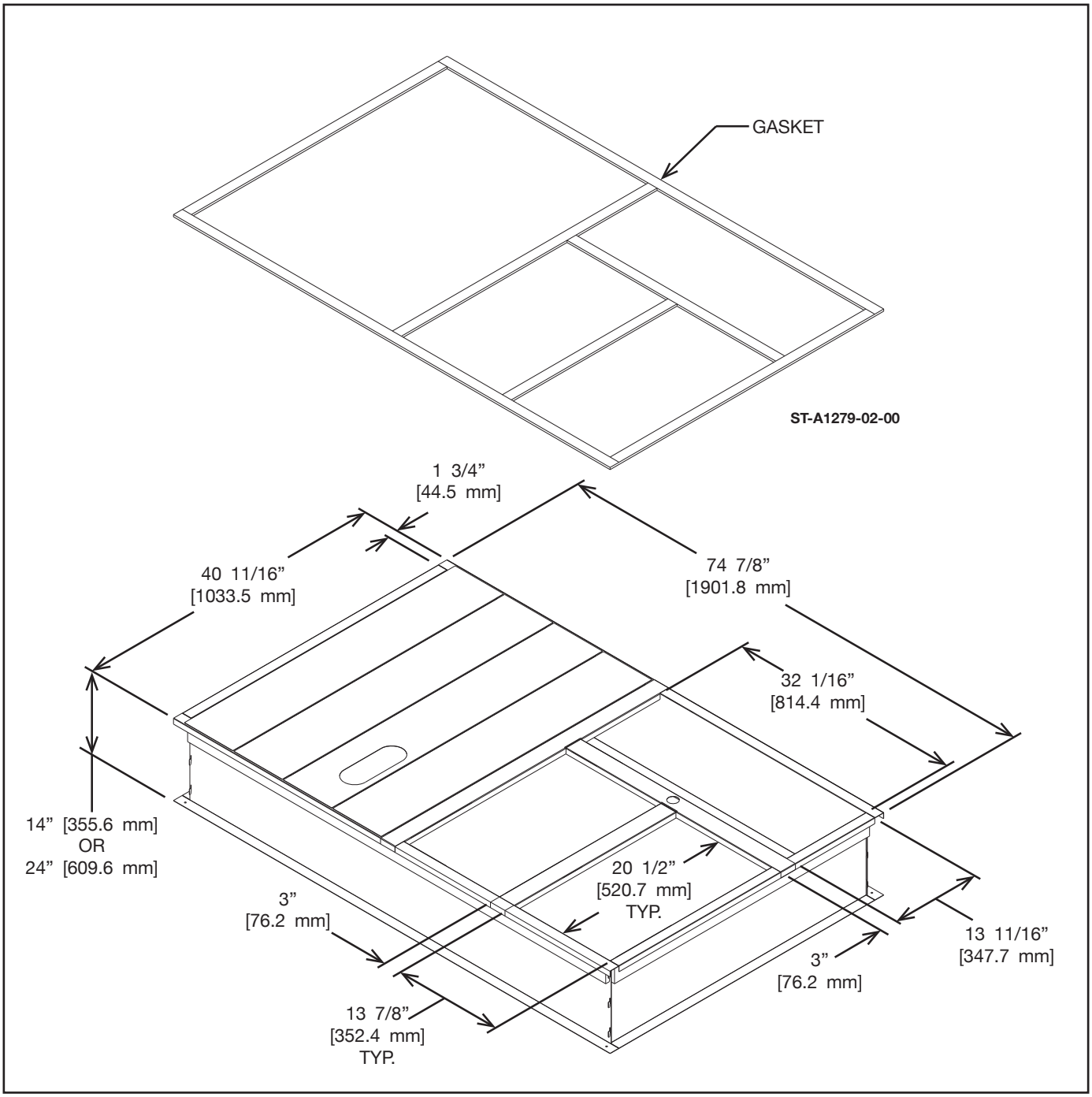
B. GENERAL SPECIFICATIONS

B.3. Product Data Information

B.3.7. Curb Dimensions

NOTE: See section C.3.3. Rooftop Installation for more information for installing the unit on a curb.

Figure B.3.7. – A: Roofcurb Complete Assembly



C. INSTALLATION OF THE UNIT

C.1. General

C.1.1. Installation

Install this unit in accordance with local and national standards. Any and all work must be done by authorized personnel.

C.1.2. Pre-Installation Checkpoints

Before attempting any installation, carefully consider the following points:

- Structural strength of supporting members (Rooftop Installation)
- Clearances and provision for servicing
- Power supply and wiring
- Air duct connections and sizing
- Drain facilities and connections
- Location for minimum noise and vibration - away from bedroom windows

C.2. Tool and Refrigerant

C.2.1. Tools Required for Installing and Servicing R-410A Models

Manifold Sets:

- Up to 800 PSIG High Side
- Up to 250 PSIG Low Side
- 550 PSIG Low Side Retard

Manifold Hoses:

- Service Pressure Rating of 800 PSIG
- Zero-loss fittings

Recovery Cylinders:

- 400 PSIG Pressure Rating

Dept. of Transportation

- 4BA400 or BW400

C.2.2. Specifications of R-410A

All units are factory charged with R-410a Refrigerant.

Combustibility: At pressures above 1 atmosphere, mixture of R-410A and air can become combustible. **R-410A and air should never be mixed in tanks or supply lines, or be allowed to accumulate in storage tanks. Leak checking should never be done with a mixture of R-410A and air.** Leak checking can be performed safely with nitrogen or a mixture of R-410A and nitrogen.

C.2.3. Quick Reference Guide for R-410A

Ensure that servicing equipment is designed to operate with R-410A.

- R-410A refrigerant cylinders are pink.
- R-410A, as with other HFC's is only compatible with POE oils.
- Vacuum pumps will not remove moisture from POE oil.
- R-410A systems are to be charged with liquid refrigerants.
- Do not install a suction line filter drier in the liquid line.
- A liquid line filter drier is standard on every unit.
- Desiccant (drying agent) must be compatible for POE oils and R-410A.

C. INSTALLATION OF THE UNIT

C.2. Tool and Refrigerant

C.2.4. Evaporator Coil/TXV

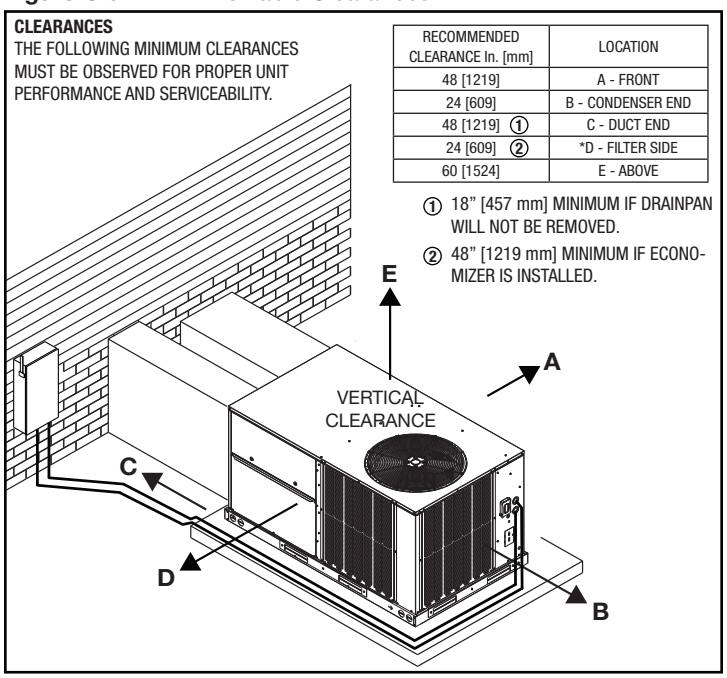
The thermostatic expansion valve is specifically designed to operate with R- 410A. **The existing evaporator must be replaced with the factory specified TXV evaporator specifically designed for R-410A.**

C.3. Choosing a Location

C.3.1.Unit Location: Allowable Clearances and Operational Issues

The unit location must comply with the allowable clearances listed in ***Figure C.3.1. - A.*** Failure to comply with the recommended clearances may result in operational issues such as decreased capacity, restricted condenser airflow, and condenser motor fatigue.

Figure C.3.1. - A: Allowable Clearances



C.3.2. Outside Installation

⚠WARNING: These units are designed certified for outdoor installation only. Installation inside any part of a structure can result in inadequate unit performance as well as property damage.

1. Select a location where external water drainage cannot collect around unit.

2. Provide a level slab sufficiently high enough above grade to prevent surface water from entering the unit

3. Locate the unit to provide proper access for inspection and servicing as shown in ***Figure C.3.1. - A.***

4. Locate unit where operating sounds will not disturb owner or neighbors.

5. Locate unit so roof runoff water does not pour directly on the unit. Provide gutter or other shielding at roof level. Do not locate unit in an area where excessive snow drifting may occur or accumulate.

6. Where snowfall is anticipated, the height of the unit above the ground level must be considered. Mount unit high enough to be above anticipated maximum area snowfall.

7. Select an area which will keep the areas of the vent, air intake, and A/C condenser fins free and clear of obstructions such as weeds, shrubs, vines, snow, etc. Inform the user accordingly.

C.3.3. Rooftop Installation

1. Before locating the unit on the roof, make sure that the roof structure is adequate to support the weight involved. (See Electrical & Physical Tables in this manual.) **THIS IS VERY IMPORTANT AND IS THE INSTALLER'S RESPONSIBILITY.**

2. For rigging and roofcurb details, see section ***C.4.3.***

3. The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

IMPORTANT: *If unit will not be put into service immediately, block off supply and return air openings to prevent excessive condensation.*

C.3.4. Corrosive Environments

The metal parts of this unit may be subject to rust or deterioration in adverse environmental conditions. This oxidation could shorten the equipment's useful life. Salt spray, fog or mist in seacoast areas, sulfur or chlorine from lawn watering systems, and various chemical contaminants from industries such as paper mills and petroleum refineries are especially corrosive.

If the unit is to be installed in an area where contaminants are likely to be a problem, give special attention to the equipment location and exposure.

1. Avoid having lawn sprinkler heads spray directly on the unit cabinet.

2. In coastal areas, install the unit on the side of the building away from the waterfront.

3. In some situations, fencing or shrubs may give some protection against contaminants. Be mindful of the allowable clearances.

⚠WARNING: Disconnect all power to unit before starting maintenance. Failure to do so can cause electrical shock resulting in personal injury or death. Regular maintenance will reduce the buildup of contaminants and help to protect the unit's finish.

1. Frequent washing of the cabinet, fan blade and coil with fresh water will remove most of the salt or other contaminants that build up on the unit.

2. Regular cleaning and waxing of the cabinet with an automobile polish will provide some protection.

Several different types of protective coatings are offered in some areas. These coatings may provide some benefit, but the effectiveness of such coating materials cannot be verified by the equipment manufacturer. The best protection is frequent cleaning, maintenance and minimal exposure to contaminants.

C.3.5. Cover Panel Installation/ Conversion Procedure

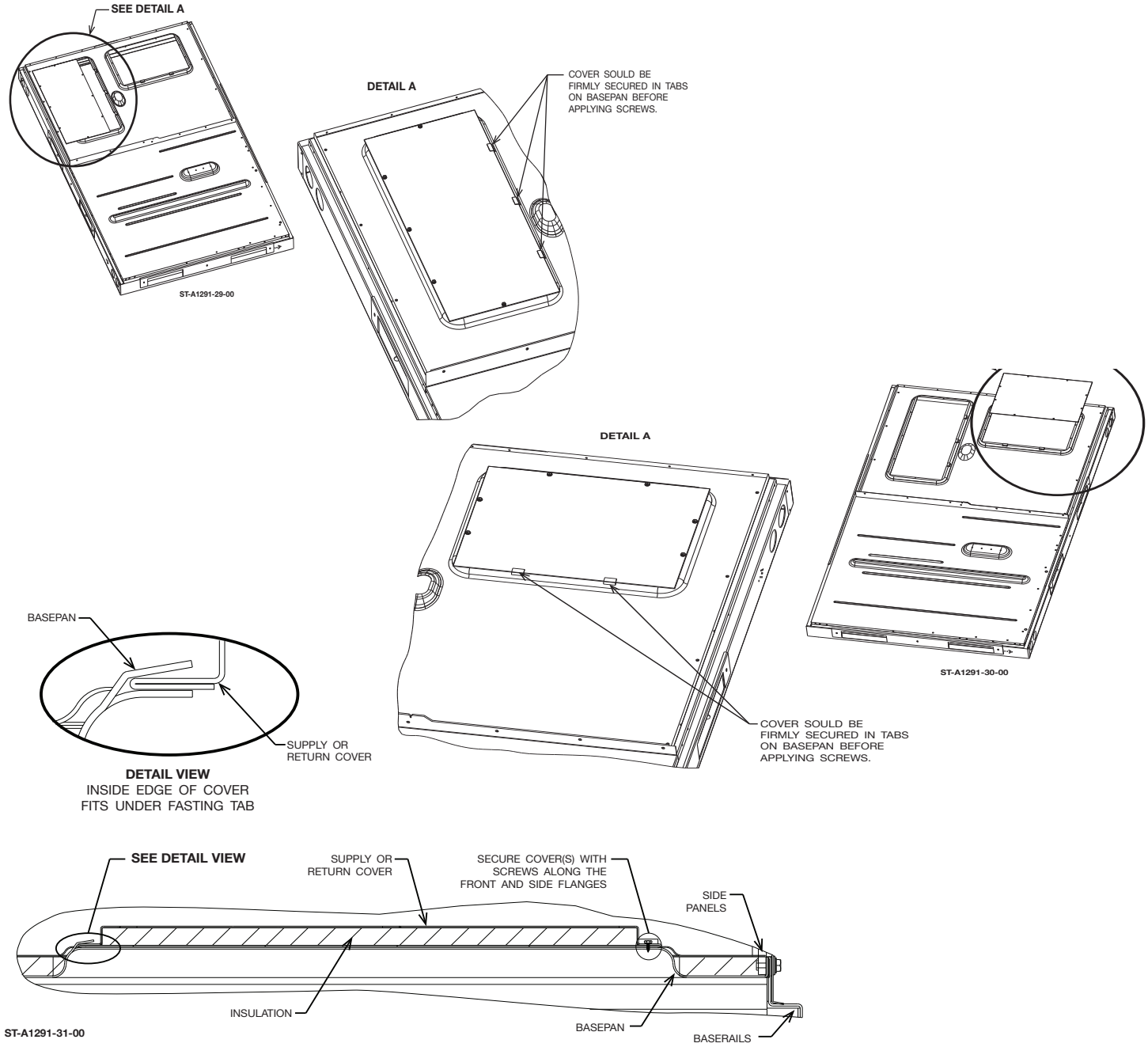
FROM DOWNFLOW TO HORIZONTAL

1. Remove the covers from the supply and return openings on the unit. ***See Figure B.3.6. – B*** for reference.

2. Install the covers over the supply and return openings in the basepan, painted side up, inserting the leading flange under the bracket provided. Place the back flange to top of the front bracket provided. ***See Figure C.3.5. –A*** for reference.

3. Secure the return and supply cover to front bracket with screws.

Figure C.3.5. – A: Downflow to Horizontal Conversion



C. INSTALLATION OF THE UNIT

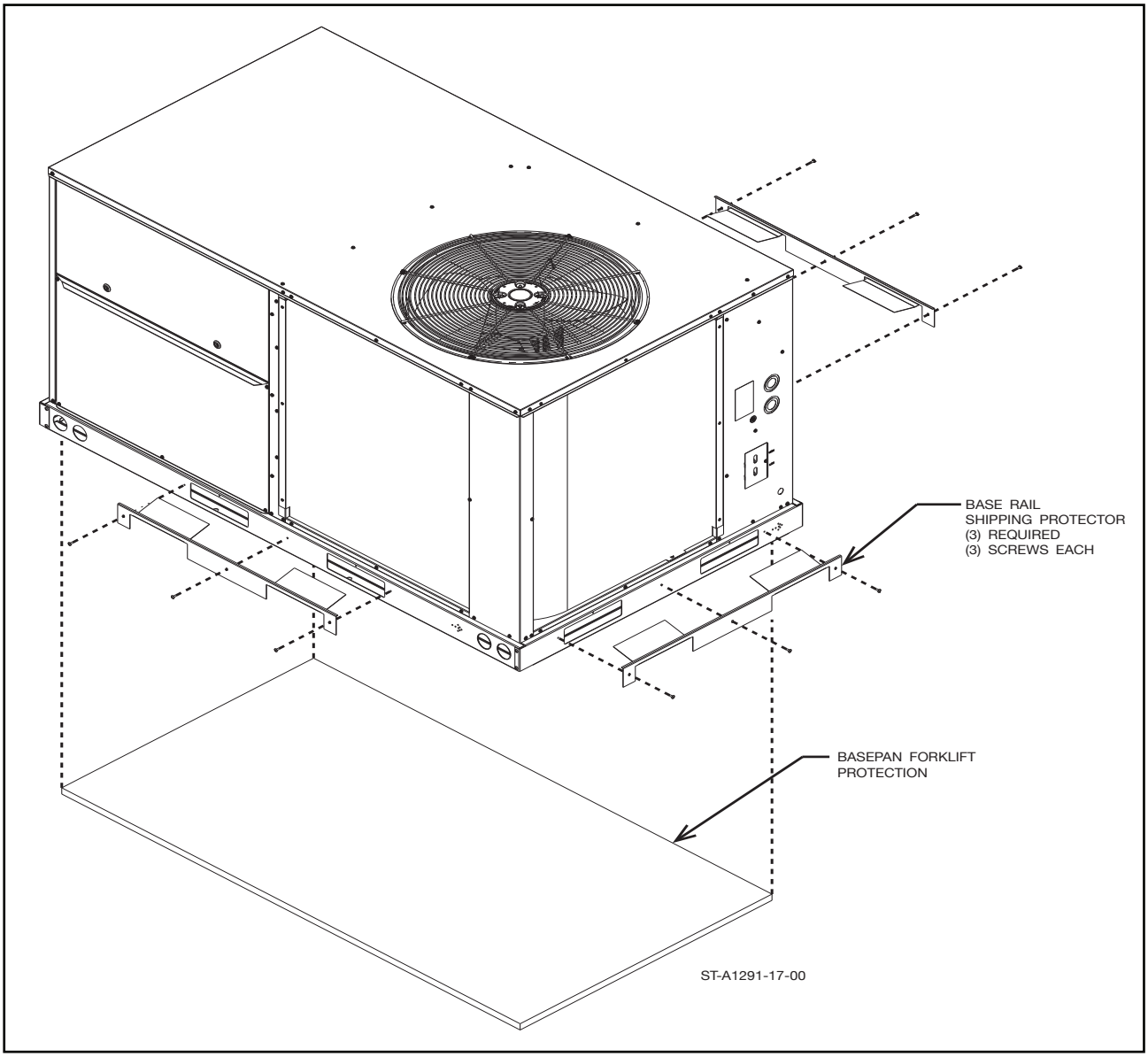
C.4.Setting the Unit

C.4.1. Removing Shipping material

There will be three types of shipping material that will need to be removed: The cardboard basepan protection underneath, the wooden skid on the top, and the condenser coil protection (on non-louver panel units).

• **Woodboard Basepan Protection** – Remove the screws that attach the metal brackets for each of the forklift fork-entry points, and remove the brackets. This will release the cardboard from underneath, and it may be removed when the unit is lifted.

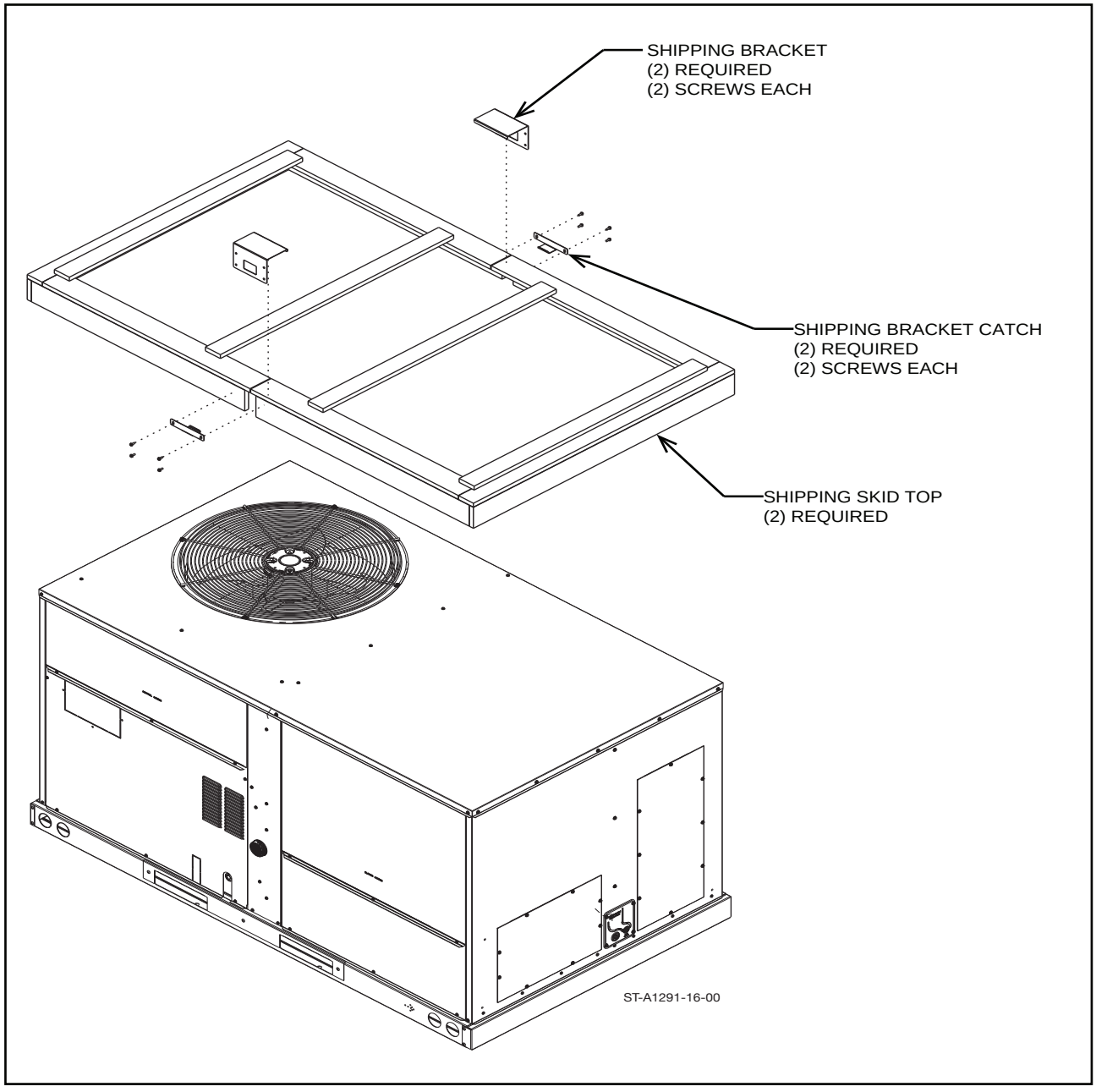
Figure C.4.1. – A: Basepan Protection Assembly



• **Wooden Skid –** Remove the screws from the metal brackets located in the middle along both long sides of the unit. This will detach the two sections of the wooden skid and allow them to be lifted off.

If the unit is to be lifted by a crane, it is recommended to leave the top skid on until after the unit is on the roof to provide extra protection if spreader bars are not used.

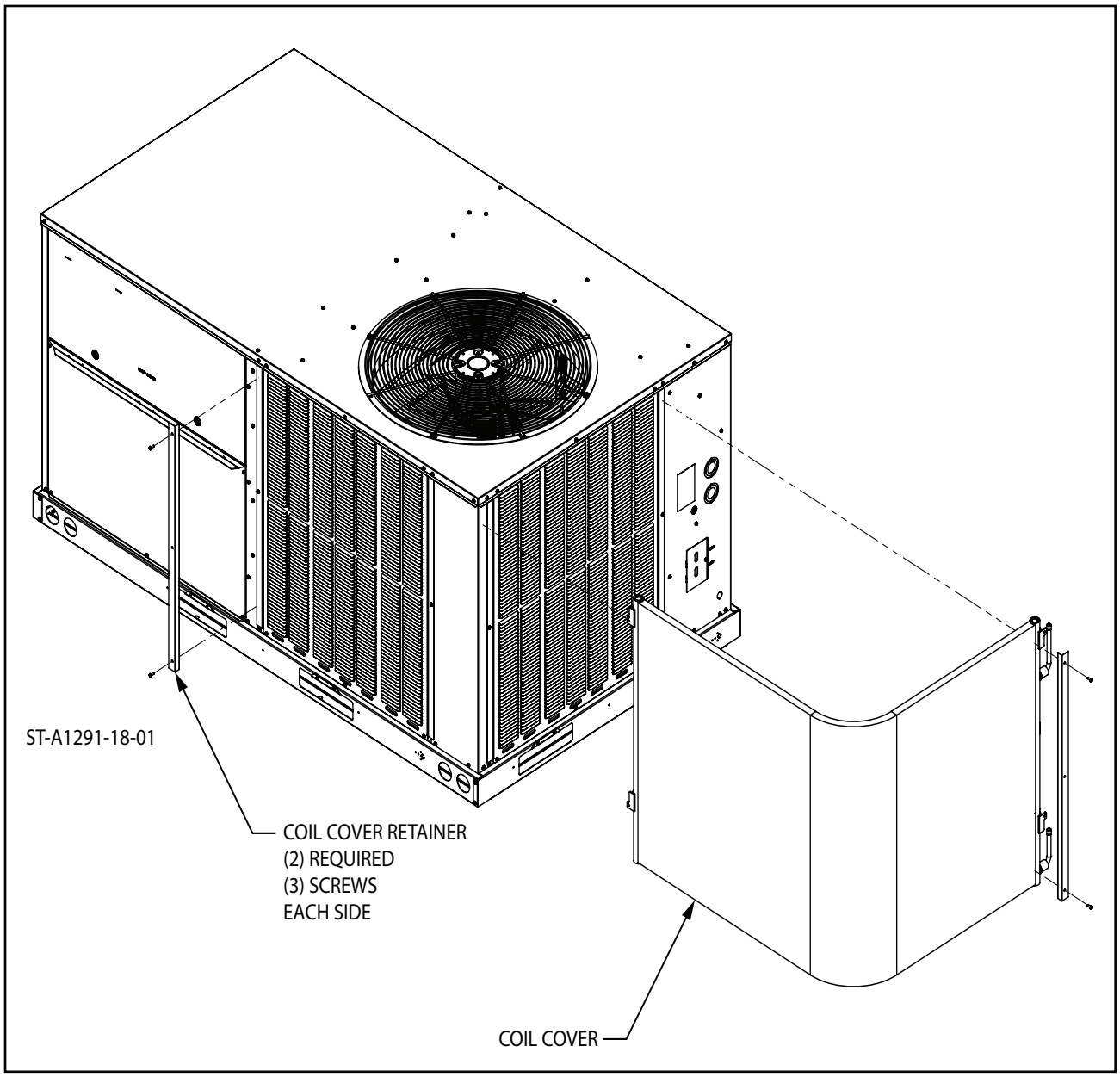
Figure C.4.1. – B : Wooden Skid Assembly



C. INSTALLATION OF THE UNIT

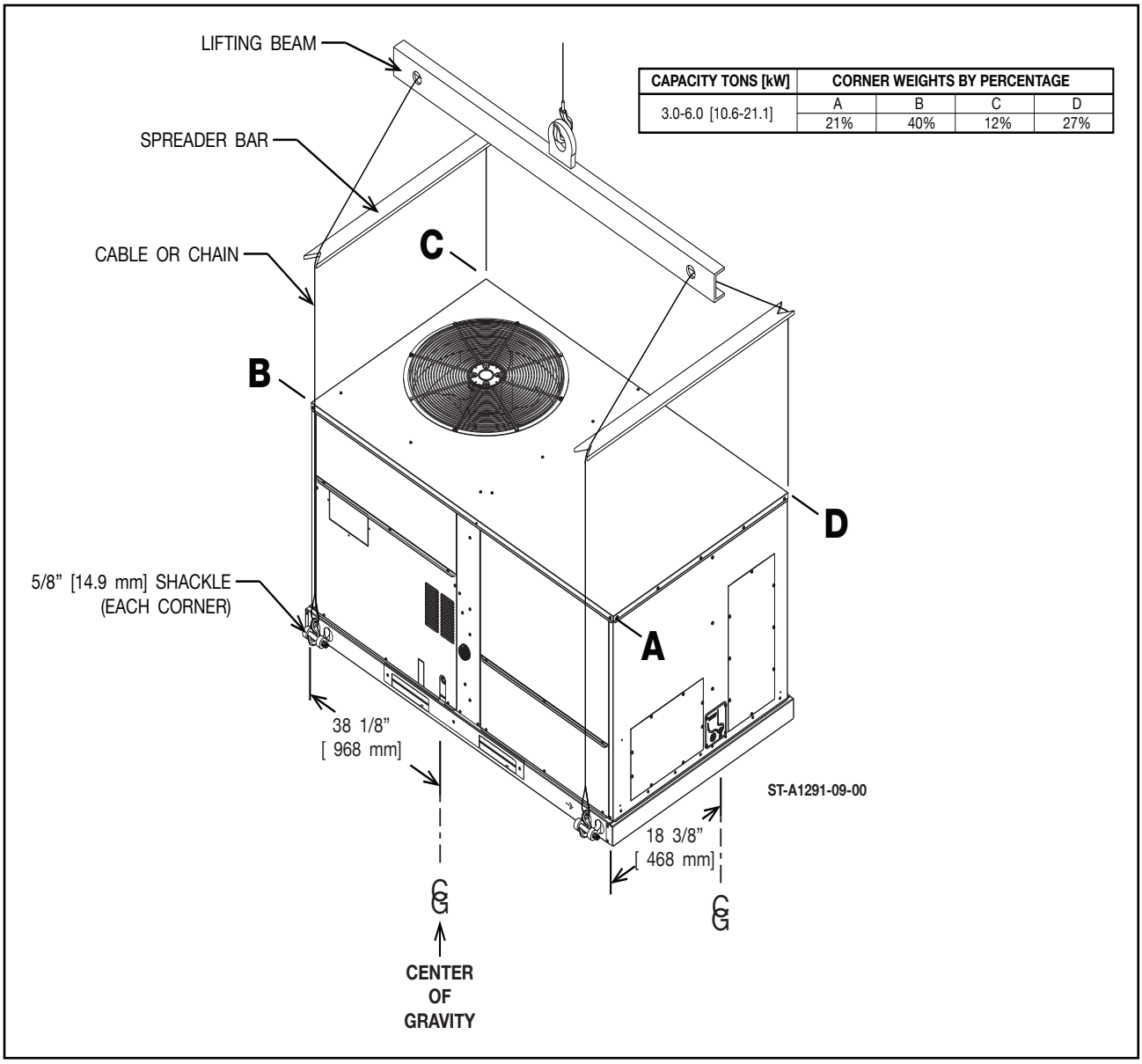
• **Condenser Coil Protection –** Remove the screws along the perimeter of the coil protector. This will allow the protector to be removed. If the unit has louver panels, it will not have the condenser coil protection.

Figure C.4.1. – C: Condenser Coil Protection Assembly



C.4.2. Lifting the Unit

Figure C.4.2. – A : Lifting Detail



CAPACITY TONS [kW]	CORNER WEIGHTS BY PERCENTAGE			
	A	B	C	D
3.0-6.0 [10.6-21.1]	21%	40%	12%	27%

C. INSTALLATION OF THE UNIT

C.4.3. On a Roof Curb

Refer to ***Figure C.3.1. - A*** in section ***C.3.1. "Unit Location: Allowable Clearances and Operational Issues"*** before installing the unit on a roof curb.

Only use manufacturer-approved roofcurb products for the unit.

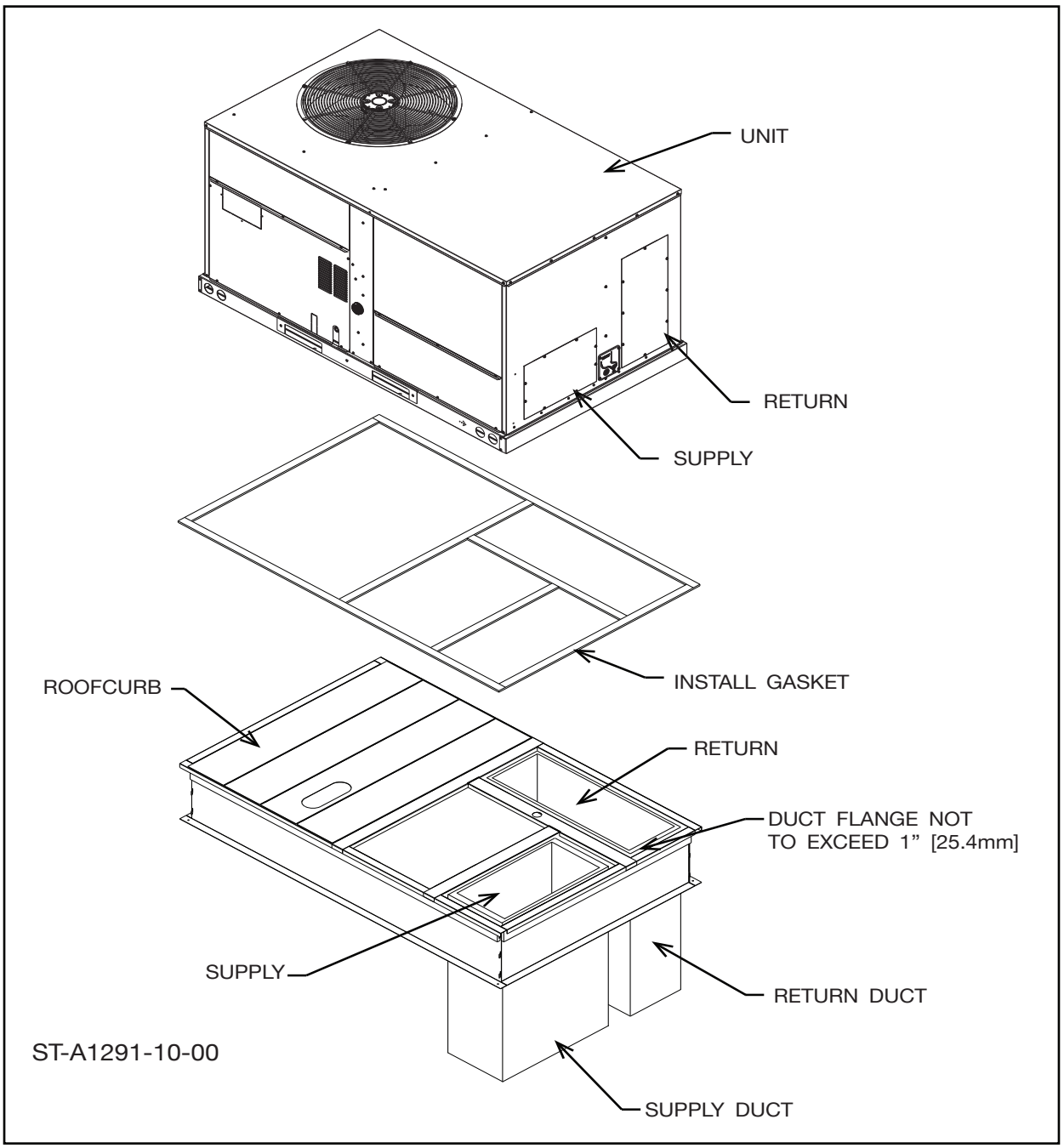
C.4.3.1. Installing the Roof Curb

Refer to the separate Installation Instructions for installing a roof curb. The accessory part numbers for the following accessories can be found in the product specification sheet:

- 14" and 21" Roofcurb
- Roofcurb Adapter

C.4.3.2. Setting the Unit

Figure C.4.3.2. - A: Setting the unit on Roofcurb Assembly



C.4.3.3. High Wind and Seismic Tie-Down Methods

The units must be secured in compliance with ASCE 7-10 and the latest Florida Building Code. Please refer to Appendix J: Unit Tie-Down Methods.

C.4.4. On a slab

C.4.4.1. Setting the Unit

Set the unit on a stable concrete pad with adequate clearances around the sides of the unit, and make sure the unit is level before securing.

Before setting/securing the unit, use this opportunity to convert the unit from a downflow configuration to a sideflow configuration if necessary. Refer to section ***C.3.5. Cover Panel Installation/Conversion Procedure.***

C.4.4.2. High Wind and Seismic Tie-Down Methods

Slab-installed units must also be secured in compliance with ASCE 7-10 and the latest Florida Building Code. Please refer to ***Appendix J: Unit Tie-Down Methods.***

C.5. Installing Condensate Drain

IMPORTANT: Install a condensate trap to ensure proper condensate drainage. See ***Figure C.5.1 - A*** for reference.

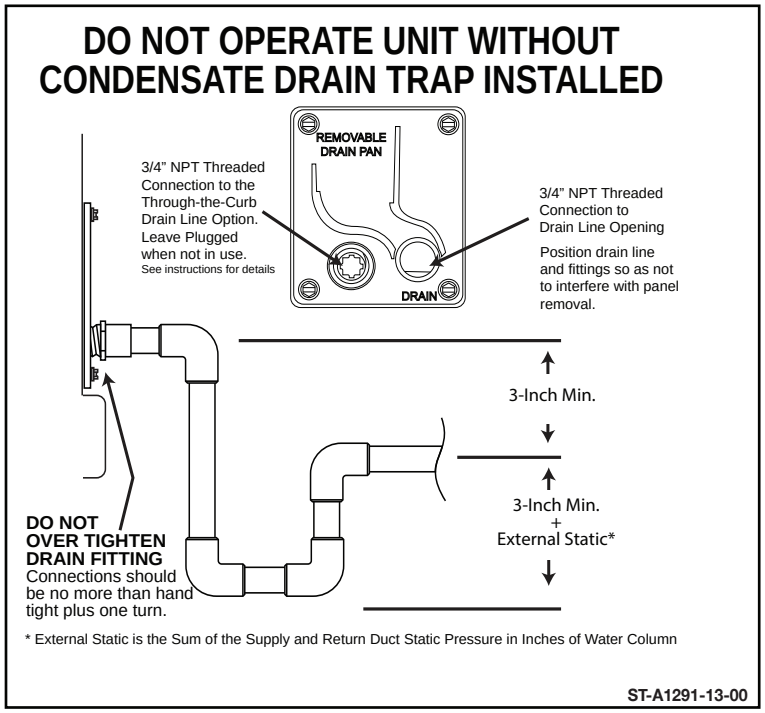
The condensate drain pan has a threaded female 3/4 inch NPT (11.5 TPI) connection. Drain line must be no smaller than drain pan outlet and adequately sized to accommodate the condensate discharge from the unit. Drain line must be routed to an acceptable drain or outdoors in accordance with local codes. Consult local codes or ordinances for specific requirements of condensate drain piping and disposal.

DO NOT connect condensate drain line to a closed sewer pipe.

C.5.1. Determine Drain Trap Height Requirement

The drain line should be a minimum of 3 inches deep, plus 1 inch for every inch of external static pressure from the blower and duct system. For Example, if the external duct static is 1 inch of water column, the drain trap from the bottom of the trap to the bottom of the drain outlet should be 4 inches, the drain outlet should be 3 inches below the drain connection on the condensate pan. Ensure the outlet of the trap is routed to a suitable drain location as required by local code. See ***Figure C.5.1 - A*** for reference.

Figure C.5.1 – A: Condensate Drain Tap



C.5.2. Keeping the condensate drain pan serviceable

To use the removable drain pan feature of this unit, some of the condensate line joints should assembled for easy removal and cleaning. Drain line **MUST NOT** block service access panels.

C.5.3. Connecting the Drain trap

- Use a thin layer of Teflon tape or paste on drain pan connections and install only hand tight.
- Do not over tighten drain pan connections as damage to the drain pan may occur.
- Drain line must be routed to an acceptable drain or outdoors in accordance with local codes.
- Drain line should slope away from unit a minimum of 1/8" per foot to ensure proper drainage.

C.5.4. Connecting the Drain to the through the curb option

The through the curb drain option is available for installations in freezing conditions or that do not want water draining on the roof. Use adapters and elbows to turn out of the drain opening on the right and into the curb drain opening on the left. Under the unit connect a ¾" male treaded fitting, use thread sealant, into the opening between the supply and return duct openings under the unit. Install a properly sized drain trap in the conditioned space of the building and route to a suitable drain location as code requires.

C. INSTALLATION OF THE UNIT

C.5.5. Freezing Condition considerations

• Drain line may need insulation or freeze protection in certain applications.

• Drain line should slope away from unit a minimum of 1/8” per foot to ensure proper drainage.

C.6. Final Installation Inspection

C.6.1. Remove Shipping Material

Before the unit is secured to the slab/roofcurb, check that all shipping material has been removed. See section ***C.4.1.*** for how to remove shipping material.

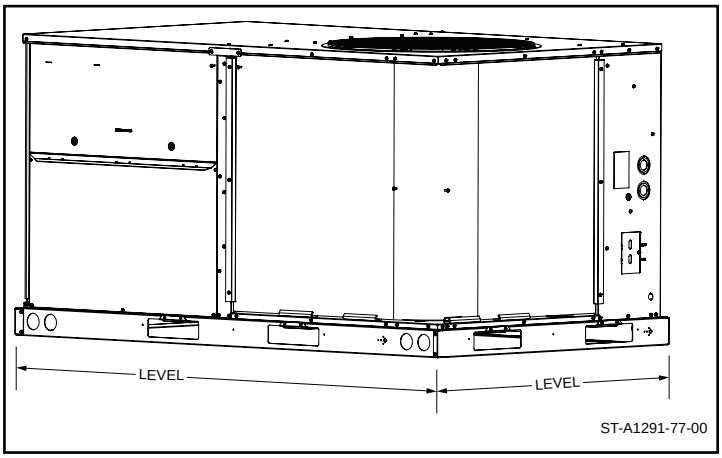
NOTE: Failure to remove the condenser coil protector on non-louver panel units will negatively impact performance and be harmful to system components. Failure to remove the cardboard basepan protector will block all indoor airflow for downflow configurations.

Open all compartments to ensure there are no tools or other misc parts remaining in the unit from setup. This is most important on the blower section to avoid damage to the blower assembly.

C.6.2. Checking Level and Slope

This unit must be mounted level in both directions to allow water to properly drain from the condenser section and condensate pan.,

Figure C.6.2. – A: Level Unit



C.6.3. Condensation and Sweating

In certain regions or climates, portions of the exterior of the unit may condensate or sweat during cooling operation. This is normal and expected. See section ***J.3. Checking and Adjusting Air Flow*** for more information.

D. DUCT AND VENTING

D.1. Air Flow and Static Pressure

See ***Appendix C*** towards the end of this manual for Air Flow Performance Data. For Air Flow adjustment and set up, see section ***J.3. "Checking and Adjusting Air Flow".***

D.2. Duct Requirements and Best Practices

The installing contractor should fabricate ductwork in accordance with local codes.

Use industry manuals as a guide when sizing and designing the duct system.

Contact Air Conditioning Contractors of America at www.acca.org

⚠WARNING: DO NOT, under any circumstances, connect return ductwork to any other heat producing device such as fireplace insert, stove, etc. Unauthorized use of such devices may result in fire, carbon monoxide poisoning, explosion, personal injury, property damage or death.

Place the unit as close to the conditioned space as possible allowing clearances as indicated. Run ducts as directly as possible to supply and return outlets. Use of non-flammable weatherproof flexible connectors on both supply and return connections at unit to reduce noise transmission is recommended.

On ductwork exposed to outside temperature and humidity, use a minimum of 2" of insulation and a vapor barrier. Distribution system in attic, furred space or crawl space should be insulated with at least 2" of insulation. Half-inch to 1" thick insulation is usually sufficient for ductwork inside the air conditioned space.

Provide balancing dampers for each branch duct in the supply system.

Properly support ductwork from the structure.

IMPORTANT: In the event that the return air ducts must be run through an "unconfined" space containing other fuel burning equipment, it is imperative that the user/homeowner must be informed against future changes in construction which might change this to a "confined space." Also, caution the user/homeowner against any future installation of additional equipment (such as power ventilators, clothes dryers, etc.), within the existing unconfined and/or confined space which might create a negative pressure within the vicinity of other solid, liquid, or gas fueled appliances.

D.2.1. Supply Duct Systems

A properly designed supply duct system, meeting all local codes and best practices, must be installed to ensure proper air flow and minimize the static pressure on the blower. The following dimensions are approximations.

The supply duct opening for roof curb installations is 12 1/8" x 17 3/4", the supply duct opening for horizontal ducted installations is 11 5/8" x 17 1/4". See ***Figure B.3.6. – A and – B*** for reference.

D.2.2. Return Duct Systems

A properly designed return duct system, meeting all local codes and best practices, must be installed to ensure proper air flow and minimize the static pressure on the blower. The following dimensions are approximations.

The return duct opening for roof curb installations is 25 5/8" x 10 7/8", the return duct opening for horizontal ducted installations is 25 1/8" x 10 1/2". See ***Figure B.3.6. – A and – B*** for reference.

Note: The installer is responsible for verifying all dimensions.

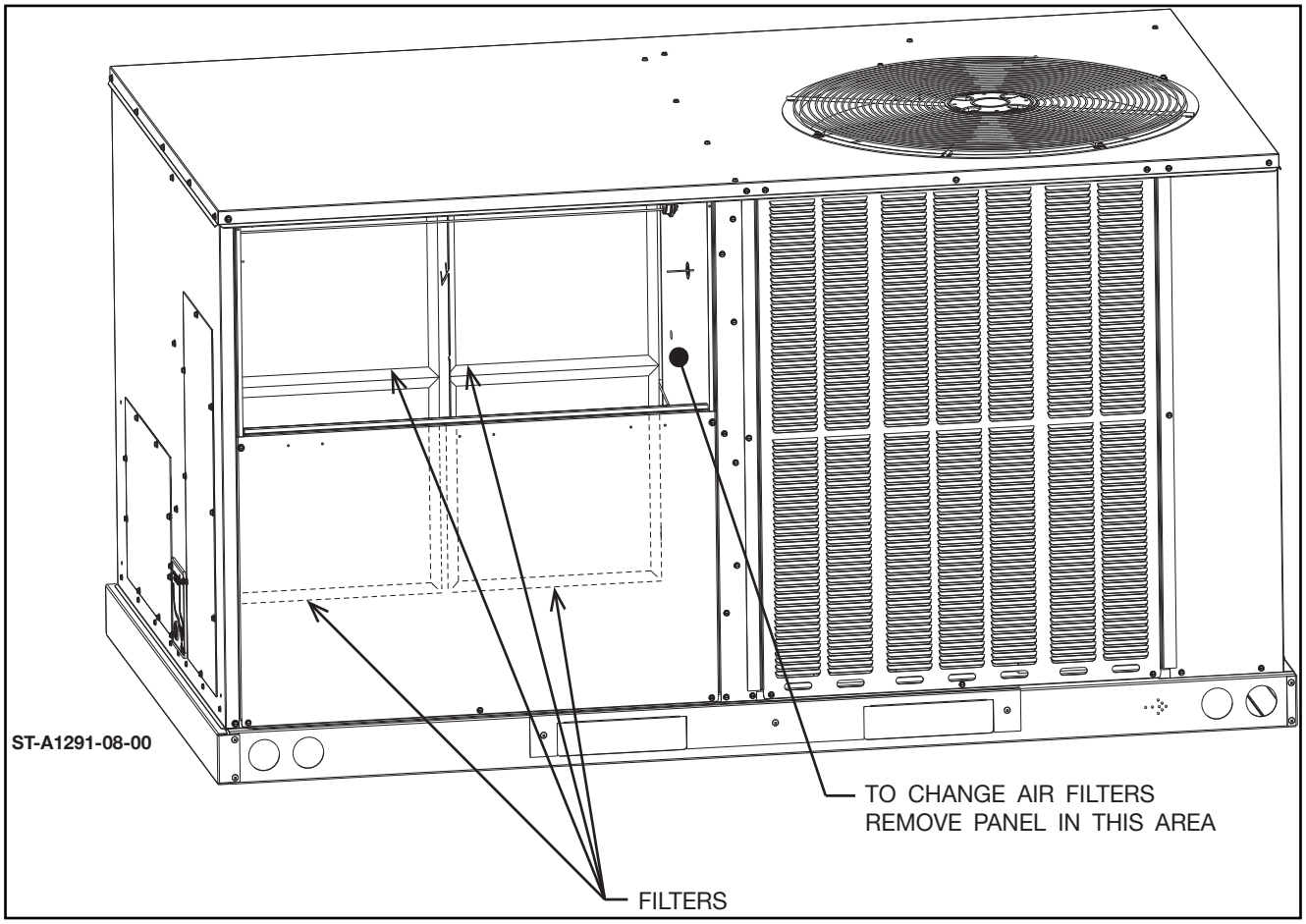
D. DUCT AND VENTING

D.2.3. Isolation for Noise abatement

Noise from operational vibration can occur with this equipment, the use of flexible duct adapters and vibration damping curb adapters maybe required depending upon the building type and use. Consult with a local mechanical engineer on the duct and building design to determine if any noise abatement solutions need to be considered before installation.

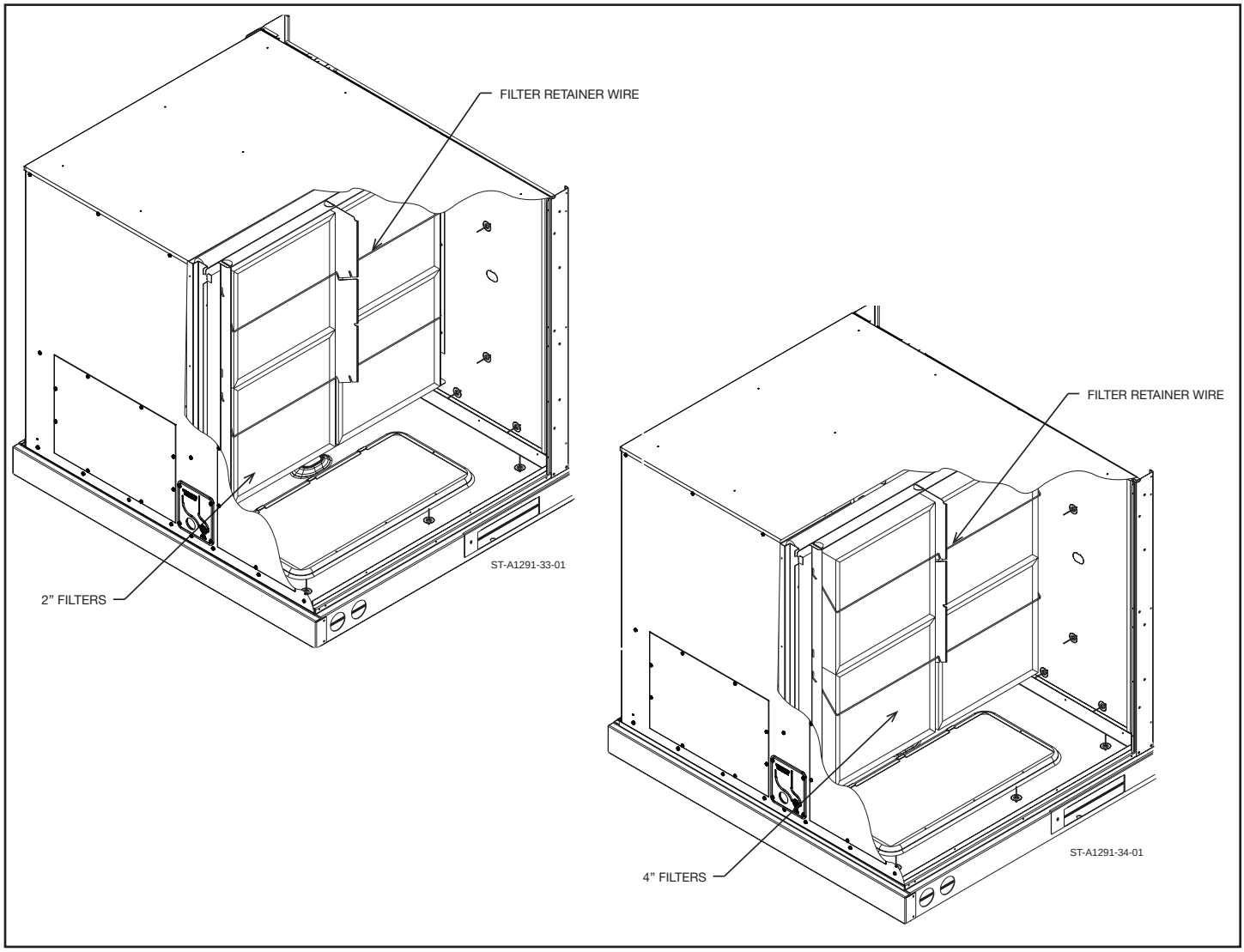
D.3. Filters

D.3.1. Installing Filters



D.3. Filters

D.3.1. Installing Filters (Cont.)



This product will accept both 2" and 4" filters. A new unit ships with four 2" x 16" x 16" filters. For units with an economizer, only use 2" filters due to fitment clearances. To replace filters, follow these steps:

1. Remove "Filter Access" panel.
2. Pull downwards on retainer wire and rotate upwards to unlock filters.
3. Secure retainer wire in notch.
4. Remove and discard current filters.
5. Install new filters with airflow arrow pointing towards evaporator coil.
6. Rotate retainer wire downward to original position and secure in notch.
7. Install "Filter Access" panel.

D. DUCT AND VENTING

D.4. Economizers and Fresh Air Dampers

D.4.1. Economizer Information

ECONOMIZERS - Mechanical devices used to make the Heating Ventilation and Air Conditioning (HVAC) unit more efficient by regulating the return air and outside air. Economizers for this product come in several configurations.

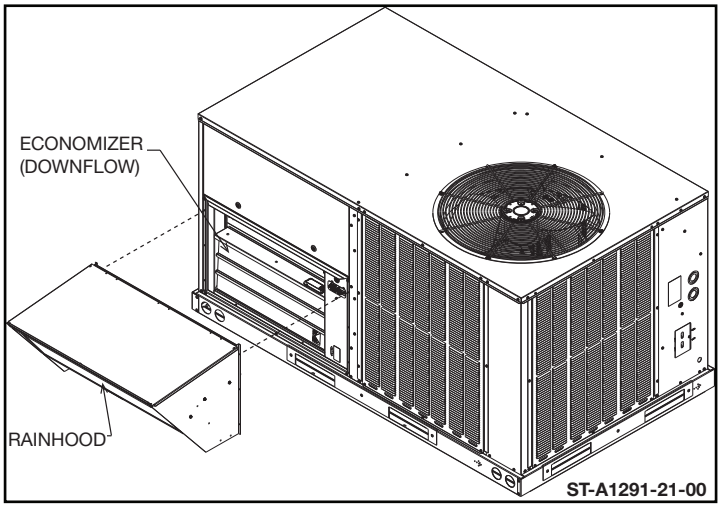
The Downflow Economizer is designed specifically for units setup in a downflow configuration. The downflow economizer fits inside the package unit and sits over the return-air opening along the bottom of the unit. All economizers are equipped with horizontal gear driven blades and a gravity relief damper (Barometric Relief).

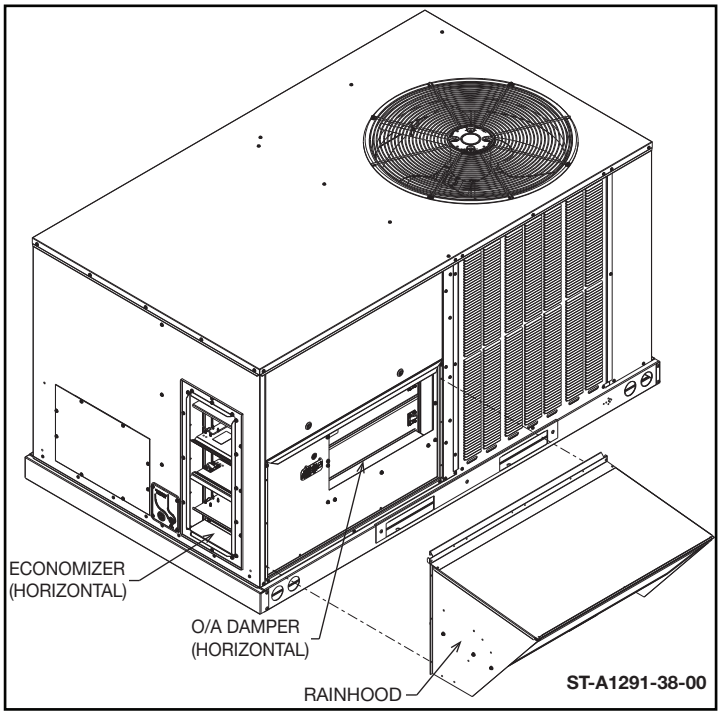
The Horizontal Economizer is designed specifically for units setup in a horizontal flow configuration. The horizontal economizer utilizes independently actuated return-air and fresh air dampers to enable the most efficient handling of air achievable with this platform. The horizontal economizer also includes an externally-mounted (to the duct work) gravity relief damper.

All units with economizers come shipped from the factory with a parts bag and a separate document for Economizer Installation & Operation instructions. Refer to that document for information on how to install the economizer, connect the controls, and adjust the airflow. Accessory economizers purchased separately will also come with the parts bag and instructional document.

For reference, the Installation Instructions for economizers may be found in the parts bag of the unit for factory installed economizers, or on the manufacturer's website for the product.

Figure D.4.1. – A: Downflow Economizer with Hood





Note: Economizer appearance may vary.

D.4.2. Fresh Air Dampers

MANUAL DAMPER HOODS – Manual damper hoods are often installed as a low cost substitute for an economizer.

The idea is to manually set the blade located inside the hood to restrict the opening by introducing Static Pressure, thereby balancing the outside air with the return air entering the RTU.

The drawback to a manual damper is that it is open 24 hours a day, 365 days a year. Therefore they introduce outside air during occupied and unoccupied modes increasing the load on the rooftop unit.

MOTORIZED DAMPER HOODS – A motorized damper is economical, and provides more comfort than a manually adjusted hood damper.

The motorized damper is coupled to an actuator, and designed to open when the RTU fan is running, and close when the fan is off. The advantage of the motorized damper is that the outside air is no longer a factor once the RTU fan is cycled off.

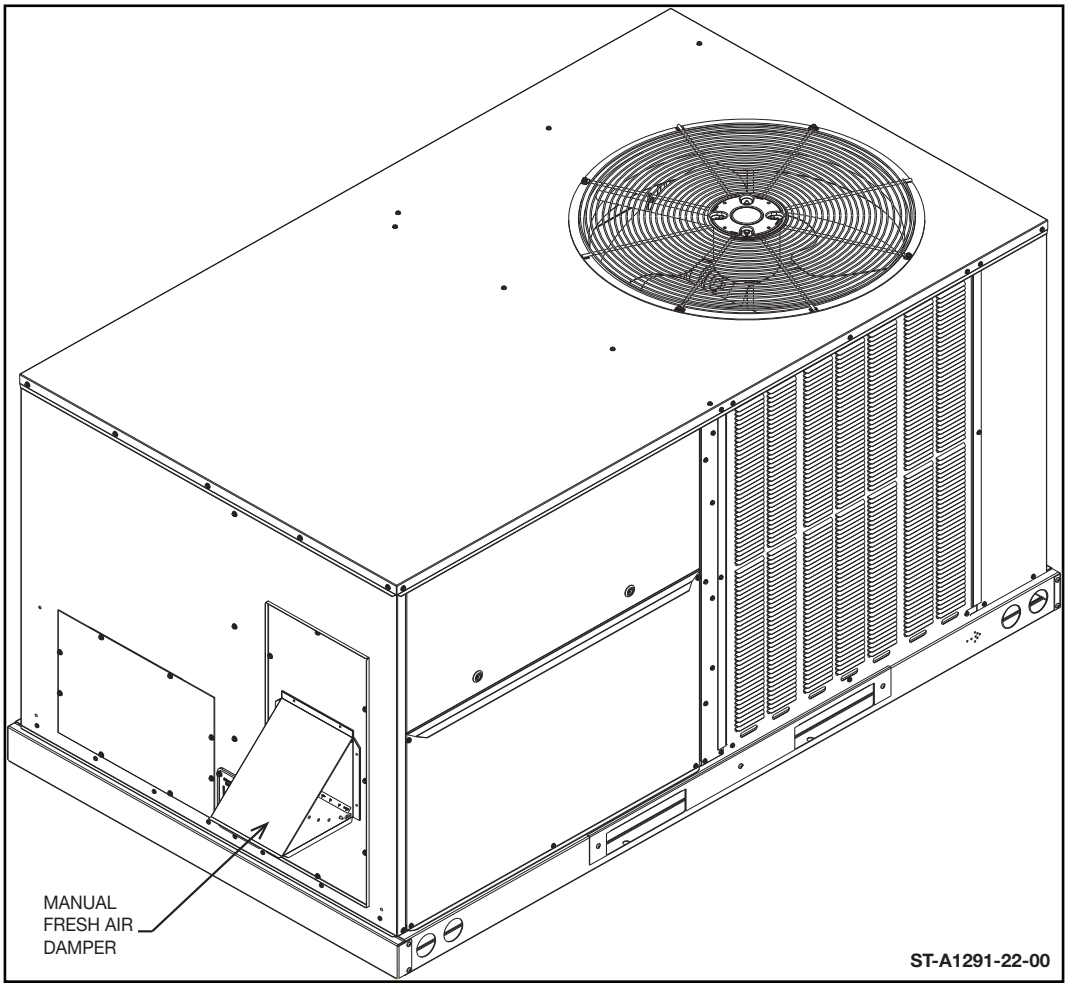
By connecting a Timer, CO2 Sensor or Smoke Detector in series between the RTU fan ("G" on the Thermostat) and actuator, the damper can be controlled during "Unoccupied" hours, or allow the damper to only introduce outside air during "On-Demand Occupancy."

Fresh Air Dampers come shipped with a separate document for Installation & Operation instructions. Refer to that document for information on how to install and adjust the dampers.

For reference, the Installation Instructions for Fresh Air Dampers may be found in the parts bag for the factory installed dampers, or on the manufacturer's website.

Note: Damper appearance may vary.

Figure D.4.2. – A: Fresh Air Damper



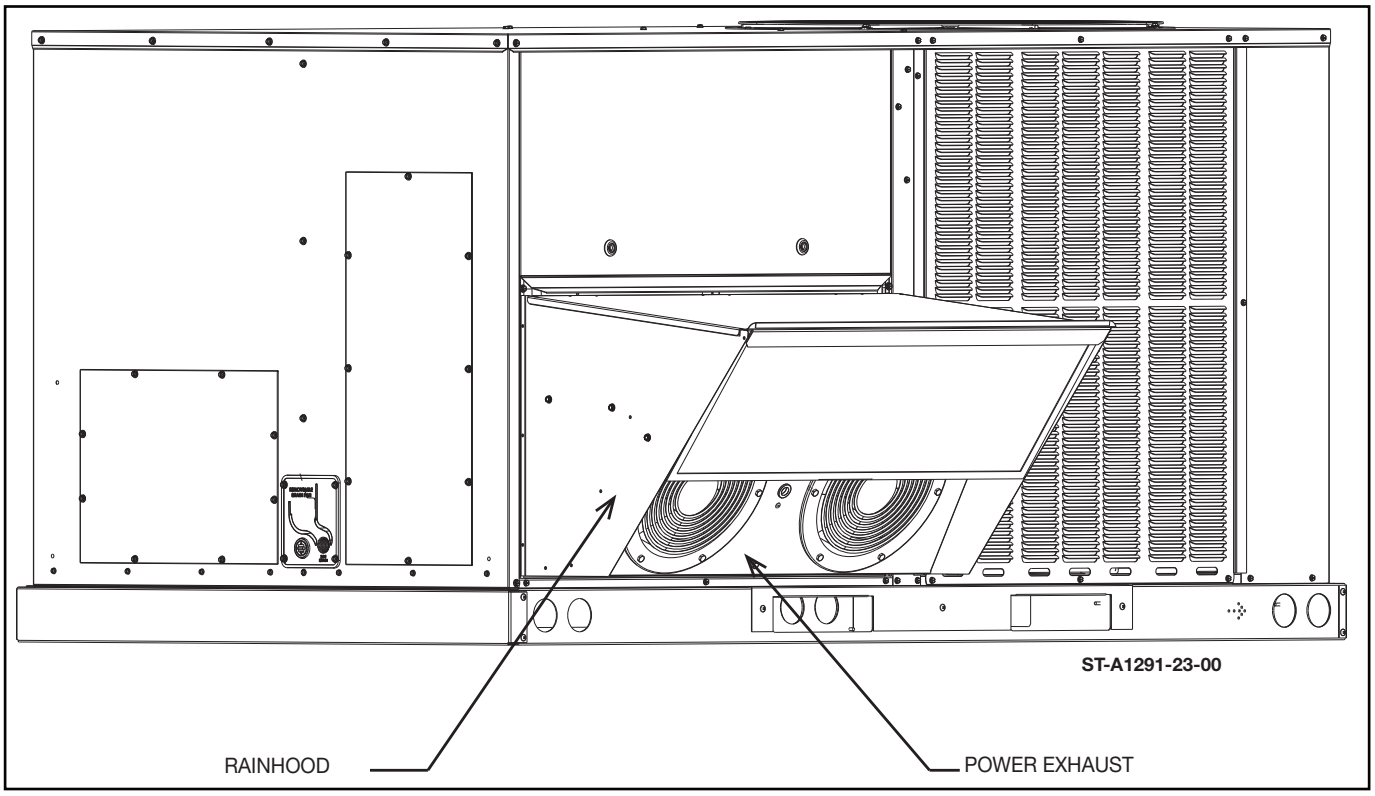
D. DUCT AND VENTING

D.4.3. Powered Exhaust

POWER EXHAUST - This accessory is a motorized fan designed to remove air from the conditioned space efficiently. While this is useful for removing a high positive pressurization, caution must be taken in the setup of the system to avoid creating a negative pressure within the conditioned space. If negative pressure occurs, leaky windows, doors, and electrical fixtures will allow the outside air to creep in causing drafts or hot sports within a room.

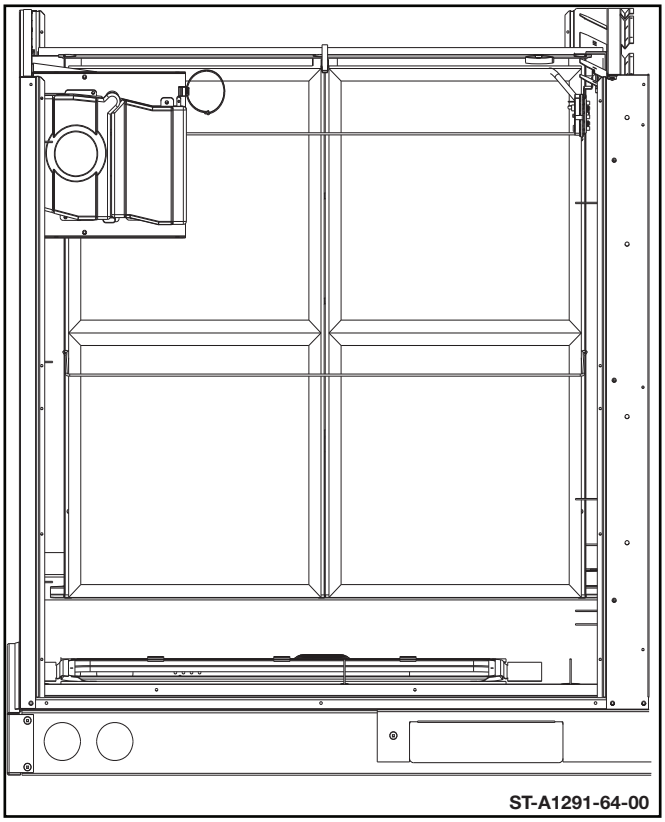
Note: Accessory appearance may vary.

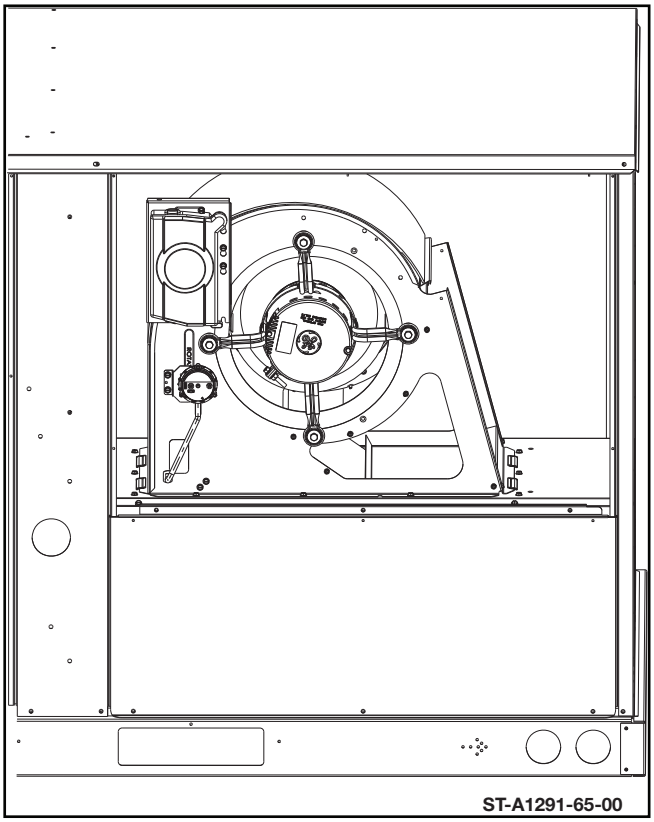
Figure D.4.3. – A: Powered Exhaust



D.5. Smoke Detectors

Figure D.5. – A: Smoke Detector Assembly





D.5.1. Supply Duct Smoke Detectors

D.5.1.1. Field Installed – Installation, Wiring and setup

Field install Supply and Return Duct Smoke Detectors come shipped with a separate document for Installation & Operation instructions. Refer to the separate Installation Instructions for installing, wiring, and setup of a supply and return smoke detector. Refer to the seperate installation instructions shipped with the accessory for wiring diagrams and addiitonal assembly instructions.

D.5.1.2. Factory Installed – Inspection and setup

Inspect the smoke detector assembly for any damage during shipping. Use ***Figure D.5. – A*** for reference. Confirm that all wiring connections are still secure. Refer to the separate Installation Instructions shipped with the smoke detector for wiring diagrams and additional assembly instructions.

D.5.1.3. Field Installed 3rd Party Smoke Detectors or Fire Control Panels

See **section F.1.2.** for the proper connection points for a remote smoke detector. **DO NOT** break 24vac to the Thermostat: shutdown will not occur. **DO NOT** break 24vac from the transformer: it can overload the smoke detector controls.

Note: Accessory appearance may vary.

E. ELECTRICAL

E.1. Electrical Safety Information

E.1.1. Information on Power Supply

⚠WARNING: Turn off the main electrical power at the branch circuit disconnect closest to the unit before attempting any wiring. Failure to do so can cause electrical shock resulting in personal injury or death.

1. All wiring should be made in accordance with the **National Electrical Code**. Consult the local power company to determine the availability of sufficient power to operate the unit. Check the voltage at power supply to make sure it corresponds to the unit's RATED VOLTAGE REQUIREMENT. Install a branch circuit disconnect near the rooftop, in accordance with the N.E.C., C.E.C. or local codes.

2. It is important that proper electrical power is available at the unit. Voltage should not vary more than 10% from that stamped on the unit nameplate. On **three phase units**, phases must be balanced within 3%.

3. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of run can be determined from the **N.E.C.** using the circuit ampacity found on the unit rating plate. Use the smallest wire size allowable in ***Figure F. – A*** from the unit disconnect to unit.

4. For through the base wiring entry reference ***Figure F.2. – A: Electrical and Piping Routing***. All fittings and conduit are field supplied for this application. Reference the chart with ***Figure F.2. – B: Hole Sizing for Conduit*** for proper hole and conduit size.

NOTES:

1. For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of run can be determined from ***Appendix B "Electrical Data"*** or the unit rating plate for circuit ampacity and the National Electrical Code to determine proper wire sizing. From the unit disconnect to unit, the smallest wire size allowable in ***Figure F. – A*** for the circuit ampacity may be used, as the disconnect must be in sight of the unit.

2. Wire size based on 75°C rated wire insulation for 1% voltage drop.

3. For more than 3 conductors in a raceway or cable, see the National Electrical Code (or C.E.C. in Canada) for derating the ampacity of each conductor.

IMPORTANT: This unit is approved for use with copper conductors only connected to unit contactor.

WARRANTY MAY BE JEOPARDIZED IF ALUMINUM WIRE IS CONNECTED TO UNIT CONTACTOR.

Special instructions apply for power wiring with aluminum conductors:

Warranty is void if connections are not made per instructions.

Attach a length (6" or more) of recommended size copper wire to the unit contactor terminals L1, L2 and L3 for three phase.

Refer to the National Electric Code (NEC) for sizing wire to elec heat / single point. See Appendix E - Heater Kit Characteristics for additional info.

Splice copper wire pigtails to aluminum wire with U.L. recognized connectors for copper-aluminum splices. Please exercise the following instructions very carefully to obtain a positive and lasting connection:

1. Strip insulation from aluminum conductor.

2. Coat the stripped end of the aluminum wire with the recommended inhibitor, and wire brush the aluminum surface through inhibitor. INHIBITORS: Brundy-Pentex "A"; Alcoa-No. 2EJC; T & B-KPOR Shield.

3. Clean and recoat aluminum conductor with inhibitor.

4. Make the splice using the above listed wire nuts or split bolt connectors.

5. Coat the entire connection with inhibitor and wrap with electrical insulating tape.

NOTE: Wiring to be done in the field between the unit and devices not attached to the unit, or between separate devices which are field installed and located, shall conform with the temperature limitation for Type T wire [63°F rise (35°C)] when installed in accordance with the manufacturer's instructions.

E.1.2. 208/240 Volt Operation and Required Adjustments

E.1.2.1.Low Voltage Transformer Tap Adjustment for 208Volt

Transformer is factory wired for 230 volts on 208-230 volt models and must be changed for 208 volt applications. See unit wiring diagram for 208 volt wiring.

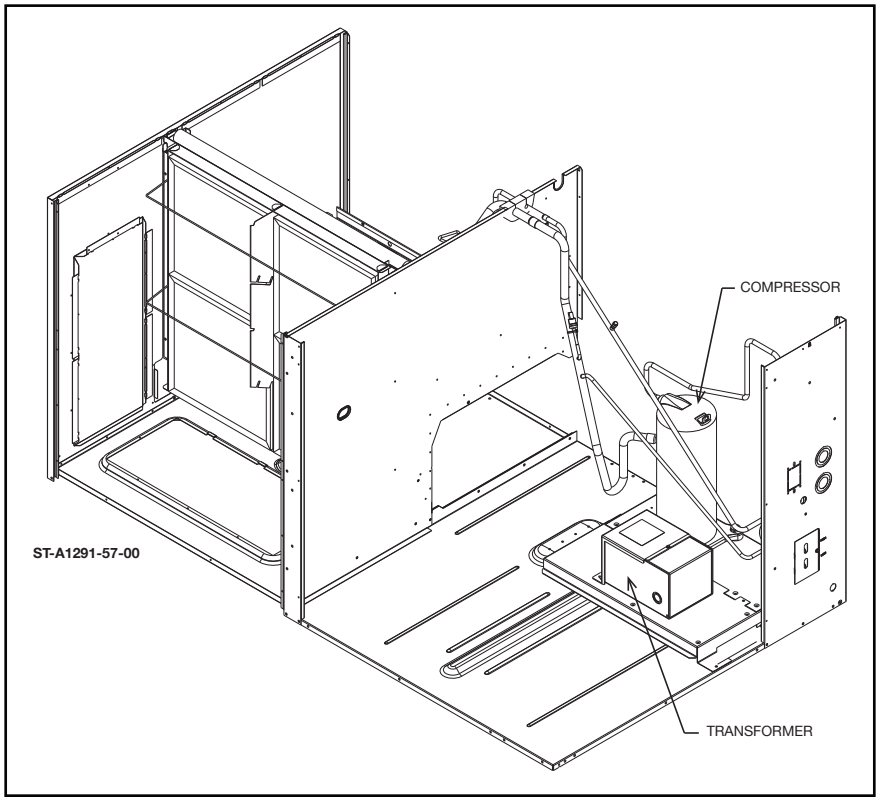
E.1.4. 460 Volt Operation

Setup for 460V units will not require any additional setup.

E.1.4. 575 Volt Operation

Setup for 575V units will not require any additional setup. There will be an additional transformer in the unit that is stored in a metal box and mounted next to the compressor. It will be pre-wired from the factory and no setup will be needed.

Figure E.1.3. - A: 575 Volt Transformer Location



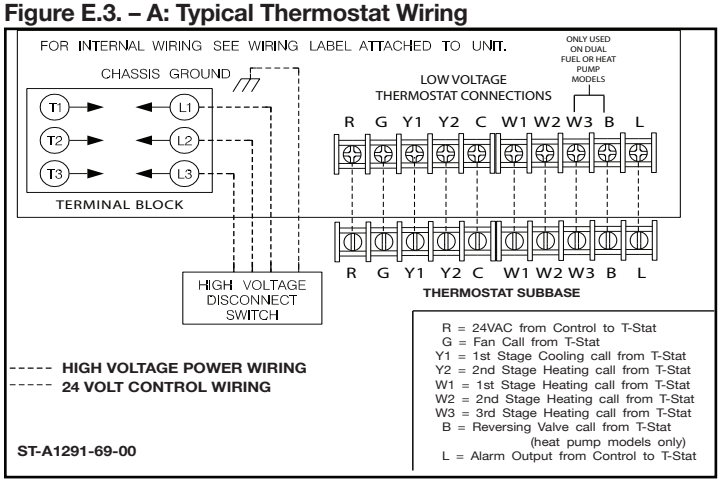
E. ELECTRICAL

E.2. Electrical Data

See ***Appendix B*** towards the end of this manual for Electric Data.

E.3. Electrical Connections

Figure E.3. – A: Typical Thermostat Wiring



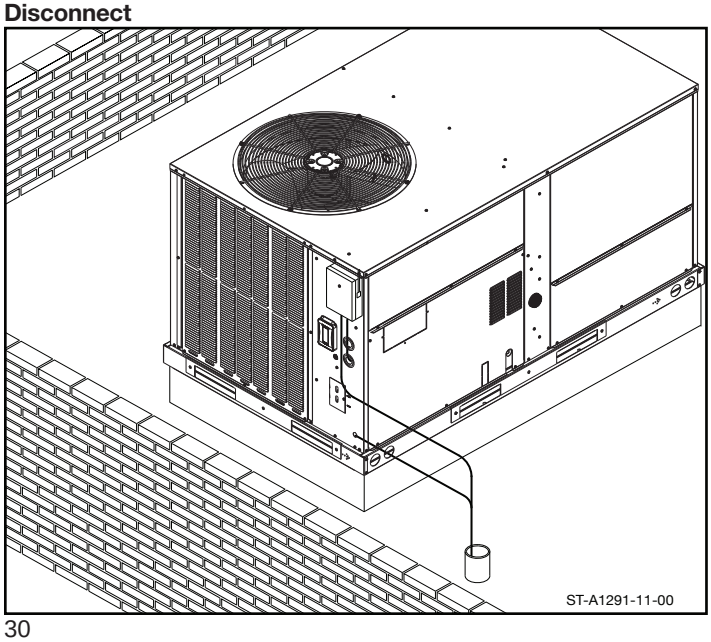
Use to ***Appendix B*** "Electrical Data" and National Electrical Code for circuit ampacity to determine proper wire sizing.

Refer to ***Figure F.2. – A: Electrical and Piping Routing*** for location of wiring entrances, and ***Figure F.2. – B: Hole Sizing for Conduit.***

E.3.1. Field Supplied Disconnect

The field supplied service disconnect will come with a separate Installation Instruction document. Please refer to that document for additional information.

Figure E.3.1.1. – A: Standard Location for Mounting Disconnect



E.3.1.1. Mounting Disconnect on Cabinet

Attach the disconnect to the top of the left hand side of the control box, above the knockouts and refrigerant test ports. Do not use screws above or below the label specifying "TO PREVENT COIL DAMAGE – DO NOT ADD SCREWS HERE, ABOVE, OR BELOW LABEL" as hidden coil and tubing could be damaged. An example of this label is shown below.

Figure E.3.1.1. – B: Label Showing Where to NOT Use Screws

E.3.1.2. Routing Wires into Cabinet

See ***Figure F.2. – A: Electrical and Piping Routing*** for conduit entry points and routing locations for wiring into the control box.

See ***Figure E.3. – A: Typical Thermostat Wiring*** for wiring to the contactor and thermostat in the control box.

E.3.1.3. Routing Wires through Curb (Option)

Use liquid tight connectors and tubing to connect the electrical and low voltage control cables between the base of the cabinet at the raised section (See ***Figure B.3.6. - A: Supply And Return Dimensions For Downflow Applications*** for location of raised section) and bottom of the control panel. Conduit and fittings must meet all applicable codes.

Use Silicon and gaskets to seal the connection at the base pan

E.3.1.4. Connecting to Contactor terminal blocks

The recommended torque for securing wiring to the contactor is **40 in-lb**.

See ***Figure E.3. – A: Typical Thermostat Wiring*** for wiring to the contactor.

E.3.2. Factory Installed Disconnect

Refer to ***Appendix G*** for the unit wiring diagrams, and to ***Figure F.2. – A*** for locations to route wires into the cabinet or through the curb/ basepan of the unit.

E.3.2.1. Routing Wires into Cabinet

Refer to section ***E.3.1.1.*** and/or section ***F.2.*** for routing wires into the cabinet with a factory installed disconnect.

E.3.2.2. Routing wires through Curb (Option)

Refer to section ***E.3.1.3.*** for routing wires through the curb with a factory installed disconnect.

E.3.3. Connecting the Convenience Outlet

E.3.3.1. Non-powered

The non-powered convenience outlet, if purchased as an option for the unit, will come shipped in a box within the blower compartment of the unit. It will need to be removed and installed into its proper configuration.

For connecting the non-powered convenience outlet and all other information, refer to the installation instructions for the accessory.

E.3.4. Checking Phase and Motor Rotation

In applications with 3-phase power, the compressor rotation can be affected and potentially run backwards depending on the wiring phase. It is recommended to use a phase rotation meter to verify the proper wiring of the supply power. Do not rely on the rotation of the blower because models equipped with a VFD or ECM drive motor will always run in the correct rotation.

E.3.4.1. Checking Phase with VFD Drive and/or Direct Drive

On any models equipped with an ECM Direct Drive Blower Motor, the motor will always rotate in the correct direction. Correction phase must be checked by the operation of the compressor.

E.3.5. Grounding Requirements

Refer to local codes as required. Must be grounded to a common earth ground.

National Electric Code (NEC) / International Building Code / Canadian Electrical Code

A diagram of the internal wiring of this unit is located on the inside of control access panel and in this manual. If any of original wire as supplied with the appliance must be replaced, the wire gauge and insulation must be same as original wiring.

The low voltage wiring should be sized as shown in ***Figure F. – A: Field Wire Size for 24v Thermostat Circuits.***

F. CONTROL / THERMOSTAT WIRING

Figure F. - A

FIELD WIRE SIZE FOR 24 VOLT THERMOSTAT CIRCUITS							
THERMOSTAT LOAD - AMPS		SOLID COPPER WIRE - AWG.					
	3.0	16	14	12	10	10	10
	2.5	16	14	12	12	12	10
	2.0	16	16	14	12	12	10
		50	100	150	200	250	300
		LENGTH OD RUN - FEET (1)					

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(1) THE TOTAL WIRE LENGTH IS THE DISTANCE FROM THE FURNACE TO THE THERMOSTAT AND BACK TO THE FURNACE.

NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

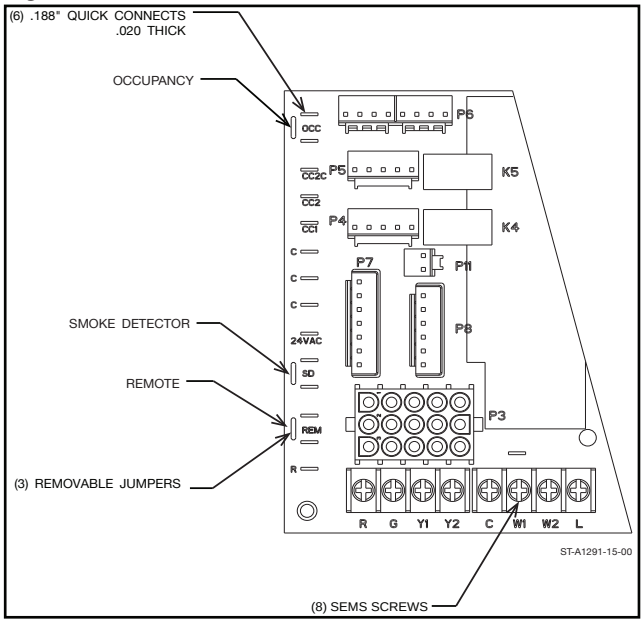
Install the room thermostat in accordance with the instruction sheet packed in the box with the thermostat. Run the thermostat lead wires through the control entry opening ***(Figure F.2. – A: Electrical and Piping Routing)*** and connect to the low voltage thermostat connections (see ***Appendix G*** for wiring diagrams and ***Section F.1.*** for T-Stat field connections). Never install the thermostat on an outside wall or where it will be influenced by drafts, concealed hot or cold water pipes or ducts, lighting fixtures, radiation from fireplace, sun rays, lamps, televisions, radios or air streams from registers. Refer to instructions packed with the thermostat for "heater" selection or adjustment.

F.1. T-Stat field connections

F.1.1. Misc. Connections

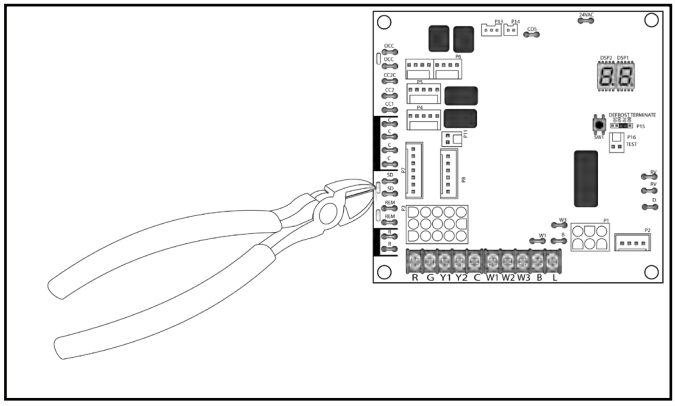
Refer to ***Appendix G*** for the unit wiring diagrams and to ***Figure E.3. – A: Typical Thermostat Wiring.***

Figure F.1.1. - A: Core Command Terminal Locations



F.1.2. Occupancy connections / Remote connections / Etc

Figure F.1.2. – A: Occupancy and Remote Connections



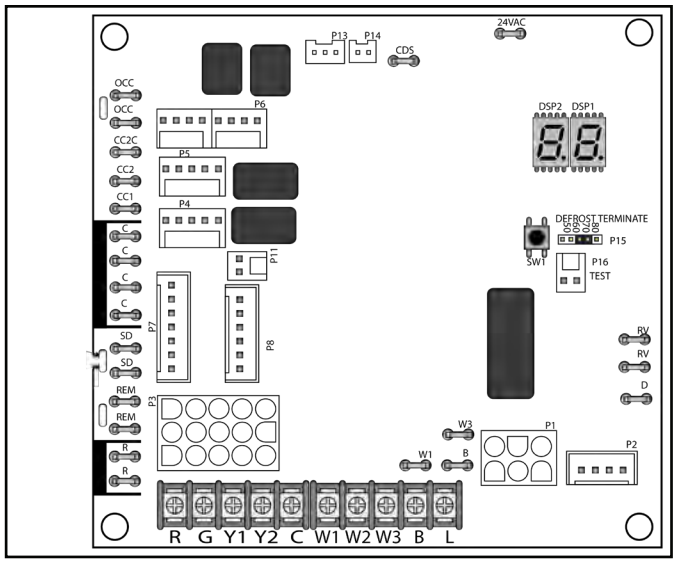
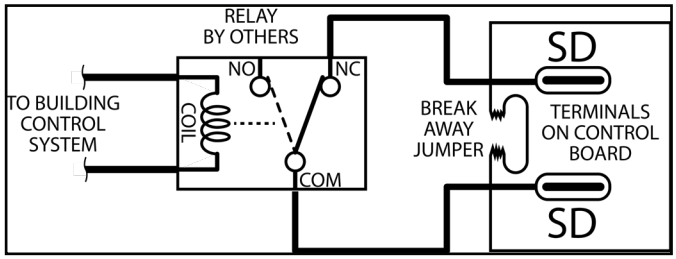


Figure F.1.2. - B: Using a Dry-Contact Relay



NOTE: This is an example of breaking the jumper for Smoke Detector connections, apply the same process for the Occupancy and/or Remote connections.

These features are only available on the Non-DDC Furnace, Heat pump, or cooling only control boards.

OCC – Occupancy Control. This feature shuts down the dampers on the economizer or motorized damper option when outdoor/fresh air is not required for the building. Locate the terminals at the left side of the board mark "OCC". See Figure ***F.1.2. – A: Occupancy and Remote Connections*** for reference.

For connecting Remote Smoke Detectors or Fire Control Panels to this control DO NOT break the 24VAC to the thermostat or from the power supply transformer. Either could cause an undesirable operating condition that would not shut the unit down in the event of an emergency situation. See the instructions for the type of control board this unit is equipped with.

Using cutters or a small screw driver, break the edge of the board between the to terminals marked with "OCC". Use 3/16" blade connector, and a minimum of 18AWG wire to connect to a Normally Closed Dry Contact Relay or Switch. Do not connect multiple control boards to the same dry contact relay or switch.

REM – Remote Shutdown Control. This feature allows the unit to be turned off remotely ignoring the thermostat calls for cooling or heat. Locate the terminals at the left side of the board mark "REM". See Figure ***F.1.2. – A: Occupancy and Remote Connections*** for reference.

Using cutters or a small screw driver, break the edge of the board between the to terminals marked with "REM". Use 3/16" blade connector, and a minimum of 18AWG wire to connect to a Normally Closed Dry Contact Relay or Switch. Do not connect multiple control boards to the same dry contact relay or switch.

F.1.3. Connecting a Smoke Detector

F.1.3.1. Core Command Connection

SD – Remote Smoke Detection. This feature allows for the proper shutdown of the controls in the event of an emergency situation. Locate the terminals at the left side of the board mark "SD". See ***Figure F.1.2. – A: Occupancy and Remote Connections*** for reference.

Using cutters or a small screw driver, break the edge of the board between the to terminals marked with "SD". Use 3/16" blade connector, and a minimum of 18AWG wire to connect to a Normally Closed Dry Contact Relay, or in common Fire Control Panels and Smoke Detectors, the Auxiliary Connections for C and NC. See the instructions for the remote devices. Do not connect multiple control boards to the same dry contact relay.

F.1.3.2. DDC Control Connection

In the air-filter section or on the side economizer, locate the 12-pin Molex jumper plug with the long Red, short Yellow and Orange wire loops; see ***Figure F.1.3.2. - A*** for reference. Cut the Red wire loop and connect these to a minimum of 18AWG wire that will be connected to a Normally Closed Dry Contact Relay, or in common Fire Control Panels and Smoke Detectors, the Auxiliary Connections for C and NC. See the instructions for the remote devices. Do not connect multiple control boards to the same dry contact relay.

F. CONTROL / THERMOSTAT WIRING

F.2. DDC Control Inputs

Figure F.2.1. - A 24VAC Thermostat Circuits

FIELD WIRE SIZE FOR 24 VOLT THERMOSTAT CIRCUITS							
		SOLID COPPER WIRE - AWG.					
THERMOSTAT LOAD - AMPS	3.0	16	14	12	10	10	10
	2.5	16	14	12	12	12	10
	2.0	16	16	14	12	12	10
		50	100	150	200	250	300
		LENGTH OD RUN - FEET (1)					

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(1) THE TOTAL WIRE LENGTH IS THE DISTANCE FROM THE FURNACE TO THE THERMOSTAT AND BACK TO THE FURNACE.

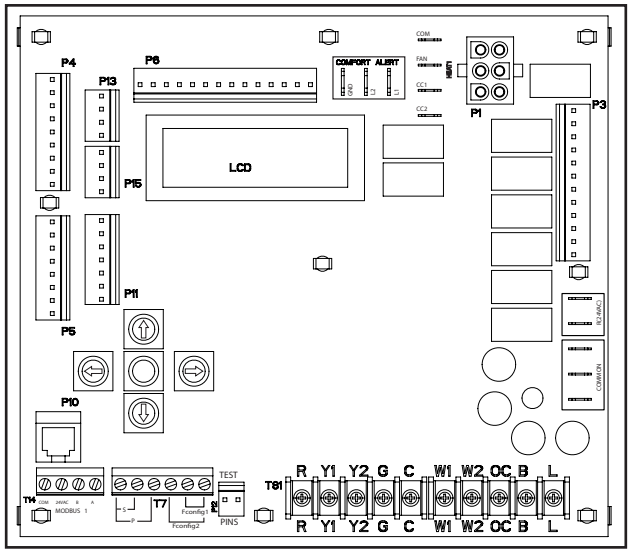
NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

F.2.1. 24VAC Thermostat Control/ Operation

The VAV unit is designed to work in conjunction with a multi-zone duct system and building management controller. If a 24VAC thermostat is going to be used instead of a multi-zone control system, the Variable Air Volume function will not operate and the unit will be controlled as a standard two-stage cooling unit. If two-stage operation is desired, the number of stages must be set to 2 in the Clear Control VAV menu.

Then, install the room thermostat in accordance with the instruction sheet packed in the box with the thermostat. Run the thermostat lead wires through the control entry opening ***(Figure F.2. – A: Electrical and Piping Routing)*** and connect to the low voltage thermostat connections (see ***Appendix G*** for wiring diagrams). Never install the thermostat on an outside wall or where it will be influenced by drafts, concealed hot or cold water pipes or ducts, lighting fixtures, radiation from fireplace, sun rays, lamps, televisions, radios or air streams from registers. Refer to instructions packed with the thermostat for “heater” selection or adjustment. \

Figure F.2.1. - B: Clear Control Terminal Locations



F.2.2. DDC Automated Stand-Alone Operation

The VAV model with Clear Control is designed to operate in a Stand-Alone operation without the use of 24VAC control thermostat or Building Management System. The system will work off the return air temperature sensor and the unoccupied and occupied heating and cooling setpoints to manage the temperature in the space. A zone sensor is optional.

F.2.2.1. Setting the Unit Up: Mode Settings

The unit will need to be configured as follows.

1. The Mode must be set to Auto. This will allow the unit to automatically switch between heating and cooling operation based on the return air temperature or space temperature sensor, if installed (See Section ***F.2.3. External Sensor Connections***).

The following Automatic Modes can be selected:

AUTO - run both heating and cooling.

Cool Only - run only cooling.

Heat Only - run only heating.

Fan Only - willo only run the fan with no heating or cooling.

2. To select the Mode, use the right arrow key to navigate to “MODE,” press the middle button and use the up and down arrow keys to select the desired operating mode for the unit, and then press the middle button to confirm. Control by Thermostat (Crtl by Tstat) is not an automatic operation mode.
3. Next the Occupancy Control must be set up. While in the Mode Menu, use the down arrow key to navigate to the Occupancy Menu option. Press the middle button to change the setting and use the up and down arrows to select the option required by the application. Then, press the middle button to confirm the setting.
   - If the system is going to run in stand-alone mode with no external inputs for Occupancy control (refer to section ***F.2.2. DDC Automated Stand-Alone Operation***), set the occupancy to “occupied.” In this setting, the system will run in a continuous occupied state and the operation of the fan will be based on the indoor fan mode. Refer to section ***F.2.2.2. Indoor Fan Mode***.

- If “unoccupied” is selected, the unit will run in a continuous state of unoccupied, and only turning on the fan when heating or cooling for the unoccupied setpoint is needed. In this mode, if a zone sensor with an override button is installed (refer to section ***F.2.3.2. Zone Sensor Occupancy Override***), then the unit can be triggered to run in an occupied mode based on the tenant override timer. The zone sensor occupancy button will also trigger an occupied state for all occupancy control modes.
- If “local switch” is selected, then the unit will look for an external 24VAC input on the OC terminal of the T8 terminal strip. This 24VAC source can be from an external time clock or building occupancy controller. When 24VAC is applied to the OC terminal, the unit will enter an occupied state of operation.
- If “network” is selected, the unit will look for an occupancy command coming from a Building Management System through the Modbus interface of the control board. Optional BACnet or LonTalk translator cards will carry this function as well.

For information on setting up the system for stand-alone operation, including preparing the unit for Building Management Control, refer to section ***F.2.2. DDC Automated Stand-Alone Operation*** and ***F.2.4. Building Management/Control Connections Using DDC***.

F.2.2.2. Indoor Fan Mode

If the unit is running in an occupied state, the system does not have to continuously run the fan. In the Mode Menu, use the down arrow to navigate to “Indoor Fan Mode.” There are two selectable options: continuous and auto-mode. Continuous will run the fan continually in the occupied more, while auto-mode will only run the fan when there is a call for heating or cooling.

In VAV installations, it is recommended that this setting remain “continuous” when occupied.

F.2.2.3. Occupancy Control External Input 24VAC

Occupancy can be triggered externally to the unit via a 24VAC input on the OC terminal of the T8 thermostat terminal strip. To connect, run the wire from the “R” 24VAC terminal and the “OC” terminal to an occupancy controller in the building. The control needs to have a dry contact relay. When the relay is closed, 24VAC will be passed to the OC terminal and trigger the unit into an occupied operating mode. When the relay is open, the 24VAC to the OC terminal will be lost and the unit will run in an unoccupied state.

F.2.2.4. Temperature Setpoints

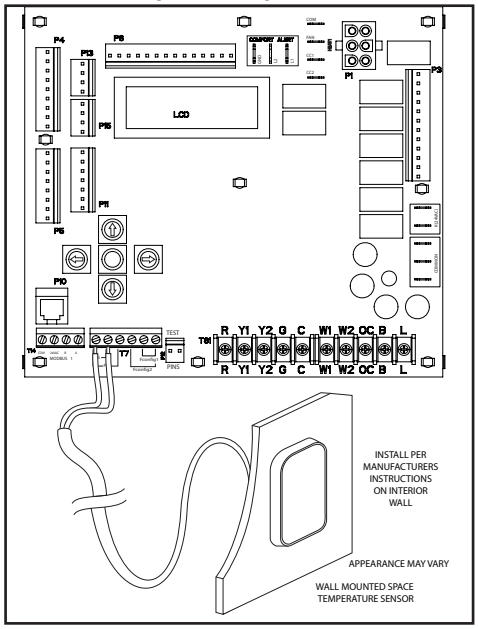
There are two temperature setpoints for occupied and unoccupied modes, heating and cooling. Using the control board’s navigation buttons, proceed to the Setpoints Menu and use the down arrow key to select “occupied or unoccupied cool and heat setpoints.” Press the middle button to select the first setpoint and use the up and down arrow to adjust the setpoint as required for the application. Then, press the middle button to confirm the setting and advance to the second setpoint. Again, use the up and down arrow keys to adjust the setting, and press the middle button to confirm this setpoint and the settings for the occupancy mode.

There is an automatic temperature differential between heating and cooling. This is adjusted and set in the “Cool Diff” and “Heat Diff” menu items.

F.2.3. External Sensor Connections

F.2.3.1. Space Temperature Sensor

Figure F.2.3.1. - A: Space Temperature Sensor



F. CONTROL / THERMOSTAT WIRING

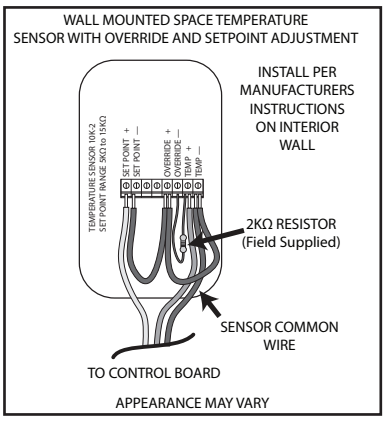
1. When using a DDC unit with Clear Control in conjunction with a Building Management System or an Automated Operational Mode, the use of a Space Temperature Sensor can greatly improve the accuracy and operation of the unit in maintaining the comfort in the space in both cooling and heating.
2. The space temperature sensor requirements is a 10k type II sensor.
3. Install the sensor on an interior wall in the space served by the packaged unit and connect the wires according to the manufacturer's instructions of the sensor type and style selected.
4. Run these wires from the sensor to the control panel of the unit.
5. After routing the sensor wires through the control panel and to the control board, strip 1/4" of insulations off the ends of the wires.
6. At the control board, locate the T7 green terminal strip. Loosen the two screw terminals marked with "S" (the two left most terminals), insert one of each of the two wires into the terminal opening on the bottom of the strip, and tighten the screw terminal. The connections are not polarity specific, either wire can be connected to either terminal, unless a setpoint adjustment option is used, they will use a shared common, the left most terminal. See the sensor manufacturer's instructions for details.
7. Verify the sensor is reading properly, power up the unit, use the left arrow key to navigate to the Temperatures Menu. Use the down arrow key to go to the space temp option, it should be showing a temperature reading. Use a test instrument to verify the air temperature at the sensor is within 1 to 3 degrees of the reading on the control board. An incorrect type sensor, excessive wire length, or bad connections will cause a significant discrepancy in the readings.
8. For more accurate operation, use the Space Temp Offset menu option to adjust the sensor reading on the Clear Control by +/-3 degrees to match the reading on the test instrument.
9. If the Clear Control is in the control by Thermostat Mode, the Space Temperature sensor will not be used for the operation of the unit.

F.2.3.2. Zone Sensor Occupancy Override

If the wall sensor has an override button for triggering occupancy, the override button needs to be set up as follows. The override trigger is looking for a 1.2 to 1.6 Ohm resistance across the space temperature sensor input. Therefore, the override button must be set to bridge the two temperature sensor wires, and provide a 2k Ohm resistor, not a dead short. A dead short across the sensor wires will trigger a fault condition.

1. Depending on the design of the sensor, some provide separate connections for the override output. If this is the case, use a short piece of wire to connect one side of the override output to one side of the temperature sensor output, and then use a 2k Ohm resistor (field-supplied) as the jumper from the other leg of the override output and the other temperature output wire.
2. Prerequisites: Occupancy Control must be set to Unoccupied, Network when controlled through a BMS or Local Switch and there is a 24VAC Input on the OCC terminal, such as using a time based controller. Units set to "Occupied" in the Occupancy Menu, the override button will have no effect, since the button triggers occupancy.
3. To adjust how long the override lasts, navigate to the Time Delays Menu and use the down arrow to select the Tenant Override Timer (Ten Ovr. Time), press the middle button to adjust the time between the required range of 2 to 6 hours.

Figure F.2.3.2. - A: Common Sensor Back Plane - Setpoint and 2k Override.



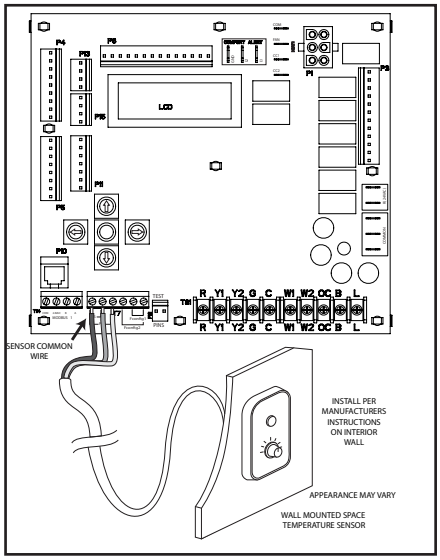
F.2.3.3. Set-Point Adjustment

In an Automatic Operation Mode or controlled by a BMS, a zone sensor with a setpoint adjustment is can be used to vary or adjust the setpoint temperature for the space that the unit is serving. This does require some specific setup to configure the operation and limitations for the adjustment range.

The zone sensor must have a setpoint adjustment range of 5k or 15k Ohms of resistance to provide the 55°F to 90°F set point adjustment range. Zone control devices with other resistance ranges are not compatible and will not function properly with the Clear Control and can cause operational errors or shutdown.

At the control board, locate the T7 green terminal strip. Loosen the two screw terminals marked with “P” (the left most and third from the left terminals), insert one of each of the two wires into the terminal opening on the bottom of the strip and tighten the screw terminal. The connections are polarity specific, and commonly connected with a temperature sensor. The setpoint adjustment and temperature sensor will use a shared common, the left most terminal. Refer to the sensor manufacturer’s instructions for details for connections at the sensor.

Figure F.2.3.3. - A: Space Temperature with Setpoint



Once the sensor is connected and installed, power up the unit. The following menu items need to be setup and adjusted according to the requirements for the application.

Prerequisites, the unit must be set up in Automatic Mode or configured to operate with a Building Management System. The setpoint adjustment will not function if the unit is set to “Control by Thermostat.”

1. Power on the unit and proceed to the Setpoints Menu. Use the down arrow key to navigate to the Setpoint Adjust Enable (Stpnt Adj Enable) menu item, press the middle button, and use the up or down arrow key to select “Enable,” press the middle button again to confirm.
2. At the remote sensor, adjust the setting to the middle position and notate the temperature value. Commonly, it is 76°F, but this reading may vary by manufacturer. See their instructions on determining the middle temperature value.
3. At the Clear Control, navigate to the Setpoint Adjust menu item, press the middle button, and use the up and down arrows to select the temperature that the remote sensor is set to. Then, press the middle button to confirm the setting. This set is important to ensure that adjustment and control setpoint temperature align, especially with remote sensors that have a display or marked temperature value.
4. Navigate to the Set Cool Limit menu item. This setting allows the installer to limit the lowest cooling setpoint allowed. Press the middle button and use the up and down arrows to adjust as required by the application, press the middle button to confirm the setting. The range is 55°F to 89°F.
5. Navigate to the Set Heat Limit menu item, this setting allows the installer to limit the highest heating setpoint allowed. Press the middle button and use the up and down arrows to adjust as required by the application. Then, press the middle button to confirm the setting. The range is 56°F to 90°F.

F.2.3.5. Duct Temperature Sensor VAV

For proper supply air temperature control, it is recommended that a remote, duct temperature sensor be installed with the VAV system. This will allow the control to monitor the air temperature and automatically adjust the cooling capacity as needed. The system, by default, will operate off the internal discharge air temperature sensor, which is in the blower compartment before the heating section.

F. CONTROL / THERMOSTAT WIRING

The duct temperature sensor should be a probe type, 10k type II sensor (The BAPI HVAC part: BA/10k-2-D-4"-NM-10' duct probe sensor is recommended). The sensor should be installed in the supply air duct near the static pressure tap location, refer to ***Figure D.6.2.1. Supply Duct Pressure-tap Location***. Follow the sensor manufacture's instruction for installation. In some applications, it may be necessary to extend the wires to reach the control board, use a minimum 18awg thermostat type wire.

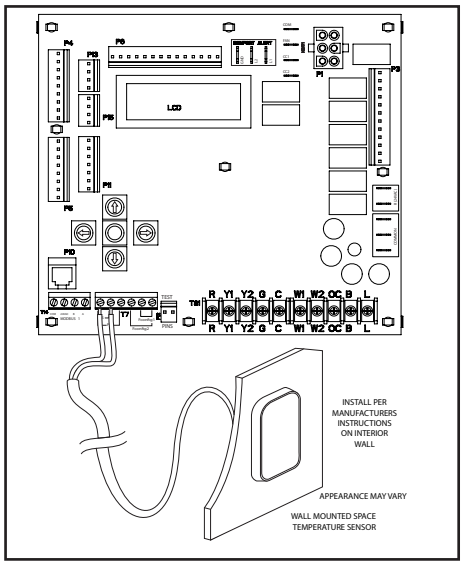
After routing the sensor wires through the control panel and to the control board, strip 1/4" of insulation off the ends of the two wires.

At the control board, locate the T7 green terminal strip. Loosen the two screw terminals marked with "Fconfig1" (the two right most terminals), insert one of each of the two wires into the terminal opening on the bottom of the strip and tighten the screw terminal. The connections are not polarity specific: either wire can be connected to either terminal.

Verify the sensor is reading properly, power up the unit, use the left arrow key to navigate to the Temperatures Menu. Use the down arrow key to go to the Fld Config 1 option, it should be showing a temperature reading. Use a test instrument to verify the air temperature at the sensor is within 1 to 3 degrees of the reading on the control board. An incorrect type sensor, excessive wire length, or bad connections, will cause a significant discrepancy in the readings.

Power the unit up. Using the menu buttons, use the right arrow to scroll to the VAV Menu, ensure that the VAV Mode is available and enabled. Other prerequisite's are: VAV Zoning must be enabled, Staging Mode must be set to 55 C1/+V1/C2/+c1, Mode must be set to Auto or Cooling Only. Use the down arrow key to scroll to the Use FLD Config 1 option, press the middle button and use the up or down arrow to select "Enabled" and press the middle button to confirm. The control will now use the new sensor to monitor the supply air temperature sensor.

Figure F.2.3.5. - A: Remote Duct Sensor



F.2.4. Building Management/ Control Connections Using DDC

In an application where a third party building management/controls are in use or will be incorporated, units with the integral Rooftop Unit Controller (RTU-C) are communication compatible with the system that supports the BACnet Application Specific Controller device profile, LonMark Space Comfort Controller functional profile, or LonMark Discharge Air Controller functional profile. This is accomplished with a field installed BACnet or LonMark communication module. Refer to the Clear control/DDC manual for more detail.

F.2.5. Smoke Detection Shutdown

The DDC system is designed with an option to trigger and shutdown the unit during a Smoke Fault Condition, as triggered by a factory smoke detector. See the following two sections for more information.

The operation of the smoke fault system can be changed dependent on what is required by the application. Navigate to the Economizer Menu and use the down arrow key to select the Smoke Detection option. The passcode, 5555, is required. Enter the password, press the middle button, use the up arrow to set the first digit to 5, then press the middle button to confirm and move to the next character. Repeat until all 4 characters are entered. If successful, "Access Granted" will display. Then press the down arrow to select Smoke Options. These options will change the operation as follows:

Shutdown - Stops all operations and turns off the indoor fan.

Pressurize - Ramps the VFD to full speed, opens the economizer up 100%, stops all heating and cooling functions.

Purge - Ramps the VFD to full speed, opens the economizer up 100%, turns on the power exhaust, stops all heating and cooling functions.

Purge with Heat - Ramps the VFD to full speed, opens the economizer up 100%, turns the heating system on full capacity.

Exhaust - Stops all operations, cooling, heating, and indoor fan, opens the economizer up 100% and turns on the power exhaust system.

F.2.5.1. Factory Smoke Detector Kit

If a field or factory installed factory smoke detector kit is used, the kit contains a wiring harness that connects to the 12-Molex plug in the economizer section in place of the 3-wire jumper plug. Retain the jumper plug for future service or maintenance. Use a zip tie to secure the jumper plug to the main wiring harness. Remote fire control panels or other options for the smoke detector will connect directly to the smoke detector controls. Refer to the instructions with those accessories for more information.

F.2.5.2. Remote Smoke Detector/Fire Control Connection

In the air-filter section or on the side economizer, locate the 12-pin Molex jumper plug with the long Red, short Yellow and Orange wire loops; see ***Figure F.2.5.2. - B*** for reference. Cut the Red wire loop and connect these to a minimum of 18AWG wire that will be connected to a Normally Closed Dry Contact Relay, or in common Fire Control Panels and Smoke Detectors, the Auxiliary Connections for C and NC. See the instructions for the remote devices. Do not connect multiple control boards to the same dry contact relay.

Figure F.2.5.2. – A: Wiring Harness location in Air-Filter Section

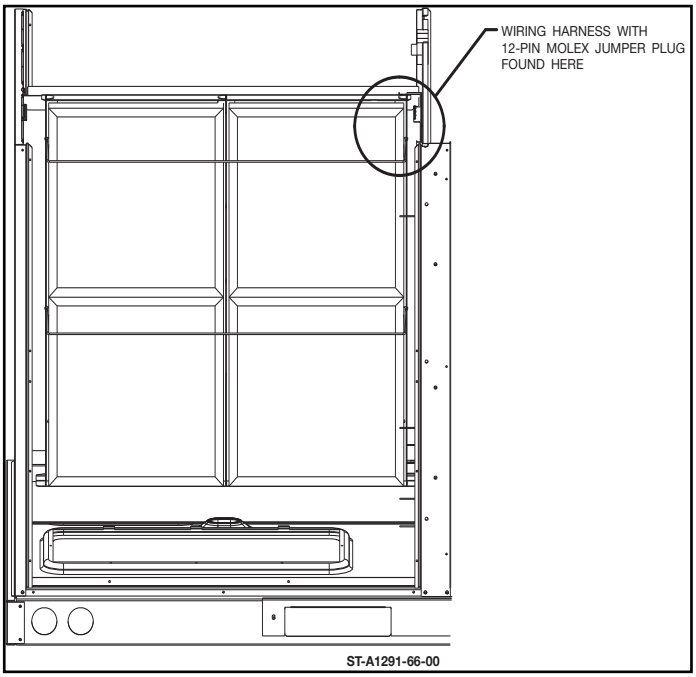
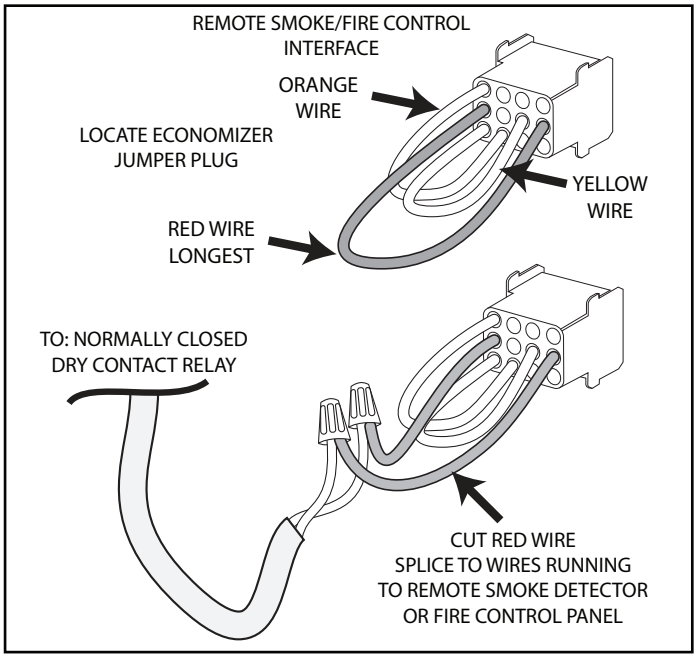


Figure F.2.5.2. – B: Smoke Detector Connection (DDC)



F. CONTROL / THERMOSTAT WIRING

F.2. Routing Control wiring

Figure F.2. – A: Electrical and Piping Routing

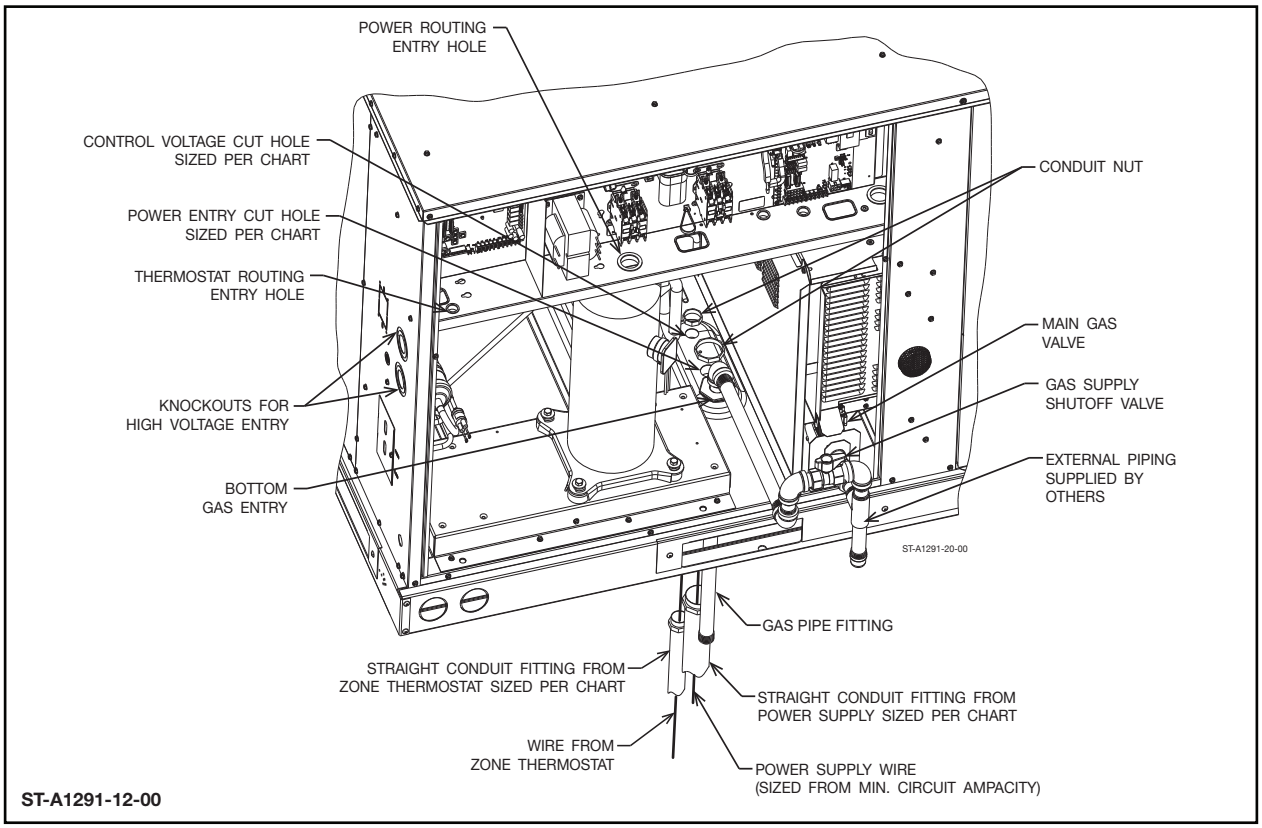


Figure F.2. – B: Hole Sizing for Conduit

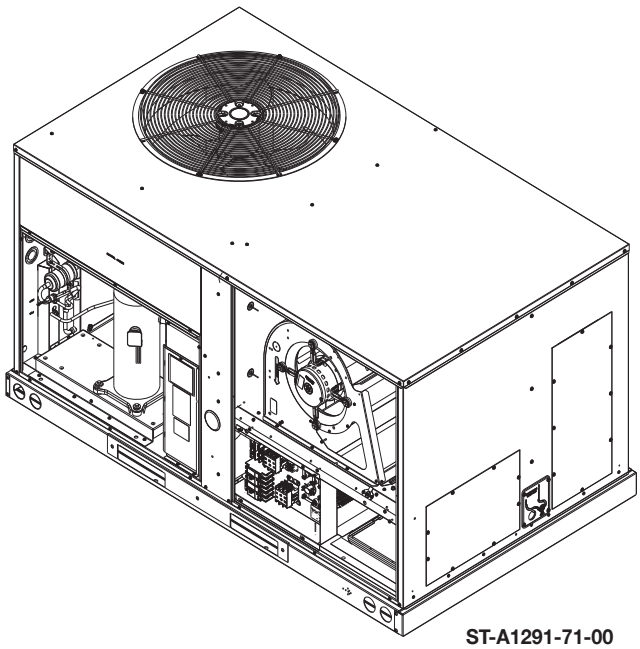
	WIRE SIZE, AWG											
	14	12	10	8	6	4	3	2	1	0	00	000
CONDUIT SIZE	1/2"	1/2"	1/2"	3/4"	1"	1"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"
HOLE SIZE	7/8"	7/8"	7/8"	1-31/32"	1-23/64"	1-23/64"	1-23/32"	1-23/32"	1-31/32"	1-31/32"	2-15/32"	2-15/32"

NOTES: 1. DETERMINE REQUIRED WIRE SIZE FROM MINIMUM CIRCUIT AMPACITY SHOWN IN INSTALLATION & OPERATING INSTRUCTION.
2. BOTTOM POWER ENTRY WILL NOT ACCOMMODATE WIRE LARGER THAN #2 AWG (SHADED AREA).

F.3. Measuring Control Voltage Loads

Use a voltmeter to measure the low voltage and low voltage amp draws during operation. Accessories such as remote smoke detectors and excessive wire length can increase the amp draw on the low voltage wiring. Verify that the total amp draw on the 24Vac side is less than 0.3A in full operation.

Figure H. - A: Electric Heat with Single Point Wiring



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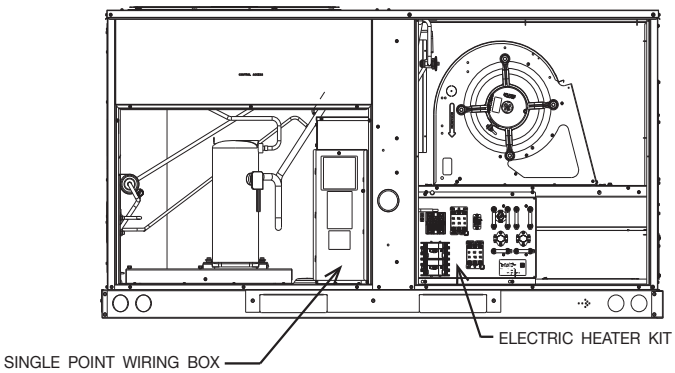

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H.1. FACTORY INSTALLED ELECTRIC HEAT

Units shipped with factory installed electric heat will come with a separate document (included in the parts bag) with details regarding the electric heater kits. Refer to this document for diagrams and additional info. Refer to ***Appendix E*** for heater kit characteristics such as Minimum Circuit Ampacity and Max Fuse sizes.

H.2. FIELD INSTALLED ELECTRIC HEAT

Electric heater kits will be shipped with their own installation document in the box. Use the instructions supplied with the kit for best practice. Install all electric heat kits in accordance with the National Electric Code. Refer to ***Appendix E*** for manufacturer-approved heater kit characteristics such as Minimum Circuit Ampacity and Max Fuse sizes.

J. STARTUP AND OPERATION

J.1. Final Inspection

J.1.1. Check for Refrigerant Leaks

Inspect the unit for any damage to the coils and tubing that could cause a leak.

J.1.2. Check Level of Unit

Refer to ***Section C.6.2.*** for setting/checking the level of the unit.

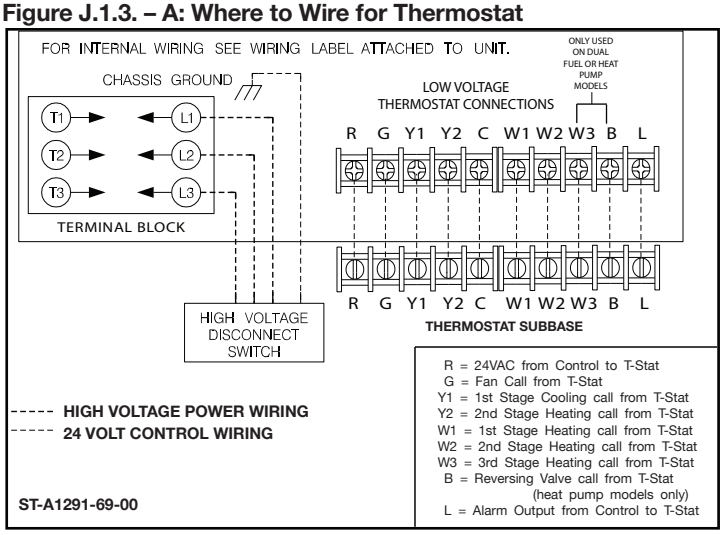
J.1.3. Check Electrical Connections For Proper Torque

Use an Inch Pound rated torque wrench to ensure proper torque. DO NOT CONFUSE THIS WITH A FOOT POUND RATED WRENCH, Damage will occur.

Recommended torques for securing wiring:

- To the contactor: 40 in-lb.
- From the T-stat to the control board: 8.0 in-lb.

Figure J.1.3. – A: Where to Wire for Thermostat



J.1.4. Check Control Cables For Proper Connection

Verify all cables are seated and connected in the unit as some might come loose during shipping and transport.

J.1.5. Check Filter Installation

Verify that filters are seated and oriented correctly in the unit as some might come displaced during shipping and transport. Refer to ***Section D.3.*** for more information on filters and filter installation.

J.1.6. Check Condensate Drain installation

Verify the Condensate Drain Trap is a minimum of 3 inches deep, plus the Blower Fan Static Pressure. Verify the Outlet of the drain trap is a minimum of 3 inches below the outlet of the drain pan. Ensure the outlet of the trap is routed to a suitable drain location as required by local code. Refer to ***Section C.5*** and ***Figure C.5.1*** – A for more information.

J.1.7. Check Blower Compartment for Accessories

Open all compartments to ensure there are no tools or other misc parts remaining in the unit from setup. This is most important on the blower section to avoid damage to the blower assembly.

J.2. Turning on Power for the First time

J.2.1. Checking for Proper 3-Phase Voltage

Verify that proper power has been supplied to the unit. This is critical for correct operation of the compressor.

J.2.2. Check For Proper Phase

In applications with 3-phase power, the compressor rotation can be affected and potentially run backwards depending on the phase wiring. It is recommended to use a phase rotation meter to verify the proper wiring of the supply power. Do not rely on the rotation of the blower because models equipped with a VFD or ECM drive motor will always run in the correct direction.

J.2.2.1. Standard Blower Rotation

As a reminder, all units with an ECM-drive blower motor will have the correct rotation even if the phase to the unit is wired incorrectly. See ***Section E.3.4. Checking Phase and Motor Rotation*** for more information.

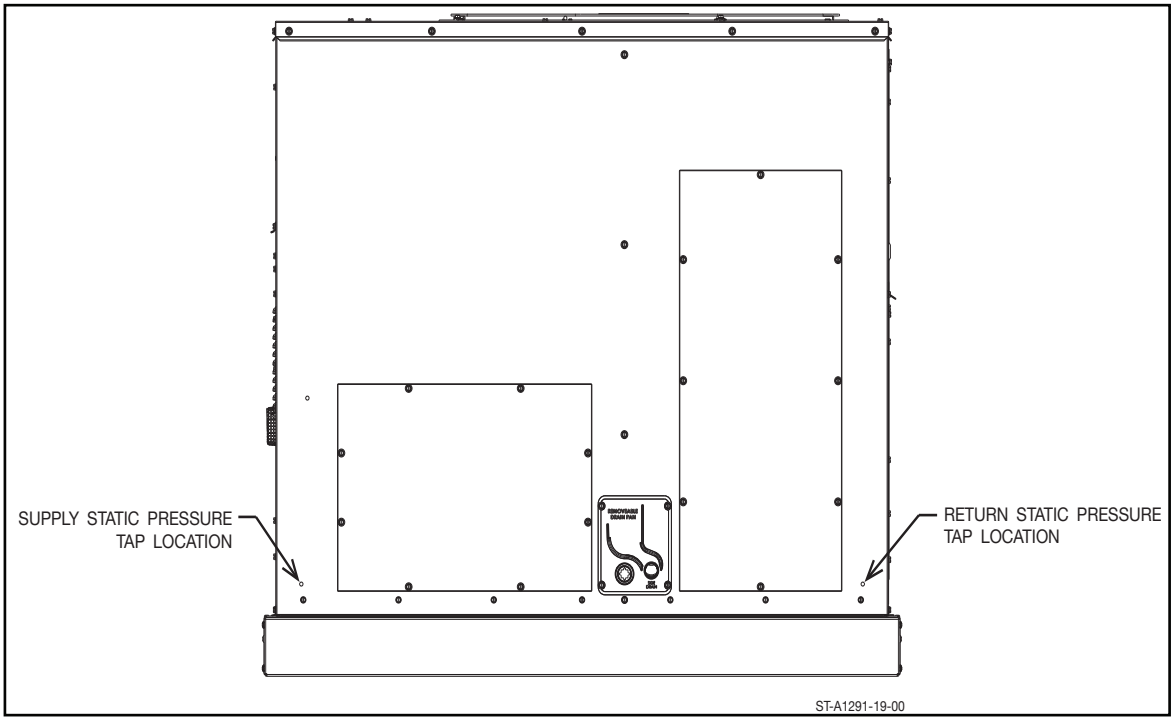
J.2.3. Checking Low (Control) Voltage

Use a voltmeter to measure the low voltage and low voltage amp draws during operation. Accessories such as remote smoke detectors and excessive wire length can increase the amp draw on the low voltage wiring. Verify that the total amp draw on the 24Vac side is less than 0.3A in full operation. Refer to ***Figure F. – A*** for proper low voltage wire lengths.

J.3. Checking and Adjusting Air Flow

For Economizer and Diffuser Pressure Drop Data, please refer to the end of ***Appendix C: Airflow Performance Data.***

Figure J.3. – A: Static Pressure and Air Temp Measurement Location



J.3.1. Static Pressures and Measurements

• To measure the static pressure of the system, locate the static pressure testing dimples near the supply/return duct openings, and drill a hole to the size necessary for the test probe. The location of these dimples are shown in ***Figure J.3. - A.***

• NOTE: After taking airflow measurements, seal these openings per best practice to prevent airflow leakage and water entry into the unit.

• NOTE: Drilling test tap locations in other panels or doors could put the test probe in a turbulent zone providing false readings.

J.3.1.1. Using Tools

Use a manometer to measure the static pressure of the blower. Insert the meter probe into the tap location. Make sure any economizer or outside air dampers are closed and run the fan at the maximum, full speed setting. Record the reading for the return air and supply air separately.

J.3.2. Air Flow Measurements and Adjustments

• Measure the supply/return static to get the unit static pressure by drilling out the dimple locations shown in ***Figure J.3. - A.***

• Take the measured static pressure and match to the static listed on the airflow table to find your CFM.

J.3.2.1. 3 to 5 ton Models - High or Low Static Drive

This adjustment only affects the fan speed during cooling operation and does not change the airflow for fan only or heating.

For non-DDC units, the unit ships standard with the orange wire (wire 607) with a quick-connect toward the control board-end of the harness.

If more airflow is needed, unplug the orange wire, and reattach it to the T-connection on the yellow wire (wire 608). Refer to ***Figure J.3.2.-A***.

For DDC units, the unit ships with the orange wire for the indoor fan connected to the CC2 terminal on the board.

If more airflow is needed, remove the wire from CC2 and connect it to the CC1 terminal. Reconnect the yellow CC1 wire to the piggyback connection of the orange wire now on CC1. Refer to ***Figure J.3.2. -B***.

J. STARTUP AND OPERATION

Figure J.3.2. – A: How to Increase Airflow for 3 to 5 ton Non-DDC Units

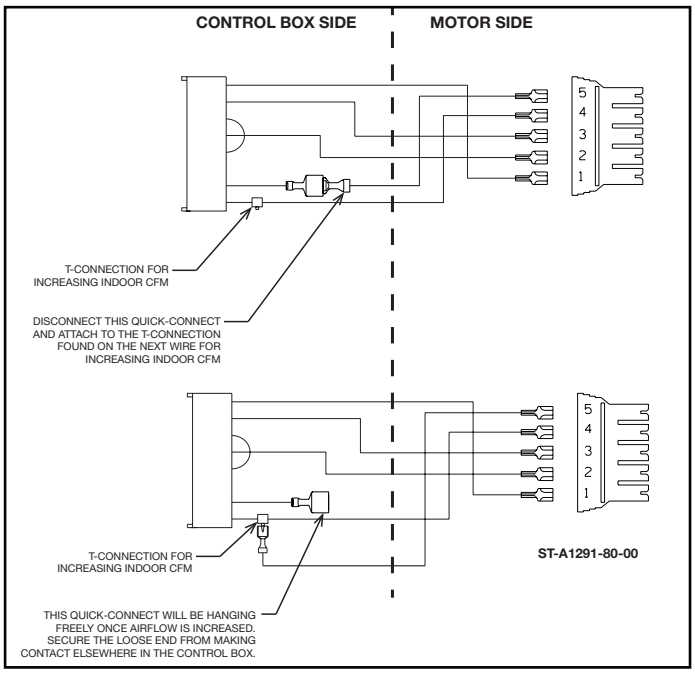
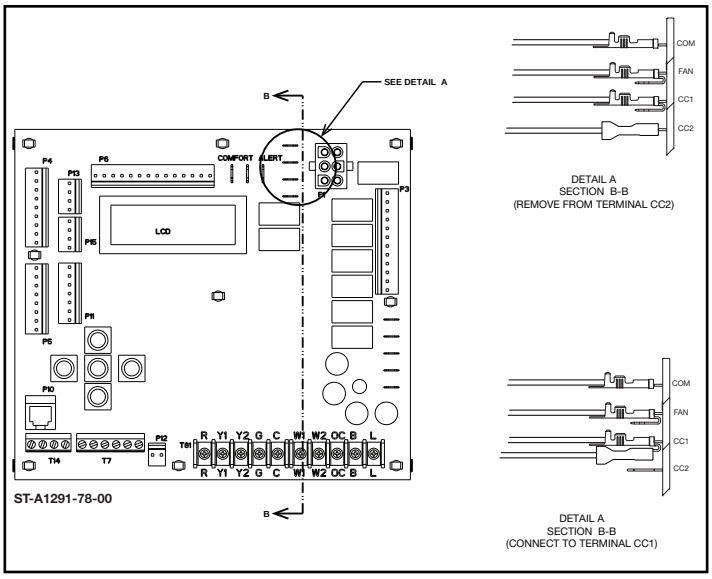


Figure J.3.2. – B: How to Increase Airflow for 3 to 5 ton DDC Units



J.3.2.2. 6 ton Models - High or Low Static Drive

This adjustment only affects the fan speed during second stage cooling operation, and does not change the airflow for fan only, any heating stage, or the first stage cooling call.

For non-DDC units, the unit ships standard with the purple wire with a quick-connect toward the control board-end of the harness, disconnected.

If more airflow is needed, attach the purple wire to the T-connection on the orange wire (wire 607). Refer to ***Figure J.3.2.-C.***

For DDC units, the units ships standard with the purple wire with a quick connect toward the control board-end of the harness, disconnected.

If more airflow is needed, connect the purple wire to the piggyback connection of the orange wire on CC2. Refer to ***Figure J.3.2.-D***.

Figure J.3.2. – C: How to Increase Airflow for 6 ton Non-DDC Units

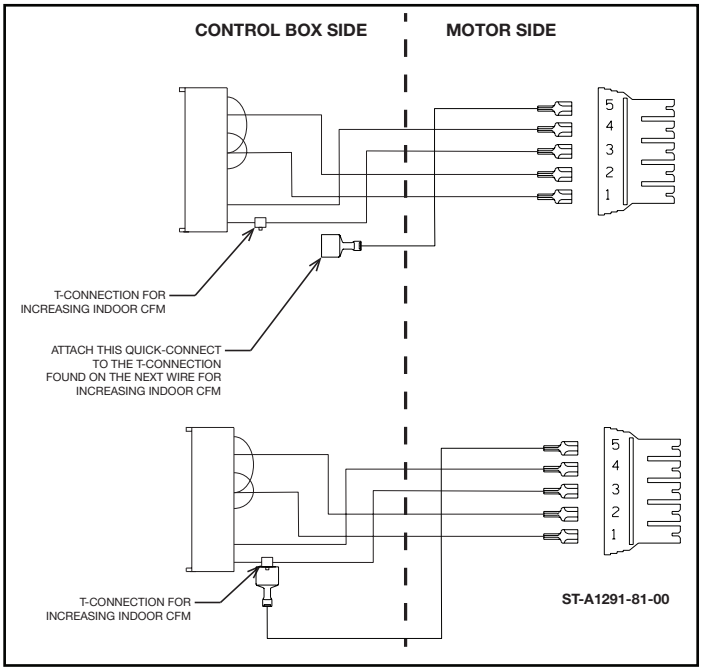
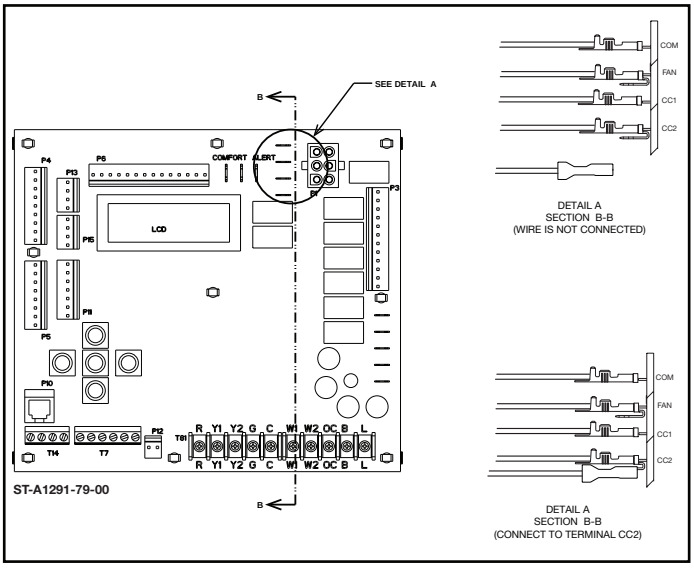


Figure J.3.2. – D: How to Increase Airflow for 6 ton DDC Units



J.3.2.3. Adjusting Fresh Air Flow with Economizer

See section ***J.3. Checking and Adjusting Air Flow*** for measuring airflow, and refer to the I&O included with the Economizers for more information on adjusting airflow.

J.3.2.4. Adjusting Fresh Air Flow with Damper

All dampers are field install accessories. See the above sections for measuring airflow, and refer to the I&O included with the fresh air dampers for more information on adjusting airflow. Refer to local building codes for any fresh air requirements.

J.4. Checking Cooling Operation

Note: In the below section, first and second stage cooling applied ONLY to the ZT units. For ZR units, only first stage applies.

COOLING SEQUENCE OF OPERATION

A. Call for cooling

1. The zone thermostat contacts close, and a call for cooling is initiated.

2. Inputs 'Y1' and 'G' to the control are energized.

3. The control senses input to 'Y1' and 'G'. After a 1sec delay, the control energizes both the indoor blower and first stage compressor.

4. The control enters normal operating loop were all inputs are continuously checked.

5. Zone thermostat is satisfied.

6. The blower will continue to run for a preset period of time after the zone thermostat is satisfied.

7. The control goes into standby mode displaying a "O".

B. Call for second stage cooling. After first stage cooling established; starting from A4.

1. If a call for second stage cooling is initiated after a call for first stage cooling is established, the control energizes 'Y2' and energizes the second stage compressor.

2. Then the control enters the normal operating loop where all inputs are continuously checked.

C. Second stage satisfied and first stage still called for; starting from B2.

1. 'Y2' is de-energized and the second compressor stage is de-energized.

D. First stage and second stage called simultaneously.

1. The zone thermostat contacts close, and a call for first and second stage cooling is initiated.

2. Inputs 'Y1', 'Y2' and 'G' to the control are energized.

3. The control senses 'Y1', 'Y2' and 'G'. After a 1sec delay, the control energizes the indoor blower, and the first and second compressor stages.

E. First stage and second stage removed simultaneously.

1. Upon a loss of 'Y1' and 'Y2', the compressor is de-energized. The control de-energizes the indoor blower relay, and cuts off the blower after an indoor blower delay.

2. The control goes into standby mode displaying a "O".

CONTINUOUS FAN MODE

A 'G' input only indicates a zone thermostat call for continuous indoor blower operation.

TIME DELAY BYPASS for non-DDC units

The Time Delay Bypass resets the ICC (Integrated Compressor Control) from any lockout mode or bypasses compressor anti-short cycle delay timer. To bypass the time delay, press the SW1 button with an insulated probe for 1sec and then release.

FAULT RECALL OPERATION for non-DDC units

To enter FAULT RECALL mode, press the SW1 button with an insulated probe for 2sec and release. Upon entering and exiting the FAULT RECALL mode, the top bottom segments of the 7-segment display will be activated. The ICC will automatically scroll through the stored faults on the 7-segment display. Each fault is displayed one time with the top segment of the 7-segment display activated between faults. Each fault is displayed with the most recent fault displayed first. An "O" will be displayed when no faults are stored. The ICC will automatically exit the FAULT RECALL mode after displaying stored faults.

An example of one LPC fault and one HPC fault scrolled on the display is shown as: ¯21¯23¯

J. STARTUP AND OPERATION

CLEAR FAULT HISTORY for non-DDC units

To clear FAULT HISTORY, press the SW1 button with an insulated probe for 5sec and release. The top and bottom segments of the 7-segment display will be activated and flash to indicate the history has been cleared.

Example: ======

TEST MODE for DDC Units

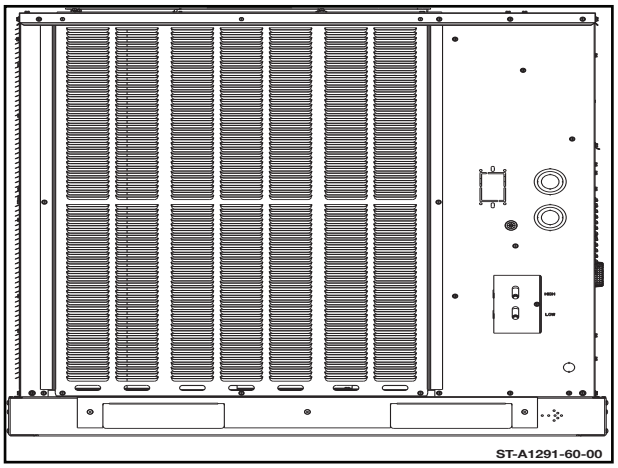
For units with DDC, there is a "Run Test" mode that will aid in diagnostics during installation. Please refer to the CLEAR CONTROL MANUAL for more information.

J.4.1. Checking Refrigerant Pressures

To check refrigerant pressures, attach R410a manifold gauges to the high/lo service ports. The upper port is the high pressure port, and the lower is the low pressure port. **BE SURE TO USE ZERO LOSS FITTINGS WHILE MEASURING PRESSURE; ANY LOSS OF CHARGE MAY IMPACT PERFORMANCE.**

See section ***C.2.1.Tools Required for Installing and Servicing R-410A Models.***

Figure J.4.1. –A: Service Port Location



J.4.1.1. Refrigerant Pressure Charts

See ***Appendix F*** towards the end of this manual for Refrigerant Pressure Charts.

J.4.2. Checking Sub Cooling for Adjusting Charge Weight

See ***Appendix F*** towards the end of this manual for Refrigerant Charging Charts.

NOTE: This procedure is very important for optimizing this product's performance.

How to check the unit's subcooling to fine-tune refrigerant charge:

1. The Indoor ambient temperature must be between 72 °F and 82 °F dry bulb at the indoor coil.

2. Confirm the indoor air supply is at the rated CFM listed in ***Appendix A***.

3. Allow the system to run long enough for temperatures and pressures to stabilize; at least fifteen minutes.

4. Measure liquid pressure and line temperature at the liquid line service port (refer to section ***J.4.2.1.*** below for the liquid line temperature measurement location). USE ZERO LOSS FITTINGS WHILE MEASURING PRESSURE; ANY LOSS OF CHARGE MAY IMPACT PERFORMANCE.

5. To find the saturation temperature at the measured pressure, subtract the measured liquid line temperature from the saturation pressure to get the sub-cooling.

6. Check if the Sub-Cooling is within +/- 1.5 °F tolerance.

7. If the sub-cooling values are significantly different (> 20 psig) from those listed on the table in Appendix F, there may be an airflow or component issue. Refer to section M. Diagnostics for more information.

J.4.2.1. Measuring Air Temperature and Liquid Line Temperature

Measuring air temperature:

1. Insert a thermometer in the supply air duct as close to the unit as possible.

2. Insert a thermometer in the return air duct as close to the filters as possible.

3. If preferred, use the locations shown in ***Figure J.4.2.1. - A: Line Temperature Measurement Location*** instead of the supply/ return ductwork.

4. Operate the unit for a minimum of 15 minutes in cooling mode.

5. When the thermometer in the supply air duct stops changing (approximately five minutes), subtract the return air temperature from the supply air temperature. This is the cooling mode temperature difference.

If the measured temperature difference is not reducing, or if the return air is not reaching the thermostat set point, the air flow is too low. Airflow must be increased by either removing the restrictions in the duct system, or by changing the air flow. See ***Section J.3.2. Air Flow Measurements and Adjustments*** for changing air flow.

IMPORTANT: Some high-efficiency filters have a greater than normal resistance to airflow. This can negatively affect airflow. BE SURE TO CHECK THE AIRFLOW if using any filter other than the factory-provided filter.

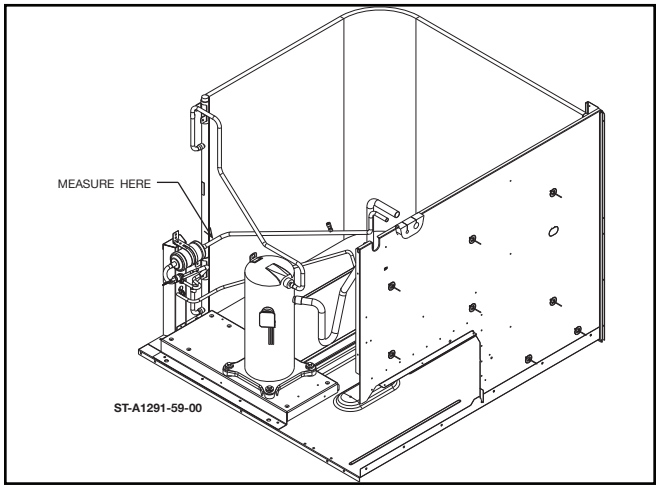
Measuring line temperature:

1. Attach a thermometer or thermocouple to the liquid refrigerant line right after the filter-dryer. See ***Figure J.4.2.1. - A: Line Temperature Measurement Location.***

2. Operate the unit for a minimum of 15 minutes in cooling mode.

3. When the measurement of the temperature stops changing (approximately five minutes), record the temperature.

Figure J.4.2.1. – A: Line Temperature Measurement Location



J.4.3. Measuring Compressor Electrical Loads

See ***Appendix B*** towards the end of this manual for Compressor Electrical Data.

J.5. Checking Electric Heat Operation

Electric heater kits will have their own seperate instructional document. For factory installed heater kits the document will be found in the parts bag, and for field installed heater kits the document will be found in the box. Refer to these documents for any information regarding checking heat operation.

K. TEST AND BALANCE

K.1. Air Flow Charts and Information

See ***Appendix C*** towards the end of this manual for Air Flow Performance Data.

K.2. Air Flow Adjustments

K.2.1. Blower Speed for 3-5 Ton Units

See ***Section J.3.2. Air Flow Measurements and Adjustments*** on how to increase the blower speed and increase airflow for the 3-5T units.

K.2.2. Blower Motor Controller for 5 ton High Static 460V and all 6 ton units.

See ***Section J.3.2. Air Flow Measurements and Adjustments*** on how to increase the blower speed and increase airflow on the 5 Ton High Static 460V and 6 Ton units that use a Blower Motor Controller.

K.2.3. Economizer Adjustments

Do not Fix a minimum position on an economizer, set the minimum position through the control board only. See the instructions provided with the economizer for more info. The part numbers for these instructions are listed in section ***D.4.1. Economizer Information.***

M. HUMIDIDRY

M.1 Dehumidification System Information

With the factory installed dehumidification option, in addition to a thermostat or space temperature sensor that is normally present, an indoor relative humidity sensor is installed in the occupied space and connected to the Rooftop Unit Controller (RTU-C) which then controls the capacity of the cooling coil to remove moisture from the supply air and maintain space relative humidity below an adjustable limit visible on the RTU-C display.

The default value is the ASHRAE recommended limit of 60% RH. With this option, a refrigerant reheat coil is installed downstream from the evaporator coil. When the space humidity is too high and reheat is energized, this coil uses some of the heat that is normally rejected to the outside by the condenser coil to instead reheat the cold air from the evaporator coil just enough to avoid overcooling the space. Providing “neutral air” to the occupied space.

On a two-stage system, it is possible for both a thermostat and humidistat to register readings above set point. Under this condition, the system runs in the high stage dehumidification cycle, and the motor operates on high speed. This provides dry conditioned air.

Because the demand for dehumidification can be different from the cooling demand, the unit will first satisfy the demand for cooling and then if the space humidity is still too high, dehumidification mode is energized. When in dehumidification mode, the supply air leaving the unit will be near the entering air temperature, but at a much lower humidity. The unit will exit the dehumidification mode when the humidity set point is satisfied; or if the load is increased, it will return to normal cooling mode.

Reheat is not available during the gas-heating mode.

Figure M.1. – A

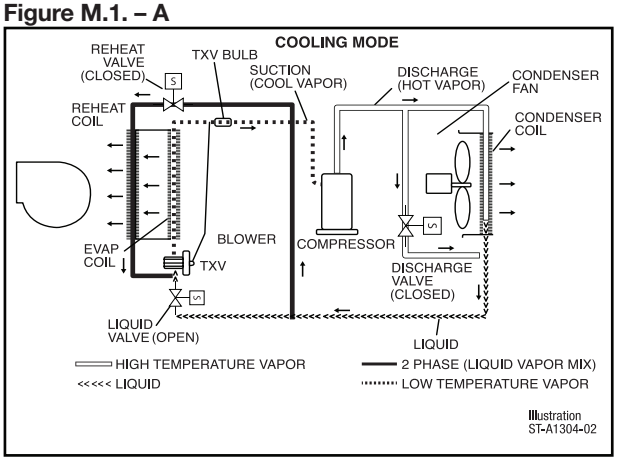


Figure M.1. - A shows the refrigerant path during the normal cooling mode. The liquid refrigerant leaves the TXV with the sudden pressure drop causing the liquid to expand to a vapor and absorbing the heat from the supply air going through the evaporator coil. The refrigerant vapor then travels to the compressor where it is elevated to a higher pressure and temperature.

The superheated refrigerant vapor next carries the heat to the outside coil where the heat is then rejected and the refrigerant condenses into a subcooled liquid where the process repeats itself.

Figure M.1. – B

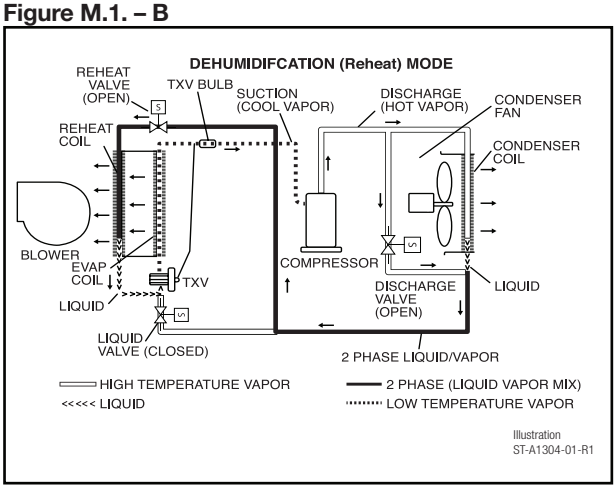


Figure M.1. - B shows the refrigerant path during the reheat mode. When the reheat cycle is energized by the RTU-C, the reheat solenoid valve, upstream of the reheat coil opens. The liquid solenoid valve ahead of the TXV, closes. The discharge solenoid valve, in the compressor discharge line, opens. The liquid refrigerant leaves the TXV with the sudden pressure drop causing the liquid to expand to a vapor and absorbing the heat from the supply air going through the evaporator coil. The refrigerant vapor then travels to the compressor where it is elevated to a higher pressure and temperature. The refrigerant next carries the heat to a parallel path between the outside condenser coil and a bypass circuit. Some of the heat is rejected outdoor.

The ratio of heat rejected outdoors versus indoors is controlled by an outdoor fan motor controller (OFMC) that monitors the two phase temperature and varies the fan speed. This 2-phase refrigerant vapor is then sent to the reheat coil. As the refrigerant travels through the reheat coil is condenses into a subcooled liquid where the process repeats itself.

M. HUMIDIDRY

M.2 Heat Sensor Installation

The Humidity control unit requires the use of a zone mounted humidity sensor. The sensor should be located in the conditioned space, approximately 5ft from the floor, on an interior wall. Take care to locate it away from direct sunlight and away from air flow from vents or drafts from doors. The humidity sensors output is a 0-10VDC signal and will be connected to the DDC Control.

The package unit has a ZNS-5 sensor installed to measure the humidity. As an additional option, it includes a space temp. sensor. meets the requirement and includes an optional space temperature sensor. The control wiring should be a minimum of 18AWG Solid Copper wire with 5 Conductors and is connected from the DDC Control to the sensor as follows:

RED = R to V+ (+24VAC)

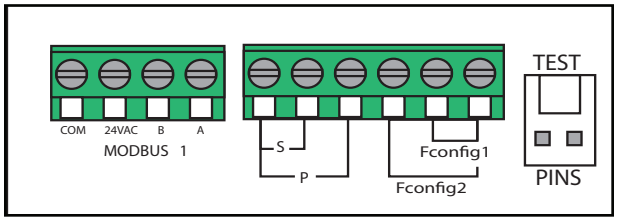
GREEN = Field Confg 1 & 2 (Right most terminal) to GROUND

BLUE = Field Config 2 (3rd terminal from right) to VOut

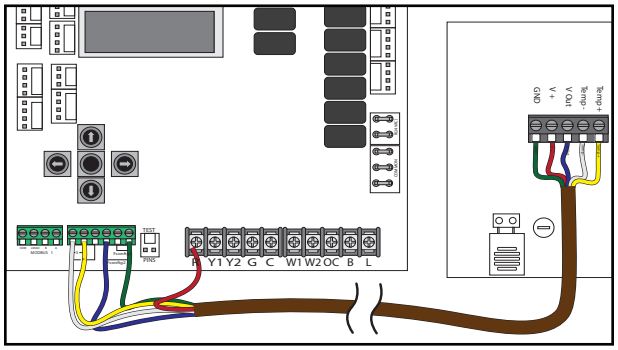
WHITE = S & P (Left most terminal) to Temp -

YELLOW = S (2nd terminal from left) to Temp+

See the installation instructions for additional details.



ZNS-5 HEAT/TEMPERATURE SENSOR



HONEYWELL DUCT MOUNTED HEAT SENSOR

This optional wires the same except the temperature sensor connects directly to a Honeywell Thermostat.

RED = R to V+ (+24VAC)

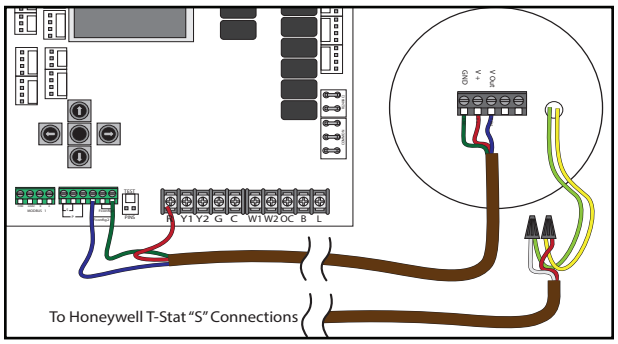
GREEN = Field Confg 1 & 2 (Right most terminal) to GROUND

BLUE = Field Config 2 (3rd terminal from right) to VOut

Other = Honeywell S- Terminal to Yellow Wire

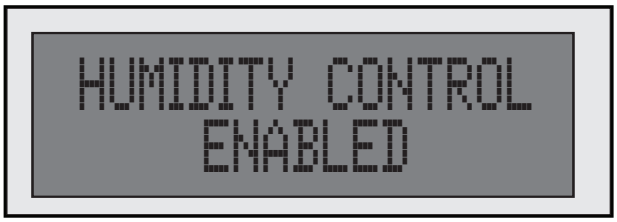
Other = Honeywell S+ Terminal to Green Wire

See the installation instructions for additional details.



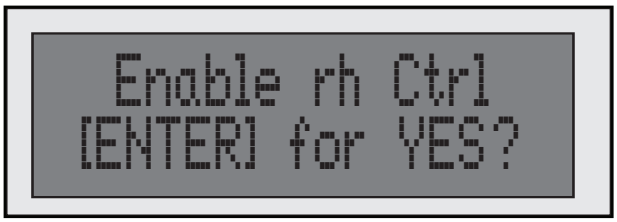
M.3 Humidity Control Settings and Configuration

The Clear Control is designed to operate in conjunction with the zone sensor discussed earlier in the guide. These are the steps to verify the zone sensor and adjust the humidity set-point and operating modes. The system can be programmed to a humidity level as low as 35%, and can be set to run dehumidification as part of the cooling cycle or as a stand alone system regardless of the cooling or fan call status from the thermostat, recommended.



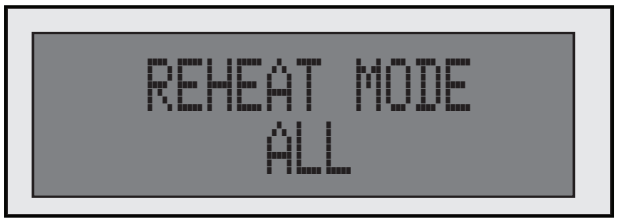
NOTICE: The system will not operate the humidity control when the outdoor ambient temperature is below 60°F, this is because the humidity control uses hot refrigerant bypassed from the outdoor coil,. When the ambient temperature is too low, insufficient heat will be retained in the refrigerant to properly operate the Reheat system for proper dehumidification. The Reheat system in this packaged unit is not designed for industrial or process applications, it is intended for human comfort zones.

Navigate through the Clear Control menu to “Humidity Control” it should say Enabled. If it says “Disabled” press the Enter button twice to Enable rh Control.



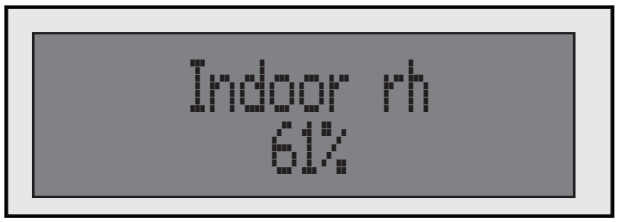
Next set the desired Relative Humidity Set-point. This set-point will be where the control will run the associated dehumidification cycles to bring the humidity in the zone down to this percentage.

Now set the Reheat Mode, there are three functions to choose from, Reheat in Occupied, will only run dehumidification when there is a Fan or Cooling Call. Reheat in Unoccupied, will on run dehumidification when there is no fan or cooling call; Reheat ALL, (recommended) will run reheat based on the humidity reading regardless of the thermostat operation.



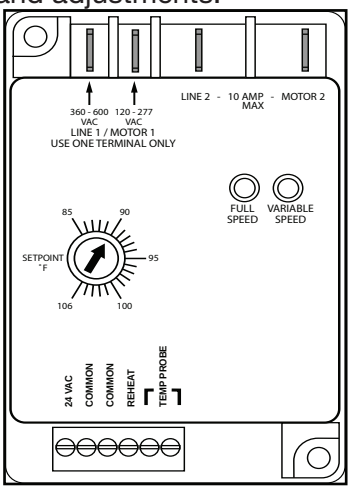
Checking the Humidity Sensor reading, Navigate to Humidity Control then down to Indoor rh, this will display the reading from the humidity zone sensor. If this shows “4%” then it means that the zone sensor is not connected properly or malfunctioning.

Verify a 0-10VDC signal across the Field Cnfg 2 terminals on the control board. 10VDC = 100%, 5VDC - 50%.



The humidity control system is also equipped with an Outdoor Fan Motor Controller, OFMC, this controller changes the speed of the outdoor fans to allow for more or less heat in the bypassed refrigerant used to operate the reheat system. Adjustments to the OFMC are not needed unless undesirable operation occurs.

Consult the Installation instructions provided with the system for details on the OFMC operation and adjustments.



N. DIAGNOSTICS

N.1. Diagnostics Chart

N.1.1.Cooling Diagnostics Chart

⚠ WARNING

DISCONNECT ALL POWER TO UNIT BEFORE SERVICING. CONTACTOR MAY BREAK ONLY ONE SIDE. FAILURE TO SHUT OFF POWER CAN CAUSE ELECTRICAL SHOCK RESULTING IN PERSONAL INJURY OR DEATH.

SYMPTOM	POSSIBLE CAUSE	REMEDY
Unit will not run	• Power off or loose electrical connection	• Check for correct voltage at compressor contactor in control box
	• Thermostat out of calibration-set too high	• Reset
	• Failed contactor	• Check for 24 volts at contactor coil - replace if contacts are open
	• Blown fuses	• Replace fuses
	• Transformer defective	• Check wiring-replace transformer
	• High pressure control open (if provided)	• Reset-also see high head pressure remedy-The high pressure control opens at 450 PSIG
	• Interconnecting low voltage wiring damaged	• Replace thermostat wiring
Condenser fan runs, compressor doesn't	• Loose connection	• Check for correct voltage at compressor - check & tighten all connections
	• Compressor stuck, grounded or open motor winding open internal overload.	• Wait at least 2 hours for overload to reset. If still open, replace the compressor.
	• Low voltage condition	At compressor terminals, voltage must be within 10% of rating plate volts when unit is operating.
	• Low voltage condition	• Add start kit components
Insufficient cooling	• Improperly sized unit	• Recalculate load
	• Improper airflow	• Check - should be approximately 400 CFM per ton.
	• Incorrect refrigerant charge	• Charge per procedure attached to unit service panel.
	• Air, non-condensibles or moisture in system	• Recover refrigerant, evacuate & recharge, add filter drier
	• Incorrect voltage	• At compressor terminals, voltage must be within 10% of rating plate volts when unit is operating.
Compressor short cycles	• Incorrect voltage	• At compressor terminals, voltage must be ± 10% of nameplate marking when unit is operating.
	• Defective overload protector	• Replace - check for correct voltage
	• Refrigerant undercharge	• Add refrigerant
Registers sweat	• Low evaporator airflow	• Increase speed of blower or reduce restriction - replace air filter
High head-low vapor pressures	• Restriction in liquid line, expansion device or filter drier	• Remove or replace defective component
	• Flow check piston size too small	• Change to correct size piston
	• Incorrect capillary tubes	• Change coil assembly
	• TXV does not open	• Replace TXV
High head-high or normal vapor pressure - Cooling mode	• Dirty condenser coil	• Clean coil
	• Refrigerant overcharge	• Correct system charge
	• Condenser fan not running	• Repair or replace
	• Air or non-condensibles in system	• Recover refrigerant, evacuate & recharge
Low head-high vapor pressures	• Defective Compressor valves	• Replace compressor
	• Incorrect capillary tubes	• Replace coil assembly
Low vapor - cool compressor - iced evaporator coil	• Low evaporator airflow	• Increase speed of blower or reduce restriction - replace air filter
	• Operating below 65°F outdoors	• Add Low Ambient Kit
	• Moisture in system	• Recover refrigerant - evacuate & recharge - add filter drier
High vapor pressure	• Excessive load	• Recheck load calculation
	• Defective compressor	• Replace
Fluctuating head & vapor pressures	• TXV hunting	• Check TXV bulb clamp - check air distribution on coil - replace TXV
	• Air or non-condensibles in system	• Recover refrigerant, evacuate & recharge
Gurgle or pulsing noise at expansion device or liquid line	• Air or non-condensibles in system	• Recover refrigerant, evacuate & recharge

N.2. Alarm Codes – Full List

Alarm Codes		
CODE	**Description**	**FAULT LEVEL**
0	STAND BY	None
c	COMPRESSOR ON - Low (Flashing if in time delay)	None
C	COMPRESSOR ON - High (Flashing if in time delay)	None
E	Economizer Cooling - No Compressor	None
F	CONTINUOUS FAN	None
h	GAS HEAT ON - LOW-FIRE	None
H	GAS HEAT ON -HIGH-FIRE	None
4	Comfort Alert Code 4 for Compressor Circuit 1	Shutdown
5	Comfort Alert Code 5 for Compressor Circuit 1	Shutdown
6	Comfort Alert Code 6 for Compressor Circuit 1	Shutdown
7	Comfort Alert Code 7 for Compressor Circuit 1	Shutdown
8	Comfort Alert Code 8 for Compressor Circuit 1	Shutdown
9	Comfort Alert Code 9 for Compressor Circuit 1	Shutdown
11	FAILED IGNITION	Problem
12	LO FLAME SENSE	Warning
13	FLAME LOST	Problem
14	UNEXPECTED FLAME	Shutdown
15	HIGH-FIRE GAS VALVE IMPROPER VOLTAGE	Problem
20	REFRIGERANT LOW PRESSURE SWITCH OPEN - CIRCUIT 1	Problem
21	REFRIGERANT LOW PRESSURE SWITCH OPEN - CIRCUIT 2	Problem
22	MAIN LIMIT OPEN	Problem
29	REFRIGERANT HIGH PRESSURE SWITCH OPEN - CIRCUIT 1	Problem
30	REFRIGERANT HIGH PRESSURE SWITCH OPEN - CIRCUIT 2	Problem
33	MRLC (Rollout Limit) OPEN	Problem
34	Comfort Alert Code 4 for Compressor Circuit 2	Shutdown
35	Comfort Alert Code 5 for Compressor Circuit 2	Shutdown
36	Comfort Alert Code 6 for Compressor Circuit 2	Shutdown
37	Comfort Alert Code 7 for Compressor Circuit 2	Shutdown
38	Comfort Alert Code 8 for Compressor Circuit 2	Shutdown
39	Comfort Alert Code 9 for Compressor Circuit 2	Shutdown
42	Invalid Thermostat Selection	Warning
44	LOW-FIRE NEGATIVE PRESSURE CONTROL CLOSED	Problem
46	LOW-FIRE NEGATIVE PRESSURE CONTROL OPEN	Problem
49	FREEZE SWITCH OPEN - CIRCUIT 1	Problem
50	FREEZE SWITCH OPEN - CIRCUIT 2	Problem
55	2nd stage COMBUSTION PRESSURE SWITCH CLOSED	Problem
57	HIGH-FIRE NEGATIVE PRESSURE CONTROL CLOSED	Problem
59	Condensate Drain Plugged	Shutdown
61	HIGH-FIRE NEGATIVE PRESSURE CONTROL OPEN	Problem, Shutdown
83	Condenser Coil Temp Sensor Fail-OAT	Problem
84	Outdoor Air Temperature Sensor Fail-OAT	Problem
88	Emergency Stop Fault	Shutdown
93	CONTROL Fault	Shutdown
97	Smoke Detection	Shutdown

N. DIAGNOSTICS

N.2.1. Cooling Alarm Codes and Diagnostics

All Core Command come standard with a 7-segment diagnostic display. During standby mode with no fault codes present, the display will read “0” (zero). During normal thermostat heating, cooling or continuous fan operation, a letter will be displayed to describe the mode of operation as follows:

C = Cooling

F = Continuous Fan Operation

When the control senses a fault present, it will display a code to help in diagnoses. A list of normal operating codes and potential fault codes follows:

Alarm Codes - Cooling Only		
CODE	**DESCRIPTION**	**FAULT LEVEL**
0	Standby	None
c	Compressor On – Low (Flashing If In Time Delay)	None
C	Compressor On – High (Flashing If In Time Delay)	None
E	Economizer Cooling – No Compressor	None
F	Continuous Fan	None
4	Comfort Alert Code 4 For Compressor Circuit 1	Shutdown
5	Comfort Alert Code 5 For Compressor Circuit 1	Shutdown
6	Comfort Alert Code 6 For Compressor Circuit 1	Shutdown
7	Comfort Alert Code 7 For Compressor Circuit 1	Shutdown
8	Comfort Alert Code 8 For Compressor Circuit 1	Shutdown
9	Comfort Alert Code 9 For Compressor Circuit 1	Shutdown
20	Refrigerant Low Pressure Switch Open – Circuit 1	Problem
29	Refrigerant High Pressure Switch Open – Circuit 1	Problem
49	Freeze Switch Open – Circuit 1	Problem
59	Condensate Drain Plugged	Shutdown
83	Condenser Coil Temp Sensor Fail-Oct	Problem
84	Outdoor Air Temperature Sensor Fail-Oat	Problem
88	Emergency Stop Fault	Shutdown
93	Control Fault	Shutdown
97	Smoke Detection	Shutdown

The method for displaying a two-digit fault is to display the first digit for one second immediately followed by the second digit – which is also displayed for a duration of one second. A ½ second pause is then displayed. Cycle repeats until the fault is cleared. Each fault is flashed (displayed) a minimum of two times even if the fault condition has cleared before the fault can be displayed twice.

Normal Operation Mode:

0	Displayed anytime there is no fault present and no thermostat call present
c	COMPRESSOR ON - Low (Flashing if in time delay)
C	COMPRESSOR ON - High (Flashing if in time delay)
E	When the system uses Economizer Cooling with No Compressor
F	Displayed anytime thermostat calls for continuous fan

Fault Codes with Descriptions and Solutions:

Alarm Codes - Cooling Only		
CODE	**DESCRIPTION**	**FAULT LEVEL**
0	STANDBY	None
c	COMPRESSOR ON – Low (Flashing if in time delay)	None
C	COMPRESSOR ON – High (Flashing if in time delay)	None
E	Economizer Cooling – No Compressor	None
F	CONTINUOUS FAN	None
4	**Comfort Alert Code 4 for Compressor Circuit 1**	Shutdown
	ALARM Designation: Locked Rotor Circuit 1	
	DESCRIPTION:	
	1. Circuit 1 shutdown and retry after Anti-Short Cycle Delay (ASCD) Maximum is 3 attempts.	
	SOLUTION/STATUS/Possible - Troubleshooting Information	
	1. Low line voltage	
	2. Excessive Refrigerant in compressor	
	3. Seized bearings in compressor	
5	**Comfort Alert Code 5 for Compressor Circuit 1**	Shutdown
	ALARM Designation: Open Circuit 1	
	DESCRIPTION:	
	1. Circuit 1 shutdown and retry after ASCD. Note: This alarm is sent by the Comfort Alert Module only after the fault has been sensed for a minimum of 4 hours.	
	SOLUTION/STATUS/Possible - Troubleshooting Information	
	1. Condensing unit power disconnect is open	
	2. Compressor circuit breaker or fuses are open	
	3. Compressor contactor has failed open High pressure switch is open and requires manual reset	
	4. Broken supply wires or connector is not making contact	
	5. Unusually long compressor protector reset time due to extreme ambient temperature	
	6. Compressor windings are damaged	
6	**Comfort Alert Code 6 for Compressor Circuit 1**	Shutdown
	ALARM Designation: Missing Phase Circuit 1	
	DESCRIPTION:	
	1. Circuit 1 shutdown	
	SOLUTION/STATUS/Possible - Troubleshooting Information	
	1. Compressor fuse is open on one phase	
	2. Broken wire or connector on one phase	
	3. Compressor motor winding is damaged	
	4. Utility supply has dropped one phase	

N. DIAGNOSTICS

Fault Codes with Descriptions and Solutions:

Alarm Codes - Cooling Only		
CODE	**DESCRIPTION**	**FAULT LEVEL**
7	**Comfort Alert Code 7 for Compressor Circuit 1**	Shutdown
	ALARM Designation: Reverse Phase Circuit 1	
	DESCRIPTION:	
	1. Run outdoor and indoor fans continuously for circuit 1 and change mode of operation to Unoccupied Auto. This procedure prevents the Space Temperature from reaching extreme values.	
	SOLUTION/STATUS/Possible - Troubleshooting Information	
	1. Compressor running backward due to supply phase reversal	
8	**Comfort Alert Code 8 for Compressor Circuit 1**	Shutdown
	ALARM Designation: Welded Contactor Circuit 1	
	DESCRIPTION:	
	1. Circuit 1 shutdown	
	SOLUTION/STATUS/Possible - Troubleshooting Information	
	1. Compressor contactor has failed closed	
	2. Thermostat demand signal not connected to module	
9	**Comfort Alert Code 9 for Compressor Circuit 1**	Shutdown
	ALARM Designation: Low Voltage Circuit 1	
	DESCRIPTION:	
	1. Circuit 1 Shutdown and wait for voltage to return to operational levels.	
	SOLUTION/STATUS/Possible - Troubleshooting Information	
	1. Control circuit transformer is overloaded	
	2. Low line voltage to compressor	
20	**DESCRIPTION:** REFRIGERANT LOW PRESSURE SWITCH OPEN – CIRCUIT 1	Problem
	CAUSE:	
	1. Low evaporator airflow	
	2. Refrigerant undercharge	
	3. Restriction in liquid line, expansion device or filter drier	
	4. Operating below 65°F outdoors	
	5. Moisture in system	
	SOLUTION: The solution will depend on the cause.	
	1. Increase speed of blower or reduce restriction - replace air filter	
	2. Check for leaks - add refrigerant	
	3. Remove or replace defective component	
	4. Add Low Ambient Kit	
	5. Recover refrigerant - evacuate & recharge - add or replace filter drier	

Fault Codes with Descriptions and Solutions:

Alarm Codes - Cooling Only		
CODE	**DESCRIPTION**	**FAULT LEVEL**
29	**DESCRIPTION:** REFRIGERANT HIGH PRESSURE SWITCH OPEN – CIRCUIT 1	Problem
	CAUSE:	
	1. Restriction in liquid line, expansion device or filter drier	
	2. Refrigerant overcharge	
	3. Condenser fan not running	
	4. Air or non-condensibles in system	
	SOLUTION: The solution will depend on the cause.	
	1. Recover refrigerant - evacuate & recharge remove or replace defective component	
	2. Remove refrigerant	
	3. Check voltage, Run Capacitor & Outdoor Motor Repair or replace	
	4. Recover refrigerant, evacuate & recharge	
49	**FREEZE SWITCH OPEN – CIRCUIT 1**	Problem
	DESCRIPTION:	
	1. Occurs when sensors are either open or shorted.	
	SOLUTION: The solution will depend on the cause.	
	1. Replace the sensor	
	2. Check sensor Is installed correctly on control	
59	**Condensate Drain Plugged**	Shutdown
	DESCRIPTION:	
	1. Condensate line is blocked water inside of unit	
	SOLUTION: The solution will depend on the cause.	
	1. Remove blockage	
	2. Remove condensate pan and clean	
83	**Condenser Coil Temp Sensor Fail-OCT**	Problem
	DESCRIPTION:	
	1. No defrost operation, but unit continues to operate in either heating or cooling.	
	SOLUTION: The solution will depend on the cause.	
	1. Extreme temperatures	
	2. Replace the sensor	
	3. Check that sensor is installed correctly on control	

N. DIAGNOSTICS

Fault Codes with Descriptions and Solutions:

Alarm Codes - Cooling Only		
CODE	**DESCRIPTION**	**FAULT LEVEL**
84	**Outdoor Air Temperature Sensor Fail-OAT**	Problem
	DESCRIPTION:	
	1. No defrost operation, but unit continues to operate in either heating or cooling.	
	2. The heat source continues to be heat pump, independently of the outdoor air temperature	
	SOLUTION: The solution will depend on the cause.	
	1. Extreme temperatures	
	2. Replace the sensor	
	3. Check that sensor is installed correctly on control	
88	**Emergency Stop Fault**	Shutdown
	DESCRIPTION:	
	1. Complete shutdown	
	SOLUTION: The solution will depend on the cause.	
	1. Cannot be cleared by the 'Clear All Alarms" command. Must be cleared by changing the Emergency Stop Fault network value.	
93	**CONTROL Fault**	Shutdown
	DESCRIPTION:	
	1. Internal Control fault.	
	SOLUTION: The solution will depend on the cause.	
	1. Replace Control	
91	**Smoke Detection**	Shutdown
	DESCRIPTION:	
	1. RTU-C reads the smoke detection input as open -- complete shutdown.	
	SOLUTION: The solution will depend on the cause.	
	1. If not due to a fire, Replace the sensor, Check sensor is in stalled correctly on control	
	2. Check Smoke Detection Circuit, if no Smoke Detector is installed, ensure Economizer Smoke Bypass plug is installed	

N.2.2. Non-applicable Fault Codes

The controls used in this product are common with a few other product families. Because of this, there are several fault codes that are programmed into the controls but DO NOT APPLY to this product. If one of these fault codes appear, clear the fault and continue diagnostics. If the code persists, power down the unit and reapply power before continuing diagnostics.

These non-applicable fault codes are listed below:

Alarm Codes - NON-APPLICABLE FAULT CODES		
CODE	Description	FAULT LEVEL
h	GAS HEAT ON - LOW-FIRE	None
H	GAS HEAT ON -HIGH-FIRE	None
11	FAILED IGNITION	Problem
12	LO FLAME SENSE	Warning
13	FLAME LOST	Problem
14	UNEXPECTED FLAME	Shutdown
15	HIGH-FIRE GAS VALVE IMPROPER VOLTAGE	Problem
21	REFRIGERANT LOW PRESSURE SWITCH OPEN - CIRCUIT 2	Problem
22	MAIN LIMIT OPEN	Problem
30	REFRIGERANT HIGH PRESSURE SWITCH OPEN - CIRCUIT 2	Problem
33	MRLC (Rollout Limit) OPEN	Problem
34	Comfort Alert Code 4 for Compressor Circuit 2	Shutdown
35	Comfort Alert Code 5 for Compressor Circuit 2	Shutdown
36	Comfort Alert Code 6 for Compressor Circuit 2	Shutdown
37	Comfort Alert Code 7 for Compressor Circuit 2	Shutdown
38	Comfort Alert Code 8 for Compressor Circuit 2	Shutdown
39	Comfort Alert Code 9 for Compressor Circuit 2	Shutdown
42	Invalid Thermostat Selection	Warning
44	LOW-FIRE NEGATIVE PRESSURE CONTROL CLOSED	Problem
46	LOW-FIRE NEGATIVE PRESSURE CONTROL OPEN	Problem
50	FREEZE SWITCH OPEN - CIRCUIT 2	Problem
55	2nd stage COMBUSTION PRESSURE SWITCH CLOSED	Problem
57	HIGH-FIRE NEGATIVE PRESSURE CONTROL CLOSED	Problem
61	HIGH-FIRE NEGATIVE PRESSURE CONTROL OPEN	Problem, Shutdown

N.3. Common Mistakes

- These are a list of common mistakes made during installation.
- Drain Pan Connections, drain trap connected to the wrong outlet side, not connected at all, or insufficient trap depth.
- Connecting a W2 call only to try and get full heat all the time, Connect both W1 and W2 together if the job requirement or thermostat is setup for single stage heating.
- Connecting a Y2 call only to try and get full cooling all the time, Connect both Y1 and Y2 together if the job requirement or thermostat is setup for single stage cooling.
- Economizer connections, not installing the 3-wire jumper plug into the economizer wiring harness, if a factory option smoke detector is not used, this will cause a Smoke Detection Fault.

P. APPENDICES

Appendix A – General Product Data

GENERAL DATA -

Model RACCZR Series	036ACT	036ACU	036ADT	036ADU
Cooling Performance[A]				
Gross Cooling Capacity Btu [kW]	36,000 [10.55]	36,000 [10.55]	36,000 [10.55]	36,000 [10.55]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
SEER/SEER2[B]	14/13.4	14/13.4	14/13.4	14/13.4
Nominal CFM/AHRI Rated CFM [L/s]	1200 [566]	1200 [566]	1200 [566]	1200 [566]
AHRI Rated CFM (SEER/SEER2) [L/s]	1300/1025 [613/483]	1300/1025 [613/483]	1300/1025 [613/483]	1300/1025 [613/483]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	35,400/34,200 [10.37/10.02]	35,400/34,200 [10.37/10.02]	35,400/34,200 [10.37/10.02]	35,400/34,200 [10.37/10.02]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	27,000/23,940 [7.91/7.01]	27,000/23,940 [7.91/7.01]	27,000/23,940 [7.91/7.01]	27,000/23,940 [7.91/7.01]
Net Latent Capacity Btu (SEER/SEER2) [kW]	8,400/10,260 [2.46/3.00]	8,400/10,260 [2.46/3.00]	8,400/10,260 [2.46/3.00]	8,400/10,260 [2.46/3.00]
Net System Power kW (SEER/SEER2)	3.16/3.22	3.16/3.22	3.16/3.22	3.16/3.22
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	1	1	1	1
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.48 [1.53]	16.48 [1.53]	16.48 [1.53]	16.48 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	4600 [2171]	4600 [2171]	4600 [2171]	4600 [2171]
No. Motors/HP	1 at 1/5 HP	1 at 1/5 HP	1 at 1/5 HP	1 at 1/5 HP
Motor RPM	820	820	820	820
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	3/4	1 1/2	3/4	1
Motor RPM	1050	1400	1050	1050
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	69 [1956]	69 [1956]	69 [1956]	69 [1956]
Weights				
Net Weight lbs. [kg]	557 [253]	557 [253]	557 [253]	557 [253]
Ship Weight lbs. [kg]	595 [270]	595 [270]	595 [270]	595 [270]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

Appendix A – General Product Data

GENERAL DATA -

Model RACCZR Series	036AJT	036AJU	036AYT	036AYU
Cooling Performance[A]				
Gross Cooling Capacity Btu [kW]	36,000 [10.55]	36,000 [10.55]	36,000 [10.55]	36,000 [10.55]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
SEER/SEER2[B]	14/13.4	14/13.4	14/13.4	14/13.4
Nominal CFM [L/s]	1200 [566]	1200 [566]	1200 [566]	1200 [566]
AHRI Rated CFM (SEER/SEER2) [L/s]	1300/1025 [613/483]	1300/1025 [613/483]	1300/1025 [613/483]	1300/1025 [613/483]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	35,400/34,200 [10.37/10.02]	35,400/34,200 [10.37/10.02]	35,400/34,200 [10.37/10.02]	35,400/34,200 [10.37/10.02]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	27,000/23,940 [7.91/7.01]	27,000/23,940 [7.91/7.01]	27,000/23,940 [7.91/7.01]	27,000/23,940 [7.91/7.01]
Net Latent Capacity Btu (SEER/SEER2) [kW]	8,400/10,260 [2.46/3.00]	8,400/10,260 [2.46/3.00]	8,400/10,260 [2.46/3.00]	8,400/10,260 [2.46/3.00]
Net System Power kW (SEER/SEER2)	3.16/3.22	3.16/3.22	3.16/3.22	3.16/3.22
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	1	1	1	1
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.48 [1.53]	16.48 [1.53]	16.48 [1.53]	16.48 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	4600 [2171]	4600 [2171]	4600 [2171]	4600 [2171]
No. Motors/HP	1 at 1/5 HP	1 at 1/5 HP	1 at 1/5 HP	1 at 1/5 HP
Motor RPM	820	820	820	820
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	3/4	1 1/2	3/4	1 1/2
Motor RPM	1050	1400	1050	1400
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x20x20 [51x508x508]	(4)2x20x20 [51x508x508]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	69 [1956]	69 [1956]	69 [1956]	69 [1956]
Weights				
Net Weight lbs. [kg]	557 [253]	557 [253]	557 [253]	557 [253]
Ship Weight lbs. [kg]	595 [270]	595 [270]	595 [270]	595 [270]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

P. APPENDICES

Appendix A – General Product Data

GENERAL DATA -

Model RACCZR Series	048ACT	048ACU	048ADT	048ADU
Cooling Performance[A]				
Gross Cooling Capacity Btu [kW]	49,000 [14.36]	49,000 [14.36]	49,000 [14.36]	49,000 [14.36]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
SEER/SEER2[B]	14/13.4	14/13.4	14/13.4	14/13.4
Nominal CFM [L/s]	1600 [755]	1600 [755]	1600 [755]	1600 [755]
AHRI Rated CFM (SEER/SEER2) [L/s]	1730/1460 [816/689]	1730/1460 [816/689]	1730/1460 [816/689]	1730/1460 [816/689]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	47,500/45,000 [13.92/13.19]	47,500/45,000 [13.92/13.19]	47,500/45,000 [13.92/13.19]	47,500/45,000 [13.92/13.19]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	35,100/31,600 [10.28/9.26]	35,100/31,600 [10.28/9.26]	35,100/31,600 [10.28/9.26]	35,100/31,600 [10.28/9.26]
Net Latent Capacity Btu (SEER/SEER2) [kW]	12,400/13.400 [3.63/3.93]	12,400/13.400 [3.63/3.93]	12,400/13.400 [3.63/3.93]	12,400/13.400 [3.63/3.93]
Net System Power kW (SEER/SEER2)	4.24/4.24	4.24/4.24	4.24/4.24	4.24/4.24
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	1	1	1	1
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1.26 [32]	1.26 [32]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	5900 [2784]	5900 [2784]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	3/4	1 1/2	3/4	1
Motor RPM	1050	1400	1050	1050
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	86 [2438]	86 [2438]	86 [2438]	86 [2438]
Weights				
Net Weight lbs. [kg]	580 [263]	580 [263]	580 [263]	580 [263]
Ship Weight lbs. [kg]	618 [280]	618 [280]	618 [280]	618 [280]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

Appendix A – General Product Data

GENERAL DATA -

Model RACCZR Series	048AJT	048AJU	048AYT	048AYU
Cooling Performance[A]		CONTINUED		
Gross Cooling Capacity Btu [kW]	49,000 [14.36]	49,000 [14.36]	49,000 [14.36]	49,000 [14.36]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
SEER/SEER2[B]	14/13.4	14/13.4	14/13.4	14/13.4
Nominal CFM [L/s]	1600 [755]	1600 [755]	1600 [755]	1600 [755]
AHRI Rated CFM (SEER/SEER2) [L/s]	1730/1460 [816/689]	1730/1460 [816/689]	1730/1460 [816/689]	1730/1460 [816/689]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	47,500/45,000 [13.92/13.19]	47,500/45,000 [13.92/13.19]	47,500/45,000 [13.92/13.19]	47,500/45,000 [13.92/13.19]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	35,100/31,600 [10.28/9.26]	35,100/31,600 [10.28/9.26]	35,100/31,600 [10.28/9.26]	35,100/31,600 [10.28/9.26]
Net Latent Capacity Btu (SEER/SEER2) [kW]	12,400/13.400 [3.63/3.93]	12,400/13.400 [3.63/3.93]	12,400/13.400 [3.63/3.93]	12,400/13.400 [3.63/3.93]
Net System Power kW (SEER/SEER2)	4.24/4.24	4.24/4.24	4.24/4.24	4.24/4.24
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	1	1	1	1
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1.26 [32]	1.26 [32]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	5900 [2784]	5900 [2784]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	3/4	1.5	3/4	1 1/2
Motor RPM	1050	1400	1050	1400
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	86 [2438]	86 [2438]	86 [2438]	86 [2438]
Weights				
Net Weight lbs. [kg]	580 [263]	580 [263]	580 [263]	580 [263]
Ship Weight lbs. [kg]	618 [280]	618 [280]	618 [280]	618 [280]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

P. APPENDICES

Appendix A – General Product Data

GENERAL DATA -

Model RACCZR Series	060ACT	060ACU	060ADT	060ADU
Cooling Performance[A]				
Gross Cooling Capacity Btu [kW]	59,500 [17.43]	59,500 [17.43]	59,500 [17.43]	59,500 [17.43]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
SEER/SEER2[B]	14/13.4	14/13.4	14/13.4	14/13.4
Nominal CFM/AHRI Rated CFM [L/s]	2000 [944]	2000 [944]	2000 [944]	2000 [944]
AHRI Rated CFM (SEER/SEER2) [L/s]	1950/1700 [920/802]	1950/1700 [920/802]	1950/1700 [920/802]	1950/1700 [920/802]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	57,500/56,500 [16.85/16.55]	57,500/56,500 [16.85/16.55]	57,500/56,500 [16.85/16.55]	57,500/56,500 [16.85/16.55]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	41,000/38,850 [12.01/11.38]	41,000/38,850 [12.01/11.38]	41,000/38,850 [12.01/11.38]	41,000/38,850 [12.01/11.38]
Net Latent Capacity Btu (SEER/SEER2) [kW]	16,500/17,650 [4.83/5.17]	16,500/17,650 [4.83/5.17]	16,500/17,650 [4.83/5.17]	16,500/17,650 [4.83/5.17]
Net System Power kW (SEER/SEER2)	5.13/5.33	5.13/5.33	5.13/5.33	5.13/5.33
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	1	1	1	1
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1.26 [32]	1.26 [32]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	5900 [2784]	5900 [2784]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	1	1 1/2	1	1.2
Motor RPM	1050	1400	1050	1300
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	82 [2324]	82 [2324]	82 [2324]	82 [2324]
Weights				
Net Weight lbs. [kg]	583 [264]	583 [264]	583 [264]	583 [264]
Ship Weight lbs. [kg]	621 [282]	621 [282]	621 [282]	621 [282]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

Appendix A – General Product Data

GENERAL DATA -

Model RACCZR Series	060AJT	060AJU	060AYT	060AYU
Cooling Performance[A]				
Gross Cooling Capacity Btu [kW]	59,500 [17.43]	59,500 [17.43]	59,500 [17.43]	59,500 [17.43]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
SEER/SEER2[B]	14/13.4	14/13.4	14/13.4	14/13.4
Nominal CFM/AHRI Rated CFM [L/s]	2000 [944]	2000 [944]	2000 [944]	2000 [944]
AHRI Rated CFM (SEER/SEER2) [L/s]	1950/1700 [920/802]	1950/1700 [920/802]	1950/1700 [920/802]	1950/1700 [920/802]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	57,500/56,500 [16.85/16.55]	57,500/56,500 [16.85/16.55]	57,500/56,500 [16.85/16.55]	57,500/56,500 [16.85/16.55]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	41,000/38,850 [12.01/11.38]	41,000/38,850 [12.01/11.38]	41,000/38,850 [12.01/11.38]	41,000/38,850 [12.01/11.38]
Net Latent Capacity Btu (SEER/SEER2) [kW]	16,500/17,650 [4.83/5.17]	16,500/17,650 [4.83/5.17]	16,500/17,650 [4.83/5.17]	16,500/17,650 [4.83/5.17]
Net System Power kW (SEER/SEER2)	5.13/5.33	5.13/5.33	5.13/5.33	5.13/5.33
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	1	1	1	1
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1.26 [32]	1.26 [32]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	5900 [2784]	5900 [2784]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP	1 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	1	1 1/2	1	1 1/2
Motor RPM	1050	1400	1050	1400
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	82 [2324]	82 [2324]	82 [2324]	82 [2324]
Weights				
Net Weight lbs. [kg]	583 [264]	583 [264]	583 [264]	583 [264]
Ship Weight lbs. [kg]	621 [282]	621 [282]	621 [282]	621 [282]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

P. APPENDICES

Appendix A – General Product Data

GENERAL DATA -

Model RACCZT Series	036	048	060
Cooling Performance[A]			
Gross Cooling Capacity Btu [kW]	39,500/35400 [11.57/10.37]	50,000/49,500 [14.65/14.5]	61,000/59,500 [17.87/17.43]
EER/EER2	12.5/12	12.5/12	12.5/12
SEER/SEER2[B]	17/16.2	17/16.2	17/16.2
Nominal CFM	1200 [566]	1600 [755]	2000 [944]
AHRI Rated CFM (SEER/SEER2) [L/s]	1260/1055 [595/498]	1570/1420 [741/670]	1815/1615 [856/762]
AHRI Net Cooling Capacity Btu (SEER/SEER2) [kW]	38,500/34,800 [11.28/10.2]	48,500/48,000 [14.21/14.06]	59,000/57,500 [17.29/16.85]
Net Sensible Capacity Btu (SEER/SEER2) [kW]	27,500/24,200[8.06/7.09]	34,500/33,000 [10.11/9.67]	42,000/40,000 [12.31,11.72]
Net Latent Capacity Btu (SEER/SEER2) [kW]	11,000/10,600[3.22/3.11]	14,000/15,000 [4.1/4.39]	17,000/17,500 [4.98,5.13]
Net System Power kW (SEER/SEER2)	2.60/2.64	3.67/3.7	4.6/4.62
Compressor			
No./Type	1/Scroll	1/Scroll	1/Scroll
No./Stages	2	2	2
Outdoor Sound Rating (dB)[D]	79	83	86
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.71 [18]	0.71 [18]	0.71 [18]
Face Area sq. ft. [sq. m]	16.72 [1.55]	16.72 [1.55]	16.66 [1.55]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1.26 [32]	1.26 [32]
Face Area sq. ft. [sq. m]	7.49 [0.69]	7.49 [0.69]	7.47 [0.69]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/2	Direct/2	Direct/2
CFM [L/s]	4850 [2289]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 1/3 HP	1 at 1/2 HP	1 at 1/2 HP
Motor RPM	800/440	900/800	900/800
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple
No. Motors	1	1	1
Motor HP[E]	Varies	Varies	Varies
Filter - Type	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	76.8 [2177]	82.4 [2336]	90 [2552]
Weights			
Net Weight lbs. [kg]	561 [254]	580 [263]	583 [264]
Ship Weight lbs. [kg]	599 [272]	618 [280]	621 [282]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

Appendix A – General Product Data

GENERAL DATA -

Model RACCZT Series	072ACT	072ACU	072ADT	072ADU
Cooling Performance[A]				
Gross Cooling Capacity Btu [kW]	70,000 [20.51]	70,000 [20.51]	70,000 [20.51]	70,000 [20.51]
EER/EER2	11.2/10.6	11.2/10.6	11.2/10.6	11.2/10.6
IEER[C]	14.8	14.8	14.8	14.8
Nominal CFM/AHRI Rated CFM [L/s]	2400 [1133]	2400 [1133]	2400 [1133]	2400 [1133]
AHRI Rated CFM [L/s]	2400 [1133]	2400 [1133]	2400 [1133]	2400 [1133]
AHRI Net Cooling Capacity Btu [kW]	68000 [19.93]	68000 [19.93]	68000 [19.93]	68000 [19.93]
Net Sensible Capacity Btu [kW]	50199.9 [14.71]	50199.9 [14.71]	50199.9 [14.71]	50199.9 [14.71]
Net Latent Capacity Btu [kW]	17800.1 [5.22]	17800.1 [5.22]	17800.1 [5.22]	17800.1 [5.22]
Net System Power kW	6.07	6.07	6.07	6.07
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
No./Stages	2	2	2	2
Outdoor Sound Rating (dB)[D]	88	88	88	88
Outdoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]	16.52 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [32]	1 [32]	1 [32]	1 [32]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	5900 [2784]	5900 [2784]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 3/4 HP	1 at 3/4 HP	1 at 3/4 HP	1 at 3/4 HP
Motor RPM	1100	1100	1100	1100
Indoor Fan - Type	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct	Direct	Direct
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	1 1/5	1 1/5	1 1/5	1 1/5
Motor RPM	1300	1300	1300	1300
Motor Frame Size	48	48	48	48
Filter - Type	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	105.6[2994]	105.6[2994]	105.6[2994]	105.6[2994]
Weights				
Net Weight lbs. [kg]	582 [264]	582 [264]	582 [264]	582 [264]
Ship Weight lbs. [kg]	620 [281]	620 [281]	620 [281]	620 [281]

Note: Please look at the rating plates pasted on the side of the unit to understand the model number and the compressor code of your unit.

P. APPENDICES

Appendix A – General Product Data

GENERAL DATA -

Model RACCZT Series	072AYT	072AYU
Cooling Performance[A]		
Gross Cooling Capacity Btu [kW]	70,000 [20.51]	70,000 [20.51]
EER/EER2	11.2/10.6	11.2/10.6
IEER[B]	14.8	14.8
Nominal CFM/AHRI Rated CFM [L/s]	2400 [1133]	2400 [1133]
AHRI Rated CFM [L/s]	2400 [1133]	2400 [1133]
AHRI Net Cooling Capacity Btu [kW]	68000 [19.93]	68000 [19.93]
Net Sensible Capacity Btu [kW]	50199.9 [14.71]	50199.9 [14.71]
Net Latent Capacity Btu [kW]	17800.1 [5.22]	17800.1 [5.22]
Net System Power kW	6.07	6.07
Compressor		
No./Type	1/Scroll	1/Scroll
No./Stages	2	2
Outdoor Sound Rating (dB)[D]	88	88
Outdoor Coil - Fin Type	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	16.52 [1.53]	16.52 [1.53]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]
Indoor Coil - Fin Type	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	1 [32]	1 [32]
Face Area sq. ft. [sq. m]	7.52 [0.7]	7.52 [0.7]
Rows / FPI [FPcm]	1 / 20 [8]	1 / 20 [8]
Refrigerant Control	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/0.75 [19.05]	1/0.75 [19.05]
Outdoor Fan - Type	Propeller	Propeller
No. Used/Diameter in. [mm]	1/26 [660.4]	1/26 [660.4]
Drive Type/No. Speeds	Direct/1	Direct/1
CFM [L/s]	5900 [2784]	5900 [2784]
No. Motors/HP	1 at 3/4 HP	1 at 3/4 HP
Motor RPM	1100	1100
Indoor Fan - Type	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x11 [279x279]	1/11x11 [279x279]
Drive Type	Direct	Direct
No. Speeds	Multiple	Multiple
No. Motors	1	1
Motor HP	1 1/5	1 1/5
Motor RPM	1300	1300
Motor Frame Size	48	48
Filter - Type	Disposable	Disposable
Furnished	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(4)2x16x16 [51x406x406]	(4)2x16x16 [51x406x406]
Refrigerant Charge Oz. [g]	105.6[2994]	105.6[2994]
Weights		
Net Weight lbs. [kg]	582 [264]	582 [264]
Ship Weight lbs. [kg]	620 [281]	620 [281]

Appendix A – General Product Data (Cont.)

A. Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to • 20% of nominal CFM. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on AHRI Standard 210/240.

B. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.

C. Integrated Energy Efficiency Ration (IEER) is rater in accordance with AHRI Standard 340/360.

D. Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

E. See Airflow Performance tables for motor horsepower and more Indoor Fan information.

P. APPENDICES

Appendix B – Electrical Data

See Appendix E for Electrical Data and Fuse Sizing specific to the Manufacturer's approved Electric Heater Kits.

ELECTRICAL DATA - RGECZR SERIES									
		036ACT	**036ACU**	**036ADT**	**036ADU**	**036AJT**	**036AJU**	**036AYT**	**036AYU**
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506	187-253	187-253	523-632	523-632
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	3	3	3	3	1	1	3	3
	Hz	60	60	60	60	60	60	60	60
	Minimum Circuit Ampacity	19	25	11	10	25	31	12	19
	Minimum Overcurrent Protection Device Size	25	30	15	15	30	35	15	25
	Maximum Overcurrent Protection Device Size	25	35	15	15	35	40	15	30
Compressor Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	480	480	208/230	208/230	575	575
	Phase	3	3	3	3	1	1	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
	Amps (RLA), Comp.	9	9	5.6	5.6	14.1	14.1	3.8	3.8
	Amps (LRA), Comp.	71	71	38	38	77	77	36.5	36.5
Condenser Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	480	480	208/230	208/230	575	575
	Phase	1	1	1	1	1	1	1	1
	HP	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/5
	Amps (FLA, each)	1.2	1.2	0.8	0.8	1.2	1.2	0.55	0.55
	Amps (LRA, each)	2.3	2.3	1.4	1.4	2.3	2.3	1.1	1.1
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1
	HP	3/4	1 1/2	3/4	1	3/4	1 1/2	3/4	1 1/2
	Amps (FLA, each)	6	11.5	3.2	2.1	6	11.5	6	11.5
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix B – Electrical Data (Cont.)

See Appendix E for Electrical Data and Fuse Sizing specific to the Manufacturer's approved Electric Heater Kits.

ELECTRICAL DATA - RGECZR SERIES									
		048ACT	048ACU	048ADT	048ADU	048AJT	048AJU	048AYT	048AYU
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506	187-253	187-253	523-632	523-632
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	3	3	3	3	1	1	3	3
	Hz	60	60	60	60	60	60	60	60
	Minimum Circuit Ampacity	25	31	14	13	34	40	13	20
	Minimum Overcurrent Protection Device Size	30	35	15	15	40	45	15	25
	Maximum Overcurrent Protection Device Size	35	40	15	15	50	50	15	30
Compressor Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	3	3	3	3	1	1	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2
	Amps (RLA), Comp.	13.1	13.1	6.1	6.1	19.9	19.9	4.9	4.9
	Amps (LRA), Comp.	83.1	83.1	41	41	109	109	33	33
Condenser Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	1	1	1	1	1	1	1	1
	HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Amps (FLA, each)	2.5	2.5	2.5	2.5	2.5	2.5	1.1	1.1
	Amps (LRA, each)	5.1	5.1	3.1	3.1	5.1	5.1	2.5	2.5
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1
	HP	3/4	1 1/2	3/4	1	3/4	1 1/2	3/4	1 1/2
	Amps (FLA, each)	6	11.5	3.2	2.1	6	11.5	6	11.5
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Appendix B – Electrical Data (Cont.)

See Appendix E for Electrical Data and Fuse Sizing specific to the Manufacturer's approved Electric Heater Kits.

ELECTRICAL DATA - RGECZR SERIES									
		060ACT	060ACU	060ADT	060ADU	060AJT	060AJU	060AYT	060AYU
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506	187-253	187-253	523-632	523-632
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	3	3	3	3	1	1	3	3
	Hz	60	60	60	60	60	60	60	60
	Minimum Circuit Ampacity	30	34	16	17	42	46	14	19
	Minimum Overcurrent Protection Device Size	35	40	20	20	50	60	20	25
	Maximum Overcurrent Protection Device Size	45	45	20	20	60	70	20	30
Compressor Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	3	3	3	3	1	1	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor	4	4	4	4	4	4	4	4
	Amps (RLA), Comp.	15.9	15.9	7.1	7.1	25	25	3.4	3.4
	Amps (LRA), Comp.	110	110	52	52	134	134	39.5	39.5
Condenser Motor	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	575	575
	Phase	1	1	1	1	1	1	1	1
	HP	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Amps (FLA, each)	2.5	2.5	2.5	2.5	2.5	2.5	1.1	1.1
	Amps (LRA, each)	5.6	5.6	3.1	3.1	5.6	5.6	2.5	2.5
Evaporator Fan	No.	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1
	HP	1	1 1/2	1	1 1/5	1	1 1/2	1	1 1/2
	Amps (FLA, each)	7.6	11.5	4	4.8	7.6	11.5	7.6	11.5
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix B – Electrical Data (Cont.)

See Appendix E for Electrical Data and Fuse Sizing specific to the Manufacturer's approved Electric Heater Kits.

ELECTRICAL DATA - RGECZT SERIES						
		036ACT	036ACU	036ADT	036ADU	036AJT
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506	187-253
	Volts	208/230	208/230	460	460	208/230
	Phase	3	3	3	3	1
	Hz	60	60	60	60	60
	Minimum Circuit Ampacity	23	28	11	11	29
	Minimum Overcurrent Protection Device Size	25	35	15	15	35
	Maximum Overcurrent Protection Device Size	30	35	15	15	40
Compressor Motor	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	3	3	3	3	1
	RPM	3500	3500	3500	3500	3500
	Amps (RLA), Comp.	10.1	10.1	4.7	4.7	15.4
	Amps (LRA), Comp.	88	88	44.3	44.3	92
Condenser Motor	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	3.5	3.5	1.6	1.6	3.5
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A
Evaporator Fan	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	1	1	1	1	1
	HP	3/4	1 1/2	3/4	1	3/4
	Amps (FLA, each)	6	11.5	2.7	3.5	6
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A

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Appendix B – Electrical Data (Cont.)

See Appendix E for Electrical Data and Fuse Sizing specific to the Manufacturer's approved Electric Heater Kits.

ELECTRICAL DATA - RGECZT SERIES						
		048ACT	**048ACU**	**048ADT**	**048ADU**	**048AJT**
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506	187-253
	Volts	208/230	208/230	460	460	208/230
	Phase	3	3	3	3	1
	Hz	60	60	60	60	60
	Minimum Circuit Ampacity	28	33	14	15	37
	Minimum Overcurrent Protection Device Size	35	40	20	20	45
	Maximum Overcurrent Protection Device Size	40	45	20	20	50
Compressor Motor	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	3	3	3	3	1
	RPM	3500	3500	3500	3500	3500
	Amps (RLA), Comp.	12.8	12.8	7.1	7.1	19.9
	Amps (LRA), Comp.	105.3	105.3	61.8	61.8	126.5
Condenser Motor	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	1	1	1	1	1
	HP	1/2	1/2	1/2	1/2	1/2
	Amps (FLA, each)	5.3	5.3	5.3	2.3	5.3
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A
Evaporator Fan	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	1	1	1	1	1
	HP	3/4	1 1/2	3/4	1	3/4
	Amps (FLA, each)	6	11.5	2.7	3.5	6
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A

Appendix B – Electrical Data (Cont.)

ELECTRICAL DATA - RGECZT SERIES						
		060ACT	**060ACU**	**060ADT**	**060ADU**	**060AJT**
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506	187-253
	Volts	208/230	208/230	460	460	208/230
	Phase	3	3	3	3	1
	Hz	60	60	60	60	60
	Minimum Circuit Ampacity	34	38	15	15	45
	Minimum Overcurrent Protection Device Size	40	45	20	20	60
	Maximum Overcurrent Protection Device Size	45	50	20	20	70
Compressor Motor	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	3	3	3	3	1
	RPM	3500	3500	3500	3500	3500
	Amps (RLA), Comp.	16.4	16.4	6.9	6.9	25.6
	Amps (LRA), Comp.	110	110	54.7	54.7	158
Condenser Motor	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	1	1	1	1	1
	HP	1/2	1/2	1/2	1/2	1/2
	Amps (FLA, each)	5.3	5.3	2.3	2.3	5.3
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A
Evaporator Fan	No.	1	1	1	1	1
	Volts	208/230	208/230	460	460	208/230
	Phase	1	1	1	1	1
	HP	1	1 1/2	1	1 1/5	1
	Amps (FLA, each)	7.6	11.5	3.5	3.7	7.6
	Amps (LRA, each)	N/A	N/A	N/A	N/A	N/A

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Appendix B – Electrical Data (Cont.)

ELECTRICAL DATA - RGECZT SERIES					
		072ACT	072ACU	072ADT	072ADU
Unit Information	Unit Operating Voltage Range	187-253	187-253	418-506	418-506
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	Hz	60	60	60	60
	Minimum Circuit Ampacity	35	35	18	18
	Minimum Overcurrent Protection Device Size	40	40	20	20
	Maximum Overcurrent Protection Device Size	50	50	25	25
Compressor Motor	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	RPM	3450	3450	3450	3450
	HP, Compressor	5	5	5	5
	Amps (RLA), Comp.	17.6	17.6	8.5	8.5
	Amps (LRA), Comp.	136	136	66.1	66.1
Condenser Motor	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	1	1	1	1
	HP	3/4	3/4	3/4	3/4
	Amps (FLA, each)	4.2	4.2	2.3	2.3
	Amps (LRA, each)	5.6	5.6	3.1	3.1
Evaporator Fan	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	1	1	1	1
	HP	1 1/5	1 1/5	1 1/5	1 1/5
	Amps (FLA, each)	8.0	8.0	4.8	4.8
	Amps (LRA, each)	N/A	N/A	N/A	N/A

Appendix C – Air Flow Performance Data

3-5T - Low Static - Sideflow (208-230V/575V)														
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]							
		MERV 8 Filter	MERV 13 Filter				0.1 [.02]	0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]	0.6 [.15]	0.7 [.17]	0.8 [.20]
		Resistance - Inches of Water (Min/Max) [kPa]												
RACCZR036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	3/4 HP [559]	Fan - Tap 1	CFM	895	809	730	642	555	497	420	367
						WATTS	52	59	66	73	79	80	85	86
				3/4 HP [559]	Tap 2	CFM	1189	1111	1041	964	889	832	763	711
						WATTS	145	153	162	171	179	184	192	197
				3/4 HP [559]	Tap 3	CFM	1370	1297	1232	1163	1095	1038	974	922
						WATTS	201	211	221	231	240	248	257	264
				3/4 HP [559]	Cooling - Tap 4 *	CFM	1170	1091	1020	943	867	810	740	688
						WATTS	138	147	156	164	172	177	185	189
				3/4 HP [559]	High Speed - Tap 5	CFM	1513	1445	1389	1322	1269	1210	1153	1097
						WATTS	232	242	252	264	275	285	295	302
RACCZR048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	3/4 HP [559]	Fan - Tap 1	CFM	895	809	730	642	555	497	420	367
						WATTS	52	59	66	73	79	80	85	86
				3/4 HP [559]	Tap 2	CFM	1288	1212	1144	1072	1001	944	878	825
						WATTS	175	185	194	203	212	219	227	233
				3/4 HP [559]	Tap 3	CFM	1567	1499	1439	1378	1318	1261	1203	1151
						WATTS	263	274	285	296	306	317	328	338
				3/4 HP [559]	Cooling - Tap 4 *	CFM	1507	1438	1376	1313	1250	1193	1133	1081
						WATTS	244	255	265	276	286	296	307	316
				3/4 HP [559]	High Speed - Tap 5	CFM	1876	1817	1766	1718	1671	1614	1564	1512
						WATTS	360	373	386	399	411	427	440	454
RACCZR060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1 HP [745]	Fan - Tap 1	CFM	1169	1092	1022	950	874	783	715	640
						WATTS	129	138	147	158	165	173	180	187
				1 HP [745]	Tap 2	CFM	1586	1519	1459	1399	1339	1279	1221	1161
						WATTS	283	294	305	316	329	340	351	361
				1 HP [745]	Tap 3	CFM	1852	1794	1738	1684	1628	1575	1523	1471
						WATTS	437	450	463	476	491	503	516	529
				1 HP [745]	Cooling - Tap 4 *	CFM	1954	1899	1845	1792	1739	1688	1639	1590
						WATTS	496	510	524	537	553	566	580	594
				1 HP [745]	High Speed - Tap 5	CFM	2298	2254	2199	2154	2106	2059	2014	1976
						WATTS	929	956	981	1001	1030	1056	1081	1105

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

3-5T - High Static - Sideflow (208-230V/575V)															
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]							
		MERV 8 Filter	MERV 13 Filter				0.8 [.2]	0.9 [.22]	1 [.25]	1.1 [.27]	1.2 [.3]	1.3 [.32]	1.4 [.35]	1.5 [.37]
		Resistance - Inches of Water (Min/Max) [kPa]												
RACCZR036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	1 HP [745]	Fan - Tap 1	CFM	1037	974	913	851	795	786	729	676
						WATTS	261	270	279	287	294	298	306	312
				1 HP [745]	Tap 2	CFM	1393	1338	1286	1232	1183	1158	1107	1058
						WATTS	474	485	497	509	520	529	540	549
				1 HP [745]	Tap 3	CFM	1588	1538	1491	1442	1397	1363	1314	1268
						WATTS	591	603	617	630	644	655	668	680
				1 HP [745]	Cooling - Tap 4 *	CFM	1037	974	913	851	795	786	729	676
						WATTS	261	270	279	287	294	298	306	312
				1 HP [745]	High Speed - Tap 5	CFM	1495	1443	1398	1352	1303	1252	1202	1147
						WATTS	493	508	519	531	542	555	563	575
RACCZR048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	1 HP [745]	Fan - Tap 1	CFM	1371	1316	1264	1209	1160	1109	1057	1008
						WATTS	461	472	484	495	506	517	527	537
				1 HP [745]	Tap 2	CFM	1675	1627	1582	1535	1492	1444	1397	1352
						WATTS	643	656	671	684	699	712	725	738
				1 HP [745]	Tap 3	CFM	1740	1693	1650	1605	1563	1516	1470	1426
						WATTS	681	695	711	725	740	754	768	781
				1 HP [745]	Cooling - Tap 4 *	CFM	1360	1305	1252	1198	1148	1097	1045	996
						WATTS	454	466	477	488	499	510	520	530
				1 HP [745]	High Speed - Tap 5	CFM	1800	1762	1721	1676	1641	1587	1546	1512
						WATTS	692	706	719	737	755	768	780	795
RACCZR060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1.5 HP [1188]	Fan - Tap 1	CFM	1527	1476	1427	1377	1330	1281	1232	1185
						WATTS	554	567	580	592	605	617	629	640
				1.5 HP [1188]	Tap 2	CFM	1523	1471	1423	1372	1326	1277	1227	1180
						WATTS	552	564	577	590	602	614	626	637
				1.5 HP [1188]	Tap 3	CFM	1935	1893	1855	1814	1776	1732	1689	1647
						WATTS	798	813	831	846	864	880	895	910
				1.5 HP [1188]	Cooling - Tap 4 *	CFM	1581	1531	1484	1435	1390	1341	1293	1247
						WATTS	587	599	613	626	640	652	664	676
				1.5 HP [1188]	High Speed - Tap 5	CFM	2151	2115	2082	2046	2013	1972	1932	1893
						WATTS	928	945	964	981	1001	1020	1037	1054

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

Appendix C – Air Flow Performance Data (Cont.)

3-5T - Low Static - Sideflow (460V)															
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]							
		MERV 8 Filter	MERV 13 Filter				0.1 [.02]	0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]	0.6 [.15]	0.7 [.17]	0.8 [.20]
		Resistance - Inches of Water (Min/Max) [kPa]												
RACCZR036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	3/4 HP [559]	Fan - Tap 1	CFM	1110	956	870	792	709	630	549	512
						WATTS	79	78	84	91	98	104	110	111
				3/4 HP [559]	Tap 2	CFM	1255	1120	1040	965	887	813	738	697
						WATTS	145	147	155	163	172	179	186	190
				3/4 HP [559]	Tap 3	CFM	1621	1534	1467	1401	1337	1273	1212	1163
						WATTS	311	321	334	346	357	368	379	388
				3/4 HP [559]	Cooling - Tap 4	CFM	1392	1276	1200	1128	1056	986	916	872
						WATTS	207	212	222	232	241	250	259	264
				3/4 HP [559]	High Speed - Tap 5	CFM	1745	1673	1618	1549	1497	1435	1388	1334
						WATTS	341	357	370	384	396	407	418	430
RACCZR048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	3/4 HP [559]	Fan - Tap 1	CFM	1110	956	870	792	709	630	549	512
						WATTS	79	78	84	91	98	104	110	111
				3/4 HP [559]	Tap 2	CFM	1345	1222	1145	1072	998	926	854	812
						WATTS	186	190	199	208	217	225	234	239
				3/4 HP [559]	Tap 3	CFM	1755	1686	1624	1561	1503	1443	1387	1334
						WATTS	372	386	399	413	425	437	449	461
				3/4 HP [559]	Cooling - Tap 4 *	CFM	1738	1667	1604	1541	1482	1422	1365	1313
						WATTS	365	378	391	404	417	429	441	452
				3/4 HP [559]	High Speed - Tap 5	CFM	2081	2034	1981	1922	1873	1816	1769	1722
						WATTS	560	576	592	609	625	641	657	672
RACCZR060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1 HP [745]	Fan - Tap 1	CFM	1235	1155	1077	1013	955	882	778	691
						WATTS	150	159	169	177	185	193	204	211
				1 HP [745]	Tap 2	CFM	1453	1382	1311	1246	1188	1131	1064	1002
						WATTS	186	198	209	219	228	236	246	255
				1 HP [745]	Tap 3	CFM	1975	1921	1863	1808	1756	1707	1654	1602
						WATTS	541	557	573	590	605	618	632	644
				1 HP [745]	Cooling - Tap 4 *	CFM	2049	1996	1941	1887	1836	1788	1737	1687
						WATTS	591	608	625	642	657	672	686	699
				1 HP [745]	High Speed - Tap 5	CFM	2408	2367	2318	2267	2226	2177	2139	2089
						WATTS	861	884	900	921	939	957	974	996

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

3-5T - High Static - Sideflow (460V)															
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]							
		MERV 8 Filter	MERV 13 Filter				0.8 [.2]	0.9 [.22]	1 [.25]	1.1 [.27]	1.2 [.3]	1.3 [.32]	1.4 [.35]	1.5 [.37]
		Resistance - Inches of Water (Min/Max) [kPa]												
RACCZR036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	1 HP [745]	Fan - Tap 1	CFM	0	895	828	768	722	669	684	653
						WATTS	226	235	247	259	280	304	337	371
				1 HP [745]	Tap 2	CFM	958	895	828	768	722	669	684	653
						WATTS	226	235	247	259	280	304	337	371
				1 HP [745]	Tap 3	CFM	1591	1540	1486	1434	1375	1311	1263	1179
						WATTS	637	649	659	668	670	667	664	649
				1 HP [745]	Cooling - Tap 4 *	CFM	1064	1002	938	879	831	776	780	741
						WATTS	295	304	315	327	345	365	391	417
				1 HP [745]	High Speed - Tap 5	CFM	1526	1481	1440	1392	1336	1285	1231	1175
						WATTS	531	540	552	563	578	588	598	610
RACCZR048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	1 HP [745]	Fan - Tap 1	CFM	1061	1000	935	877	828	774	778	739
						WATTS	293	302	314	325	344	363	390	416
				1 HP [745]	Tap 2	CFM	1438	1384	1327	1272	1217	1156	1123	1052
						WATTS	537	549	559	569	576	579	585	581
				1 HP [745]	Tap 3	CFM	1629	1579	1526	1474	1415	1350	1298	1211
						WATTS	662	674	684	693	694	689	684	666
				1 HP [745]	Cooling - Tap 4 *	CFM	1434	1380	1323	1269	1213	1152	1120	1049
						WATTS	535	546	557	567	574	577	583	580
				1 HP [745]	High Speed - Tap 5	CFM	1795	1751	1710	1668	1629	1581	1538	1490
						WATTS	721	734	745	758	770	784	795	811
RACCZR060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1.5 HP [1188]	Fan - Tap 1	CFM	1063	1000	909	849	796	743	695	644
						WATTS	311	319	331	341	355	365	375	384
				1.5 HP [1188]	Tap 2	CFM	1063	1000	909	849	796	743	695	644
						WATTS	311	319	331	341	355	365	375	384
				1.5 HP [1188]	Tap 3	CFM	1444	1390	1335	1279	1220	1161	1090	1035
						WATTS	468	487	488	499	505	514	513	521
				1.5 HP [1188]	Cooling - Tap 4 *	CFM	1826	1795	1754	1714	1674	1636	1590	1540
						WATTS	681	700	720	738	757	774	787	799
				1.5 HP [1188]	High Speed - Tap 5	CFM	2127	2076	2045	2000	1966	1930	1894	1871
						WATTS	906	924	941	958	977	1008	1021	1049

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

Appendix C – Air Flow Performance Data (Cont.)

3-6T - Low Static - Sideflow (208-230V)																	
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	FL RPM	Motor Frame Size	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]							
		MERV 8 Filter	MERV 13 Filter						0.1 [.02]	0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]	0.6 [.15]	0.7 [.17]	0.8 [.20]
		Resistance - Inches of Water (Min/Max) [kPa]														
RACCZT036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	3/4 HP [559]	Fan/Low Heat - Tap 1	1050	48	CFM	1189	1111	1041	964	889	832	763	711
								WATTS	145	153	162	171	179	184	192	197
				3/4 HP [559]	High Heat - Tap 2	1050	48	CFM	1370	1297	1232	1163	1095	1038	974	922
								WATTS	201	211	221	231	240	248	257	264
				3/4 HP [559]	High Cooling - Tap 4 *	1050	48	CFM	1170	1091	1020	943	867	810	740	688
								WATTS	138	147	156	164	172	177	185	189
				3/4 HP [559]	High Speed - Tap 5	1050	48	CFM	1513	1445	1389	1322	1269	1210	1153	1097
								WATTS	232	242	252	264	275	285	295	302
RACCZT048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	3/4 HP [559]	Fan/Low Heat - Tap 1	1050	48	CFM	1288	1212	1144	1072	1001	944	878	825
								WATTS	175	185	194	203	212	219	227	233
				3/4 HP [559]	High Heat - Tap 2	1050	48	CFM	1567	1499	1439	1378	1318	1261	1203	1151
								WATTS	263	274	285	296	306	317	328	338
				3/4 HP [559]	High Cooling - Tap 4 *	1050	48	CFM	1507	1438	1376	1313	1250	1193	1133	1081
								WATTS	244	255	265	276	286	296	307	316
				3/4 HP [559]	High Speed - Tap 5	1050	48	CFM	1876	1817	1766	1718	1671	1614	1564	1512
								WATTS	360	373	386	399	411	427	440	454
RACCZT060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1 HP [745]	Fan/Low Heat - Tap 1	1050	48	CFM	1586	1519	1459	1399	1339	1279	1221	1161
								WATTS	283	294	305	316	329	340	351	361
				1 HP [745]	High Heat - Tap 2	1050	48	CFM	1852	1794	1738	1684	1628	1575	1523	1471
								WATTS	437	450	463	476	491	503	516	529
				1 HP [745]	High Cooling - Tap 4 *	1050	48	CFM	1954	1899	1845	1792	1739	1688	1639	1590
								WATTS	496	510	524	537	553	566	580	594
				1 HP [745]	High Speed - Tap 5	1050	48	CFM	2298	2254	2199	2154	2106	2059	2014	1976
								WATTS	929	956	981	1001	1030	1056	1081	1105
RACCZT072 (6T)	2100/2700	0.180 [.04]/ 0.240 [.06]	0.182 [.04]/ 0.275 [.07]	1.2 HP [895]	Fan/Low Heat - Tap 1	1300	48	CFM	1384	1319	1249	1188	1127	1066	1006	947
								WATTS	192	204	215	225	240	245	255	265
				1.2 HP [895]	High Heat - Tap 2	1300	48	CFM	1874	1833	1778	1730	1680	1630	1584	1539
								WATTS	421	435	450	466	480	495	510	525
				1.2 HP [895]	High Cool - Tap 4 *	1300	48	CFM	2331	2290	2245	2204	2159	2118	2072	2036
								WATTS	700	718	730	745	760	782	797	820
				1.2 HP [895]	High Speed - Tap 5	1300	48	CFM	2363	2330	2280	2237	2198	2164	2110	2071
								WATTS	771	792	808	824	843	860	875	890

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

3-6T - High Static - Sideflow (208-230V)																	
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance MERV 8 Filter Resistance - Inches of Water (Min/Max) [kPa]	Component Airflow Resistance MERV 13 Filter Resistance - Inches of Water (Min/Max) [kPa]	Motor HP [W]	Motor Speed	FL RPM	Motor Frame Size	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa] 0.8 [.2]	0.9 [.22]	1 [.25]	1.1 [.27]	1.2 [.3]	1.3 [.32]	1.4 [.35]	1.5 [.37]
RACCZT036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	1 HP [745]	Fan/Low Heat - Tap 1	1400	48	CFM	1393	1338	1286	1232	1183	1158	1107	1058
								WATTS	474	485	497	509	520	529	540	549
				1HP [745]	High Heat - Tap 2	1400	48	CFM	1588	1538	1491	1442	1397	1363	1314	1268
								WATTS	591	603	617	630	644	655	668	680
				1 HP [745]	High Cooling - Tap 4 *	1400	48	CFM	1037	974	913	851	795	786	729	676
								WATTS	261	270	279	287	294	298	306	312
				1 HP [745]	High Speed - Tap 5	1400	48	CFM	1495	1443	1398	1352	1303	1252	1202	1147
								WATTS	493	508	519	531	542	555	563	575
RACCZT048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	1 HP [745]	Fan/Low Heat - Tap 1	1400	48	CFM	1675	1627	1582	1535	1492	1444	1397	1352
								WATTS	643	656	671	684	699	712	725	738
				1 HP [745]	High Heat - Tap 2	1400	48	CFM	1740	1693	1650	1605	1563	1516	1470	1426
								WATTS	681	695	711	725	740	754	768	781
				1 HP [745]	High Cooling - Tap 4 *	1400	48	CFM	1360	1305	1252	1198	1148	1097	1045	996
								WATTS	454	466	477	488	499	510	520	530
				1 HP [745]	High Speed - Tap 5	1400	48	CFM	1800	1762	1721	1676	1641	1587	1546	1512
								WATTS	692	706	719	737	755	768	780	795
RACCZT060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1.5 HP [1119]	Fan/Low Heat - Tap 1	1400	48	CFM	1523	1471	1423	1372	1326	1277	1227	1180
								WATTS	552	564	577	590	602	614	626	637
				1.5 HP [1119]	High Heat - Tap 2	1400	48	CFM	1935	1893	1855	1814	1776	1732	1689	1647
								WATTS	798	813	831	846	864	880	895	910
				1.5 HP [1119]	High Cooling - Tap 4 *	1400	48	CFM	1581	1531	1484	1435	1390	1341	1293	1247
								WATTS	587	599	613	626	640	652	664	676
				1.5 HP [1119]	High Speed - Tap 5	1400	48	CFM	2151	2115	2082	2046	2013	1972	1932	1893
								WATTS	928	945	964	981	1001	1020	1037	1054
RACCZT072 (6T)	2100/2700	0.180 [.04]/ 0.240 [.06]	0.182 [.04]/ 0.275 [.07]	1.2 HP [895]	Fan/Low Heat - Tap 1	1300	48	CFM	1237	1182	1137	1076	996	961	906	853
								WATTS	364	373	386	396	405	409	421	431
				1.2 HP [895]	High Heat - Tap 2	1300	48	CFM	2043	2004	1953	1917	1879	1828	1783	1750
								WATTS	834	850	861	876	891	906	925	938
				1.2 HP [895]	High Cool - Tap 4 *	1300	48	CFM	2036	1996	1945	1908	1871	1819	1773	1743
								WATTS	820	835	845	860	877	890	910	924
				1.2 HP [895]	High Speed - Tap 5	1300	48	CFM	2462	2416	2371	2337	2294	2251	2214	2165
								WATTS	1053	1063	1078	1085	1100	1113	1121	1135

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

Appendix C – Air Flow Performance Data (Cont.)

3-6T - Low Static - Sideflow (460V)																	
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	FL RPM	Motor Frame Size	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]							
		MERV 8 Filter	MERV 13 Filter						0.1 [.02]	0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]	0.6 [.15]	0.7 [.17]	0.8 [.20]
		Resistance - Inches of Water (Min/Max) [kPa]														
RACCZT036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	3/4 HP [559]	Fan/Low Heat - Tap 1	1250	48	CFM	1255	1120	1040	965	887	813	738	697
								WATTS	145	147	155	163	172	179	186	190
				3/4 HP [559]	High Heat - Tap 2	1250	48	CFM	1621	1534	1467	1401	1337	1273	1212	1163
								WATTS	311	321	334	346	357	368	379	388
				3/4 HP [559]	High Cooling - Tap 4 *	1250	48	CFM	1392	1276	1200	1128	1056	986	916	872
								WATTS	207	212	222	232	241	250	259	264
				3/4 HP [559]	High Speed - Tap 5	1250	48	CFM	1745	1673	1618	1549	1497	1435	1388	1334
								WATTS	341	357	370	384	396	407	418	430
RACCZT048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	3/4 HP [559]	Fan/Low Heat - Tap 1	1250	48	CFM	1345	1222	1145	1072	998	926	854	812
								WATTS	186	190	199	208	217	225	234	239
				3/4 HP [559]	High Heat - Tap 2	1250	48	CFM	1755	1686	1624	1561	1503	1443	1387	1334
								WATTS	372	386	399	413	425	437	449	461
				3/4 HP [559]	High Cooling - Tap 4 *	1250	48	CFM	1738	1667	1604	1541	1482	1422	1365	1313
								WATTS	365	378	391	404	417	429	441	452
				3/4 HP [559]	High Speed - Tap 5	1250	48	CFM	2081	2034	1981	1922	1873	1816	1769	1722
								WATTS	560	576	592	609	625	641	657	672
RACCZT060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1 HP [745]	Fan/Low Heat - Tap 1	1250	48	CFM	1453	1382	1311	1246	1188	1131	1064	1002
								WATTS	186	198	209	219	228	236	246	255
				1 HP [745]	High Heat - Tap 2	1250	48	CFM	1975	1921	1863	1808	1756	1707	1654	1602
								WATTS	541	557	573	590	605	618	632	644
				1 HP [745]	High Cooling - Tap 4 *	1250	48	CFM	2049	1996	1941	1887	1836	1788	1737	1687
								WATTS	591	608	625	642	657	672	686	699
				1 HP [745]	High Speed - Tap 5	1250	48	CFM	2408	2367	2318	2267	2226	2177	2139	2089
								WATTS	861	884	900	921	939	957	974	996
RACCZT072 (6T)	2100/2700	0.180 [.04]/ 0.240 [.06]	0.182 [.04]/ 0.275 [.07]	1.2 HP [895]	Fan/Low Heat - Tap 1	1300	48	CFM	1384	1319	1249	1188	1127	1066	1006	947
								WATTS	192	204	215	225	240	245	255	265
				1.2 HP [895]	High Heat - Tap 2	1300	48	CFM	1863	1821	1765	1717	1650	1617	1571	1526
								WATTS	413	428	442	459	474	488	503	518
				1.2 HP [895]	High Cool - Tap 4 *	1300	48	CFM	2331	2290	2245	2204	2159	2118	2072	2036
								WATTS	700	718	730	745	760	782	797	820
				1.2 HP [895]	High Speed - Tap 5	1300	48	CFM	2363	2330	2280	2237	2198	2164	2110	2071
								WATTS	771	792	808	824	843	860	875	890

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

3-6T - High Static - Sideflow (460V)																	
Unit Model (Tonnage)	Manufacturer Recommended Airflow Range (Min/Max) CFM	Component Airflow Resistance		Motor HP [W]	Motor Speed	FL RPM	Motor Frame Size	CFM/ WATTS	External Static Pressure - Inches W.C. [kPa]								
		MERV 8 Filter	MERV 13 Filter						0.8 [.2]	0.9 [.22]	1 [.25]	1.1 [.27]	1.2 [.3]	1.3 [.32]	1.4 [.35]	1.5 [.37]
		Resistance - Inches of Water (Min/Max) [kPa]															
RACCZT036 (3T)	1050/1350	0.075 [.02]/ 0.105 [.03]	0.020 [.00]/ 0.066 [.02]	1 HP [745]	Fan/Low Heat - Tap 1	1250	48	CFM	958	895	828	768	722	669	684	653
								WATTS	226	235	247	259	280	304	337	371
				1HP [745]	High Heat - Tap 2	1250	48	CFM	1591	1540	1486	1434	1375	1311	1263	1179
								WATTS	637	649	659	668	670	667	664	649
				1 HP [745]	High Cooling - Tap 4 *	1250	48	CFM	1064	1002	938	879	831	776	780	741
								WATTS	295	304	315	327	345	365	391	417
				1 HP [745]	High Speed - Tap 5	1250	48	CFM	1526	1481	1440	1392	1336	1285	1231	1175
								WATTS	531	540	552	563	578	588	598	610
RACCZT048 (4T)	1400/1800	0.110 [.03]/ 0.150 [.04]	0.074 [.02]/ 0.135 [.03]	1 HP [745]	Fan/Low Heat - Tap 1	1250	48	CFM	1438	1384	1327	1272	1217	1156	1123	1052
								WATTS	537	549	559	569	576	579	585	581
				1 HP [745]	High Heat - Tap 2	1250	48	CFM	1629	1579	1526	1474	1415	1350	1298	1211
								WATTS	662	674	684	693	694	689	684	666
				1 HP [745]	High Cooling - Tap 4 *	1250	48	CFM	1434	1380	1323	1269	1213	1152	1120	1049
								WATTS	535	546	557	567	574	577	583	580
				1 HP [745]	High Speed - Tap 5	1250	48	CFM	1795	1751	1710	1668	1629	1581	1538	1490
								WATTS	721	734	745	758	770	784	795	811
RACCZT060 (5T)	1750/2250	0.145 [.04]/ 0.195 [.05]	0.128 [.03]/ 0.205 [.05]	1.2 HP [1119]	Fan/Low Heat - Tap 1	1300	48	CFM	1063	1000	909	849	796	743	695	644
								WATTS	311	319	331	341	355	365	375	384
				1.2 HP [1119]	High Heat - Tap 2	1300	48	CFM	1444	1390	1335	1279	1220	1161	1090	1035
								WATTS	468	487	488	499	505	514	513	521
				1.2 HP [1119]	High Cooling - Tap 4 *	1300	48	CFM	1826	1795	1754	1714	1674	1636	1590	1540
								WATTS	681	700	720	738	757	774	787	799
				1.2 HP [1119]	High Speed - Tap 5	1300	48	CFM	2127	2076	2045	2000	1966	1930	1894	1871
								WATTS	906	924	941	958	977	1008	1021	1049
RACCZT072 (6T)	2100/2700	0.180 [.04]/ 0.240 [.06]	0.182 [.04]/ 0.275 [.07]	1.2 HP [895]	Fan/Low Heat - Tap 1	1300	48	CFM	1237	1182	1137	1076	996	961	906	853
								WATTS	364	373	386	396	405	409	421	431
				1.2 HP [895]	High Heat - Tap 2	1300	48	CFM	2043	2004	1953	1917	1879	1828	1783	1750
								WATTS	834	850	861	876	891	906	925	938
				1.2 HP [895]	High Cool - Tap 4 *	1300	48	CFM	2036	1996	1945	1908	1871	1819	1773	1743
								WATTS	820	835	845	860	877	890	910	924
				1.2 HP [895]	High Speed - Tap 5	1300	48	CFM	2462	2416	2371	2337	2294	2251	2214	2165
								WATTS	1053	1063	1078	1085	1100	1113	1121	1135

NOTES

*Factory tap settings are marked with an asterisk**

Pressure drops across the 3-5T CFM range (1050 -2250). Pressure drops across the 6T CFM range (2100 - 2700). Wet coil: ~0.09 inches W.C. Downflow: ~0.1 inches W.C. Reheat coil: ~0.09 inches W.C.

Appendix C – Air Flow Performance Data (Cont.)

FLUSH MOUNT CONCENTRIC DIFFUSER PERFORMANCE INFORMATION								
Diffuser Model Number For Rheem	CFM	Minimum Throw (feet)	Maximum Throw (feet)	Static Pressure Drop (Diffuser)	Static Pressure Drop (Adapter)	Sound (in Db)	Diffuser Face Return Area (sq. ft.)	Diffuser Face Supply Area (sq. ft.)
					CN-1805-142			
RXRN-AEF1800	1000	9	12	0.14	0.057	20	2.1	3.37
	1200	12	16	0.2	0.08	25	2.1	3.37
	1400	15	20	0.26	0.105	30	2.1	3.37
	1600	17	23	0.33	0.134	30	2.1	3.37
	1800	20	26	0.41	0.17	35	2.1	3.37
	2000	22	29	0.5	0.21	40	2.1	3.37
	2400	25	32	0.68	0.29	45	2.1	3.37

DROP CONCENTRIC DIFFUSER PERFORMANCE INFORMATION								
Diffuser Model Number For Rheem	CFM	Minimum Throw (feet)	Maximum Throw (feet)	Static Pressure Drop (Diffuser)	Static Pressure Drop (Adapter)	Sound (in Db)	Diffuser Face Return Area (sq. ft.)	Diffuser Face Supply Area (sq. ft.)
					CN-1805-142			
RXRN-AED1800	1000	9	23	0.07	0.057	12	4.06	2.82
	1200	10	24	0.11	0.08	15	4.06	2.82
	1400	12	26	0.15	0.105	19	4.06	2.82
	1600	13	28	0.19	0.134	21	4.06	2.82
	1800	15	30	0.24	0.17	26	4.06	2.82
	2000	17	32	0.3	0.21	30	4.06	2.82
	2400	19	34	0.43	0.29	32	4.06	2.82

FLUSH MOUNT CONCENTRIC DIFFUSER PERFORMANCE INFORMATION								
Diffuser Model Number For Rheem	CFM	Minimum Throw (feet)	Maximum Throw (feet)	Static Pressure Drop (Diffuser)	Static Pressure Drop (Adapter)	Sound (in Db)	Diffuser Face Return Area (sq. ft.)	Diffuser Face Supply Area (sq. ft.)
					CN-1805-141			
RXRX-AEF2000	2600	17	24	0.49	0.21	30	3.48	3.76
	2800	18	28	0.55	0.24	35	3.48	3.76
	3000	20	30	0.62	0.27	35	3.48	3.76
	3200	22	33	0.69	0.31	40	3.48	3.76
	3400	23	37	0.77	0.34	40	3.48	3.76

DROP CONCENTRIC DIFFUSER PERFORMANCE INFORMATION								
Diffuser Model Number For Rheem	CFM	Minimum Throw (feet)	Maximum Throw (feet)	Static Pressure Drop (Diffuser)	Static Pressure Drop (Adapter)	Sound (in Db)	Diffuser Face Return Area (sq. ft.)	Diffuser Face Supply Area (sq. ft.)
					CN-1805-141			
RXRX-AED2000	2600	22	39	0.34	0.21	32	5.69	3.1
	2800	23	40	0.39	0.24	38	5.69	3.1
	3000	25	42	0.45	0.27	40	5.69	3.1
	3200	26	43	0.53	0.31	41	5.69	3.1
	3400	27	45	0.61	0.34	42	5.69	3.1

P. APPENDICES

Appendix C – Air Flow Performance Data (Cont.)

Airflow (cfm)	Downflow dP (inH20)	Horizontal dP (inH20)
1050	0.06	0.01
1150	0.07	0.01
1250	0.09	0.01
1350	0.10	0.01
1450	0.12	0.01
1550	0.13	0.02
1650	0.15	0.02
1750	0.17	0.02
1850	0.19	0.02
1950	0.21	0.02
2050	0.23	0.03
2150	0.26	0.03
2250	0.28	0.03
2350	0.31	0.04

Appendix D – Cooling Data for ZR 3Ton

COOLING PERFORMANCE - RACCZR036A																	
Entering Indoor Air @ 80°F [26.7°C] dbE																	
wbE			71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
CFM [L/s]			1350 [637]	1300 [614]	1050 [496]	1350 [637]	1300 [614]	1050 [496]	1350 [637]	1300 [614]	1050 [496]	1350 [637]	1300 [614]	1050 [496]	1350 [637]	1300 [614]	1050 [496]
DR			0.21	0.2	0.15	0.21	0.2	0.15	0.21	0.2	0.15	0.21	0.2	0.15	0.21	0.2	0.15
Outdoor Dry Bulb Temperature	75°F [23.9°C]	Total BTUH [kW]	43.5 [12.8]	43.2 [12.7]	41.7 [12.2]	40.4 [11.9]	40.2 [11.8]	38.8 [11.4]	38.4 [11.2]	38.1 [11.2]	36.8 [10.8]	37.8 [11.1]	37.6 [11]	36.3 [10.6]	37.7 [11.1]	37.5 [11]	36.2 [10.6]
		Sens BTUH [kW]	25.7 [7.5]	25.3 [7.4]	23 [6.7]	29.9 [8.8]	29.4 [8.6]	26.8 [7.8]	33.4 [9.8]	32.9 [9.6]	29.9 [8.8]	35.1 [10.3]	34.5 [10.1]	31.4 [9.2]	36.8 [10.8]	36.1 [10.6]	32.9 [9.6]
		Power	2.4	2.4	2.3	2.4	2.4	2.3	2.4	2.4	2.3	2.4	2.4	2.3	2.4	2.4	2.3
	80°F [26.7°C]	Total BTUH [kW]	42.2 [12.4]	41.9 [12.3]	40.4 [11.8]	39.1 [11.5]	38.8 [11.4]	37.5 [11]	37 [10.8]	36.8 [10.8]	35.5 [10.4]	36.5 [10.7]	36.2 [10.6]	35 [10.2]	36.4 [10.7]	36.2 [10.6]	34.9 [10.2]
		Sens BTUH [kW]	25 [7.3]	24.5 [7.2]	22.3 [6.5]	29.2 [8.6]	28.7 [8.4]	26.1 [7.7]	32.7 [9.6]	32.1 [9.4]	29.3 [8.6]	34.4 [10.1]	33.8 [9.9]	30.7 [9]	36 [10.6]	35.4 [10.4]	32.2 [9.4]
		Power	2.5	2.5	2.4	2.5	2.5	2.4	2.5	2.5	2.4	2.5	2.5	2.4	2.5	2.5	2.4
	85°F [29.4°C]	Total BTUH [kW]	40.8 [12]	40.6 [11.9]	39.1 [11.5]	37.8 [11.1]	37.5 [11]	36.2 [10.6]	35.7 [10.5]	35.4 [10.4]	34.2 [10]	35.2 [10.3]	34.9 [10.2]	33.7 [9.9]	35.1 [10.3]	34.8 [10.2]	33.6 [9.9]
		Sens BTUH [kW]	24.3 [7.1]	23.8 [7]	21.7 [6.4]	28.5 [8.3]	28 [8.2]	25.5 [7.5]	32 [9.4]	31.4 [9.2]	28.6 [8.4]	33.6 [9.9]	33.1 [9.7]	30.1 [8.8]	35.1 [10.3]	34.7 [10.2]	31.6 [9.3]
		Power	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.5	2.6	2.6	2.5
	90°F [32.2°C]	Total BTUH [kW]	39.5 [11.6]	39.2 [11.5]	37.9 [11.1]	36.4 [10.7]	36.2 [10.6]	34.9 [10.2]	34.3 [10.1]	34.1 [10]	32.9 [9.6]	33.8 [9.9]	33.6 [9.8]	32.4 [9.5]	33.7 [9.9]	33.5 [9.8]	32.3 [9.5]
		Sens BTUH [kW]	23.6 [6.9]	23.2 [6.8]	21.1 [6.2]	27.8 [8.1]	27.3 [8]	24.9 [7.3]	31.3 [9.2]	30.8 [9]	28 [8.2]	33 [9.7]	32.4 [9.5]	29.5 [8.6]	33.7 [9.9]	33.5 [9.8]	31 [9.1]
		Power	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	95°F [35.0°C]	Total BTUH [kW]	38.2 [11.2]	37.9 [11.1]	36.6 [10.7]	35.1 [10.3]	34.9 [10.2]	33.6 [9.9]	33 [9.7]	32.8 [9.6]	31.6 [9.3]	32.5 [9.5]	32.3 [9.5]	31.1 [9.1]	32.4 [9.5]	32.2 [9.4]	31 [9.1]
		Sens BTUH [kW]	22.9 [6.7]	22.5 [6.6]	20.5 [6]	27.1 [8]	26.7 [7.8]	24.3 [7.1]	30.6 [9]	30.1 [8.8]	27.4 [8]	32.3 [9.5]	31.7 [9.3]	28.9 [8.5]	32.4 [9.5]	32.2 [9.4]	30.4 [8.9]
		Power	2.9	2.9	2.8	2.9	2.9	2.8	2.9	2.9	2.8	2.9	2.8	2.8	2.9	2.8	2.8
	100°F [37.8°C]	Total BTUH [kW]	36.8 [10.8]	36.6 [10.7]	35.3 [10.3]	33.8 [9.9]	33.5 [9.8]	32.3 [9.5]	31.7 [9.3]	31.4 [9.2]	30.3 [8.9]	31.1 [9.1]	30.9 [9.1]	29.8 [8.7]	31.1 [9.1]	30.8 [9]	29.8 [8.7]
		Sens BTUH [kW]	22.3 [6.5]	21.9 [6.4]	19.9 [5.8]	26.5 [7.8]	26 [7.6]	23.7 [6.9]	30 [8.8]	29.5 [8.6]	26.8 [7.9]	31.1 [9.1]	30.9 [9.1]	28.3 [8.3]	31.1 [9.1]	30.8 [9]	29.8 [8.7]
		Power	3	3	3	3	3	3	3	3	2.9	3	3	2.9	3	3	2.9
	105°F [40.6°C]	Total BTUH [kW]	35.5 [10.4]	35.2 [10.3]	34 [10]	32.4 [9.5]	32.2 [9.4]	31.1 [9.1]	30.3 [8.9]	30.1 [8.8]	29.1 [8.5]	29.8 [8.7]	29.6 [8.7]	28.6 [8.4]	29.7 [8.7]	29.5 [8.6]	28.5 [8.3]
		Sens BTUH [kW]	21.7 [6.3]	21.3 [6.2]	19.4 [5.7]	25.9 [7.6]	25.4 [7.4]	23.1 [6.8]	29.4 [8.6]	28.9 [8.5]	26.3 [7.7]	29.8 [8.7]	29.6 [8.7]	27.7 [8.1]	29.7 [8.7]	29.5 [8.6]	28.5 [8.3]
		Power	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.1	3.1	3.2	3.1	3.1
	110°F [43.3°C]	Total BTUH [kW]	34.1 [10]	33.9 [9.9]	32.7 [9.6]	31.1 [9.1]	30.8 [9]	29.8 [8.7]	29 [8.5]	28.8 [8.4]	27.8 [8.1]	28.4 [8.3]	28.3 [8.3]	27.3 [8]	28.4 [8.3]	28.2 [8.3]	27.2 [8]
		Sens BTUH [kW]	21.1 [6.2]	20.7 [6.1]	18.8 [5.5]	25.3 [7.4]	24.8 [7.3]	22.6 [6.6]	28.8 [8.4]	28.3 [8.3]	25.7 [7.5]	28.4 [8.3]	28.3 [8.3]	27.2 [8]	28.4 [8.3]	28.2 [8.3]	27.2 [8]
		Power	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2
	115°F [46.1°C]	Total BTUH [kW]	32.8 [9.6]	32.6 [9.5]	31.4 [9.2]	29.7 [8.7]	29.5 [8.6]	28.5 [8.3]	27.6 [8.1]	27.4 [8]	26.5 [7.8]	27.1 [7.9]	26.9 [7.9]	26 [7.6]	27 [7.9]	26.8 [7.9]	25.9 [7.6]
		Sens BTUH [kW]	20.5 [6]	20.1 [5.9]	18.3 [5.4]	24.7 [7.2]	24.2 [7.1]	22.1 [6.5]	27.6 [8.1]	27.4 [8]	25.2 [7.4]	27.1 [7.9]	26.9 [7.9]	26 [7.6]	27 [7.9]	26.8 [7.9]	25.9 [7.6]
		Power	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4
	120°F [48.9°C]	Total BTUH [kW]	31.4 [9.2]	31.2 [9.1]	30.1 [8.8]	28.4 [8.3]	28.2 [8.3]	27.2 [8]	26.3 [7.7]	26.1 [7.6]	25.2 [7.4]	25.8 [7.5]	25.6 [7.5]	24.7 [7.2]	25.7 [7.5]	25.5 [7.5]	24.6 [7.2]
		Sens BTUH [kW]	19.9 [5.8]	19.6 [5.7]	17.8 [5.2]	24.1 [7.1]	23.7 [6.9]	21.6 [6.3]	26.3 [7.7]	26.1 [7.6]	24.7 [7.2]	25.8 [7.5]	25.6 [7.5]	24.7 [7.2]	25.7 [7.5]	25.5 [7.5]	24.6 [7.2]
		Power	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6
	125°F [51.7°C]	Total BTUH [kW]	30.1 [8.8]	29.9 [8.8]	28.8 [8.5]	27 [7.9]	26.8 [7.9]	25.9 [7.6]	24.9 [7.3]	24.8 [7.3]	23.9 [7]	24.4 [7.2]	24.2 [7.1]	23.4 [6.9]	24.3 [7.1]	24.2 [7.1]	23.3 [6.8]
		Sens BTUH [kW]	19.4 [5.7]	19 [5.6]	17.3 [5.1]	23.6 [6.9]	23.2 [6.8]	21.1 [6.2]	24.9 [7.3]	24.8 [7.3]	23.9 [7]	24.4 [7.2]	24.2 [7.1]	23.4 [6.9]	24.3 [7.1]	24.2 [7.1]	23.3 [6.8]
		Power	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.8	3.8

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

Appendix D – Cooling Data for ZR 4Ton

COOLING PERFORMANCE - RACCZR048A																	
Entering Indoor Air @ 80°F [26.7°C] dbE																	
wbE			71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
CFM [L/s]			1800 [850]	1730 [816]	1400 [661]	1800 [850]	1730 [816]	1400 [661]	1800 [850]	1730 [816]	1400 [661]	1800 [850]	1730 [816]	1400 [661]	1800 [850]	1730 [816]	1400 [661]
DR			0.23	0.22	0.18	0.23	0.22	0.18	0.23	0.22	0.18	0.23	0.22	0.18	0.23	0.22	0.18
Outdoor Dry Bulb Temperature	75°F [23.9°C]	Total BTUH [kW]	57.9 [17]	57.5 [16.8]	55.5 [16.3]	53.8 [15.8]	53.4 [15.6]	51.5 [15.1]	50.6 [14.8]	50.2 [14.7]	48.5 [14.2]	49.5 [14.5]	49.2 [14.4]	47.5 [13.9]	48.9 [14.3]	48.5 [14.2]	46.9 [13.7]
		Sens BTUH [kW]	32.7 [9.6]	32.1 [9.4]	29.3 [8.6]	39.1 [11.5]	38.4 [11.3]	35 [10.2]	44.4 [13]	43.6 [12.8]	39.7 [11.6]	46.5 [13.6]	45.7 [13.4]	41.6 [12.2]	48.1 [14.1]	47.2 [13.8]	43 [12.6]
		Power	3.1	3.1	3	3.1	3	3	3	3	3	3	3	3	3	3	3
	80°F [26.7°C]	Total BTUH [kW]	56.3 [16.5]	55.9 [16.4]	54 [15.8]	52.2 [15.3]	51.8 [15.2]	50 [14.7]	49 [14.4]	48.7 [14.3]	47 [13.8]	47.9 [14.1]	47.6 [13.9]	45.9 [13.5]	47.3 [13.9]	47 [13.8]	45.3 [13.3]
		Sens BTUH [kW]	31.9 [9.4]	31.3 [9.2]	28.5 [8.4]	38.3 [11.2]	37.6 [11]	34.2 [10]	43.6 [12.8]	42.8 [12.5]	39 [11.4]	45.7 [13.4]	44.8 [13.1]	40.8 [12]	47.2 [13.8]	46.4 [13.6]	42.2 [12.4]
		Power	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1
	85°F [29.4°C]	Total BTUH [kW]	54.7 [16]	54.3 [15.9]	52.4 [15.4]	50.6 [14.8]	50.2 [14.7]	48.5 [14.2]	47.4 [13.9]	47.1 [13.8]	45.4 [13.3]	46.3 [13.6]	46 [13.5]	44.4 [13]	45.7 [13.4]	45.3 [13.3]	43.8 [12.8]
		Sens BTUH [kW]	31 [9.1]	30.5 [8.9]	27.8 [8.1]	37.4 [11]	36.7 [10.8]	33.5 [9.8]	42.7 [12.5]	42 [12.3]	38.2 [11.2]	44.8 [13.1]	44 [12.9]	40.1 [11.7]	45.7 [13.4]	45.3 [13.3]	41.5 [12.2]
		Power	3.4	3.3	3.3	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
	90°F [32.2°C]	Total BTUH [kW]	53 [15.5]	52.6 [15.4]	50.8 [14.9]	48.9 [14.3]	48.5 [14.2]	46.9 [13.7]	45.7 [13.4]	45.4 [13.3]	43.8 [12.8]	44.6 [13.1]	44.3 [13]	42.8 [12.5]	44 [12.9]	43.7 [12.8]	42.2 [12.4]
		Sens BTUH [kW]	30.2 [8.8]	29.6 [8.7]	27 [7.9]	36.5 [10.7]	35.9 [10.5]	32.7 [9.6]	41.9 [12.3]	41.1 [12]	37.4 [11]	43.9 [12.9]	43.1 [12.6]	39.3 [11.5]	44 [12.9]	43.7 [12.8]	40.7 [11.9]
		Power	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4
	95°F [35.0°C]	Total BTUH [kW]	51.3 [15]	50.9 [14.9]	49.1 [14.4]	47.2 [13.8]	46.8 [13.7]	45.2 [13.2]	44 [12.9]	43.7 [12.8]	42.2 [12.4]	42.9 [12.6]	42.6 [12.5]	41.1 [12]	42.3 [12.4]	42 [12.3]	40.5 [11.9]
		Sens BTUH [kW]	29.2 [8.6]	28.7 [8.4]	26.1 [7.7]	35.6 [10.4]	35 [10.2]	31.8 [9.3]	40.9 [12]	40.2 [11.8]	36.6 [10.7]	42.9 [12.6]	42.2 [12.4]	38.5 [11.3]	42.3 [12.4]	42 [12.3]	39.9 [11.7]
		Power	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6
	100°F [37.8°C]	Total BTUH [kW]	49.5 [14.5]	49.1 [14.4]	47.4 [13.9]	45.4 [13.3]	45.1 [13.2]	43.5 [12.7]	42.2 [12.4]	41.9 [12.3]	40.5 [11.9]	41.1 [12.1]	40.8 [12]	39.4 [11.6]	40.5 [11.9]	40.2 [11.8]	38.8 [11.4]
		Sens BTUH [kW]	28.3 [8.3]	27.8 [8.1]	25.3 [7.4]	34.7 [10.2]	34 [10]	31 [9.1]	40 [11.7]	39.3 [11.5]	35.8 [10.5]	41.1 [12.1]	40.8 [12]	37.6 [11]	40.5 [11.9]	40.2 [11.8]	38.8 [11.4]
		Power	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.9	3.8
	105°F [40.6°C]	Total BTUH [kW]	47.7 [14]	47.3 [13.9]	45.7 [13.4]	43.6 [12.8]	43.3 [12.7]	41.8 [12.2]	40.4 [11.8]	40.1 [11.8]	38.7 [11.3]	39.3 [11.5]	39 [11.4]	37.7 [11]	38.7 [11.3]	38.4 [11.3]	37.1 [10.9]
		Sens BTUH [kW]	27.3 [8]	26.8 [7.9]	24.4 [7.2]	33.7 [9.9]	33.1 [9.7]	30.1 [8.8]	39 [11.4]	38.3 [11.2]	34.9 [10.2]	39.3 [11.5]	39 [11.4]	36.8 [10.8]	38.7 [11.3]	38.4 [11.3]	37.1 [10.9]
		Power	4.1	4.1	4	4.1	4.1	4	4.1	4.1	4	4.1	4.1	4	4.1	4.1	4
	110°F [43.3°C]	Total BTUH [kW]	45.8 [13.4]	45.5 [13.3]	43.9 [12.9]	41.7 [12.2]	41.4 [12.1]	40 [11.7]	38.5 [11.3]	38.3 [11.2]	36.9 [10.8]	37.5 [11]	37.2 [10.9]	35.9 [10.5]	36.8 [10.8]	36.5 [10.7]	35.3 [10.3]
		Sens BTUH [kW]	26.3 [7.7]	25.9 [7.6]	23.6 [6.9]	32.7 [9.6]	32.1 [9.4]	29.2 [8.6]	38 [11.1]	37.3 [10.9]	34 [10]	37.5 [11]	37.2 [10.9]	35.9 [10.5]	36.8 [10.8]	36.5 [10.7]	35.3 [10.3]
		Power	4.3	4.3	4.2	4.3	4.3	4.2	4.3	4.3	4.2	4.3	4.3	4.2	4.3	4.3	4.2
	115°F [46.1°C]	Total BTUH [kW]	43.9 [12.9]	43.6 [12.8]	42.1 [12.3]	39.8 [11.7]	39.5 [11.6]	38.1 [11.2]	36.6 [10.7]	36.4 [10.7]	35.1 [10.3]	35.5 [10.4]	35.3 [10.3]	34.1 [10]	34.9 [10.2]	34.6 [10.2]	33.4 [9.8]
		Sens BTUH [kW]	25.3 [7.4]	24.8 [7.3]	22.6 [6.6]	31.7 [9.3]	31.1 [9.1]	28.3 [8.3]	36.6 [10.7]	36.3 [10.6]	33.1 [9.7]	35.5 [10.4]	35.3 [10.3]	34.1 [10]	34.9 [10.2]	34.6 [10.2]	33.4 [9.8]
		Power	4.5	4.5	4.5	4.5	4.5	4.4	4.5	4.5	4.4	4.5	4.5	4.4	4.5	4.5	4.4
	120°F [48.9°C]	Total BTUH [kW]	42 [12.3]	41.6 [12.2]	40.2 [11.8]	37.8 [11.1]	37.6 [11]	36.3 [10.6]	34.7 [10.2]	34.4 [10.1]	33.2 [9.7]	33.6 [9.8]	33.3 [9.8]	32.2 [9.4]	32.9 [9.7]	32.7 [9.6]	31.6 [9.3]
		Sens BTUH [kW]	24.3 [7.1]	23.8 [7]	21.7 [6.4]	30.6 [9]	30.1 [8.8]	27.4 [8]	34.7 [10.2]	34.4 [10.1]	32.2 [9.4]	33.6 [9.8]	33.3 [9.8]	32.2 [9.4]	32.9 [9.7]	32.7 [9.6]	31.6 [9.3]
		Power	4.8	4.8	4.7	4.8	4.8	4.7	4.8	4.7	4.7	4.8	4.7	4.7	4.8	4.7	4.7
	125°F [51.7°C]	Total BTUH [kW]	39.9 [11.7]	39.7 [11.6]	38.3 [11.2]	35.8 [10.5]	35.6 [10.4]	34.3 [10.1]	32.7 [9.6]	32.4 [9.5]	31.3 [9.2]	31.6 [9.3]	31.4 [9.2]	30.3 [8.9]	30.9 [9.1]	30.7 [9]	29.7 [8.7]
		Sens BTUH [kW]	23.2 [6.8]	22.8 [6.7]	20.7 [6.1]	29.6 [8.7]	29 [8.5]	26.4 [7.7]	32.7 [9.6]	32.4 [9.5]	31.2 [9.1]	31.6 [9.3]	31.4 [9.2]	30.3 [8.9]	30.9 [9.1]	30.7 [9]	29.7 [8.7]
		Power	5	5	4.9	5	5	4.9	5	5	4.9	5	5	4.9	5	5	4.9

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

Appendix D – Cooling Data for ZR 5Ton

COOLING PERFORMANCE - RACCZR060A																		
Entering Indoor Air @ 80°F [26.7°C] dbE																		
wbE			71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
CFM [L/s]			2250 [1062]	1950 [920]	1750 [826]	2250 [1062]	1950 [920]	1750 [826]	2250 [1062]	1950 [920]	1750 [826]	2250 [1062]	1950 [920]	1750 [826]	2250 [1062]	1950 [920]	1750 [826]
DR			0.21	0.18	0.16	0.21	0.18	0.16	0.21	0.18	0.16	0.21	0.18	0.16	0.21	0.18	0.16
Outdoor Dry Bulb Temperature	75°F [23.9°C]	Total BTUH [kW]	72.9 [21.4]	70.9 [20.8]	69.6 [20.4]	68.5 [20.1]	66.7 [19.5]	65.4 [19.2]	64.6 [18.9]	62.9 [18.4]	61.7 [18.1]	62.9 [18.4]	61.2 [17.9]	60.1 [17.6]	61.5 [18]	59.9 [17.5]	58.7 [17.2]
		Sens BTUH [kW]	41.9 [12.3]	39.1 [11.5]	37.2 [10.9]	49.9 [14.6]	46.6 [13.6]	44.4 [13]	56.8 [16.7]	53 [15.5]	50.5 [14.8]	59.7 [17.5]	55.7 [16.3]	53 [15.5]	61.5 [18]	57.8 [16.9]	55 [16.1]
		Power	4	4	4	3.5	3.5	3.5	3	3	3	2.8	2.8	2.7	2.5	2.5	2.5
	80°F [26.7°C]	Total BTUH [kW]	71 [20.8]	69.1 [20.2]	67.8 [19.9]	66.6 [19.5]	64.8 [19]	63.6 [18.6]	62.7 [18.4]	61 [17.9]	59.9 [17.5]	61 [17.9]	59.4 [17.4]	58.3 [17.1]	59.6 [17.5]	58 [17]	56.9 [16.7]
		Sens BTUH [kW]	41 [12]	38.2 [11.2]	36.4 [10.7]	49 [14.4]	45.7 [13.4]	43.5 [12.8]	55.9 [16.4]	52.2 [15.3]	49.7 [14.6]	58.8 [17.2]	54.8 [16.1]	52.2 [15.3]	59.6 [17.5]	56.9 [16.7]	54.2 [15.9]
		Power	4.2	4.1	4.1	3.7	3.6	3.6	3.2	3.1	3.1	2.9	2.9	2.8	2.7	2.6	2.6
	85°F [29.4°C]	Total BTUH [kW]	69 [20.2]	67.1 [19.7]	65.9 [19.3]	64.6 [18.9]	62.9 [18.4]	61.7 [18.1]	60.7 [17.8]	59.1 [17.3]	58 [17]	59 [17.3]	57.4 [16.8]	56.4 [16.5]	57.6 [16.9]	56 [16.4]	55 [16.1]
		Sens BTUH [kW]	40 [11.7]	37.3 [10.9]	35.5 [10.4]	48 [14.1]	44.8 [13.1]	42.7 [12.5]	54.9 [16.1]	51.3 [15]	48.8 [14.3]	57.8 [16.9]	53.9 [15.8]	51.3 [15]	57.6 [16.9]	56 [16.4]	53.3 [15.6]
		Power	4.4	4.3	4.3	3.9	3.8	3.8	3.4	3.3	3.3	3.1	3.1	3.1	2.9	2.8	2.8
	90°F [32.2°C]	Total BTUH [kW]	67 [19.6]	65.2 [19.1]	63.9 [18.7]	62.6 [18.3]	60.9 [17.8]	59.7 [17.5]	58.7 [17.2]	57.1 [16.7]	56 [16.4]	57 [16.7]	55.4 [16.2]	54.4 [15.9]	55.6 [16.3]	54.1 [15.8]	53.1 [15.5]
		Sens BTUH [kW]	39 [11.4]	36.4 [10.7]	34.6 [10.1]	47 [13.8]	43.9 [12.9]	41.8 [12.2]	53.9 [15.8]	50.3 [14.7]	47.9 [14]	56.7 [16.6]	52.9 [15.5]	50.4 [14.8]	55.6 [16.3]	54.1 [15.8]	52.4 [15.4]
		Power	4.7	4.6	4.6	4.2	4.1	4.1	3.7	3.6	3.6	3.4	3.4	3.4	3.2	3.2	3.1
	95°F [35.0°C]	Total BTUH [kW]	64.9 [19]	63.1 [18.5]	61.9 [18.1]	60.5 [17.7]	58.8 [17.2]	57.7 [16.9]	56.6 [16.6]	55 [16.1]	54 [15.8]	54.9 [16.1]	53.4 [15.6]	52.4 [15.4]	53.5 [15.7]	52 [15.2]	51 [15]
		Sens BTUH [kW]	37.9 [11.1]	35.3 [10.4]	33.6 [9.9]	45.9 [13.5]	42.8 [12.6]	40.8 [11.9]	52.8 [15.5]	49.3 [14.4]	46.9 [13.7]	54.9 [16.1]	51.9 [15.2]	49.4 [14.5]	53.5 [15.7]	52 [15.2]	51 [15]
		Power	5.1	5	5	4.6	4.6	4.5	4.1	4.1	4	3.9	3.8	3.8	3.6	3.6	3.5
	100°F [37.8°C]	Total BTUH [kW]	62.7 [18.4]	61 [17.9]	59.9 [17.5]	58.3 [17.1]	56.7 [16.6]	55.7 [16.3]	54.4 [15.9]	52.9 [15.5]	51.9 [15.2]	52.7 [15.5]	51.3 [15]	50.3 [14.8]	51.3 [15]	49.9 [14.6]	49 [14.4]
		Sens BTUH [kW]	36.7 [10.8]	34.3 [10]	32.6 [9.6]	44.7 [13.1]	41.7 [12.2]	39.7 [11.6]	51.7 [15.1]	48.2 [14.1]	45.9 [13.4]	52.7 [15.5]	50.8 [14.9]	48.4 [14.2]	51.3 [15]	49.9 [14.6]	49 [14.4]
		Power	5.6	5.6	5.5	5.1	5.1	5	4.6	4.6	4.5	4.4	4.3	4.3	4.1	4.1	4
	105°F [40.6°C]	Total BTUH [kW]	60.5 [17.7]	58.9 [17.2]	57.8 [16.9]	56.1 [16.4]	54.6 [16]	53.6 [15.7]	52.2 [15.3]	50.8 [14.9]	49.8 [14.6]	50.5 [14.8]	49.1 [14.4]	48.2 [14.1]	49.1 [14.4]	47.8 [14]	46.9 [13.7]
		Sens BTUH [kW]	35.5 [10.4]	33.1 [9.7]	31.5 [9.2]	43.5 [12.8]	40.6 [11.9]	38.7 [11.3]	50.4 [14.8]	47.1 [13.8]	44.8 [13.1]	50.5 [14.8]	49.1 [14.4]	47.3 [13.9]	49.1 [14.4]	47.8 [14]	46.9 [13.7]
		Power	6.3	6.2	6.1	5.8	5.7	5.6	5.3	5.2	5.1	5	4.9	4.9	4.8	4.7	4.7
	110°F [43.3°C]	Total BTUH [kW]	58.2 [17.1]	56.6 [16.6]	55.6 [16.3]	53.8 [15.8]	52.4 [15.3]	51.4 [15.1]	49.9 [14.6]	48.6 [14.2]	47.7 [14]	48.2 [14.1]	46.9 [13.8]	46.1 [13.5]	46.8 [13.7]	45.6 [13.3]	44.7 [13.1]
		Sens BTUH [kW]	34.2 [10]	31.9 [9.4]	30.4 [8.9]	42.2 [12.4]	39.4 [11.5]	37.5 [11]	49.2 [14.4]	45.9 [13.4]	43.7 [12.8]	48.2 [14.1]	46.9 [13.8]	46.1 [13.5]	46.8 [13.7]	45.6 [13.3]	44.7 [13.1]
		Power	7	6.9	6.8	6.5	6.4	6.3	6	5.9	5.9	5.7	5.7	5.6	5.5	5.4	5.4
	115°F [46.1°C]	Total BTUH [kW]	55.9 [16.4]	54.4 [15.9]	53.4 [15.6]	51.5 [15.1]	50.1 [14.7]	49.2 [14.4]	47.6 [13.9]	46.3 [13.6]	45.4 [13.3]	45.9 [13.5]	44.7 [13.1]	43.8 [12.8]	44.5 [13]	43.3 [12.7]	42.5 [12.4]
		Sens BTUH [kW]	32.9 [9.6]	30.7 [9]	29.2 [8.6]	40.9 [12]	38.2 [11.2]	36.3 [10.6]	47.6 [13.9]	44.6 [13.1]	42.5 [12.4]	45.9 [13.5]	44.7 [13.1]	43.8 [12.8]	44.5 [13]	43.3 [12.7]	42.5 [12.4]
		Power	7.8	7.7	7.6	7.3	7.2	7.1	6.8	6.7	6.7	6.6	6.5	6.4	6.3	6.2	6.2
	120°F [48.9°C]	Total BTUH [kW]	53.5 [15.7]	52.1 [15.3]	51.1 [15]	49.1 [14.4]	47.8 [14]	46.9 [13.7]	45.2 [13.2]	44 [12.9]	43.2 [12.6]	43.5 [12.8]	42.3 [12.4]	41.6 [12.2]	42.1 [12.3]	41 [12]	40.2 [11.8]
		Sens BTUH [kW]	31.5 [9.2]	29.4 [8.6]	28 [8.2]	39.5 [11.6]	36.8 [10.8]	35.1 [10.3]	45.2 [13.2]	43.3 [12.7]	41.2 [12.1]	43.5 [12.8]	42.3 [12.4]	41.6 [12.2]	42.1 [12.3]	41 [12]	40.2 [11.8]
		Power	8.7	8.6	8.5	8.2	8.1	8.1	7.7	7.6	7.6	7.5	7.4	7.3	7.2	7.1	7.1
	125°F [51.7°C]	Total BTUH [kW]	51.1 [15]	49.7 [14.6]	48.7 [14.3]	46.7 [13.7]	45.4 [13.3]	44.6 [13.1]	42.8 [12.5]	41.6 [12.2]	40.8 [12]	41.1 [12]	40 [11.7]	39.2 [11.5]	39.7 [11.6]	38.6 [11.3]	37.9 [11.1]
		Sens BTUH [kW]	30 [8.8]	28 [8.2]	26.6 [7.8]	38 [11.1]	35.5 [10.4]	33.8 [9.9]	42.8 [12.5]	41.6 [12.2]	39.9 [11.7]	41.1 [12]	40 [11.7]	39.2 [11.5]	39.7 [11.6]	38.6 [11.3]	37.9 [11.1]
		Power	9.8	9.6	9.6	9.3	9.1	9.1	8.8	8.7	8.6	8.5	8.4	8.3	8.3	8.2	8.1

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

COOLING PERFORMANCE - RACCZT036A																		
Entering Indoor Air @ 80ºF [26.7ºC] dbE																		
wbE			71ºF [21.7ºC]			67ºF [19.4ºC]			63ºF [17.2ºC]			61ºF [16.1ºC]			59ºF [15.0ºC]		
CFM [L/s]			1350 [637]	1260 [595]	1050 [496]	1350 [637]	1260 [595]	1050 [496]	1350 [637]	1260 [595]	1050 [496]	1350 [637]	1260 [595]	1050 [496]	1350 [637]	1260 [595]	1050 [496]
DR			0.18	0.17	0.14	0.18	0.17	0.14	0.18	0.17	0.14	0.18	0.17	0.14	0.18	0.17	0.14
Outdoor Dry Bulb Temperature	75ºF [23.9ºC]	Total BTUH [kW]	48.3 [14.2]	47.7 [14]	46.2 [13.6]	45.2 [13.3]	44.6 [13.1]	43.3 [12.7]	43.1 [12.6]	42.6 [12.5]	41.3 [12.1]	42.6 [12.5]	42 [12.3]	40.8 [11.9]	42.5 [12.5]	42 [12.3]	40.7 [11.9]
		Sens BTUH [kW]	27.8 [8.2]	26.9 [7.9]	24.9 [7.3]	32.1 [9.4]	31.1 [9.1]	28.7 [8.4]	35.7 [10.5]	34.5 [10.1]	31.8 [9.3]	37.4 [10.9]	36.2 [10.6]	33.3 [9.8]	39.1 [11.4]	37.8 [11.1]	34.9 [10.2]
		Power	1.9	1.9	1.8	1.9	1.9	1.8	1.9	1.9	1.8	1.9	1.9	1.8	1.9	1.8	1.8
	80ºF [26.7ºC]	Total BTUH [kW]	47 [13.8]	46.4 [13.6]	45 [13.2]	43.9 [12.9]	43.3 [12.7]	42 [12.3]	41.8 [12.2]	41.2 [12.1]	40 [11.7]	41.2 [12.1]	40.7 [11.9]	39.5 [11.6]	41.2 [12.1]	40.6 [11.9]	39.4 [11.5]
		Sens BTUH [kW]	27.1 [7.9]	26.2 [7.7]	24.2 [7.1]	31.4 [9.2]	30.4 [8.9]	28 [8.2]	34.9 [10.2]	33.8 [9.9]	31.2 [9.1]	36.6 [10.7]	35.4 [10.4]	32.7 [9.6]	38.3 [11.2]	37.1 [10.9]	34.2 [10]
		Power	2	2	2	2	2	1.9	2	2	1.9	2	2	1.9	2	2	1.9
	85ºF [29.4ºC]	Total BTUH [kW]	45.6 [13.4]	45 [13.2]	43.7 [12.8]	42.5 [12.5]	42 [12.3]	40.7 [11.9]	40.4 [11.8]	39.9 [11.7]	38.7 [11.3]	39.9 [11.7]	39.4 [11.5]	38.2 [11.2]	39.8 [11.7]	39.3 [11.5]	38.1 [11.2]
		Sens BTUH [kW]	26.4 [7.7]	25.5 [7.5]	23.5 [6.9]	30.7 [9]	29.7 [8.7]	27.4 [8]	34.2 [10]	33.1 [9.7]	30.5 [8.9]	35.9 [10.5]	34.7 [10.2]	32 [9.4]	37.6 [11]	36.4 [10.7]	33.6 [9.8]
		Power	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2
	90ºF [32.2ºC]	Total BTUH [kW]	44.3 [13]	43.7 [12.8]	42.4 [12.4]	41.2 [12.1]	40.7 [11.9]	39.4 [11.6]	39.1 [11.5]	38.6 [11.3]	37.4 [11]	38.6 [11.3]	38.1 [11.2]	36.9 [10.8]	38.5 [11.3]	38 [11.1]	36.8 [10.8]
		Sens BTUH [kW]	25.7 [7.5]	24.9 [7.3]	22.9 [6.7]	30 [8.8]	29 [8.5]	26.7 [7.8]	33.5 [9.8]	32.4 [9.5]	29.9 [8.8]	35.2 [10.3]	34.1 [10]	31.4 [9.2]	36.9 [10.8]	35.7 [10.5]	32.9 [9.6]
		Power	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	95ºF [35.0ºC]	Total BTUH [kW]	42.9 [12.6]	42.4 [12.4]	41.1 [12]	39.8 [11.7]	39.3 [11.5]	38.1 [11.2]	37.7 [11.1]	37.3 [10.9]	36.1 [10.6]	37.2 [10.9]	36.7 [10.8]	35.6 [10.4]	37.1 [10.9]	36.7 [10.7]	35.5 [10.4]
		Sens BTUH [kW]	25 [7.3]	24.2 [7.1]	22.3 [6.5]	29.3 [8.6]	28.3 [8.3]	26.1 [7.7]	32.8 [9.6]	31.8 [9.3]	29.3 [8.6]	34.5 [10.1]	33.4 [9.8]	30.8 [9]	36.2 [10.6]	35 [10.3]	32.3 [9.5]
		Power	2.4	2.4	2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.4	2.3	2.3	2.4	2.3	2.3
	100ºF [37.8ºC]	Total BTUH [kW]	41.6 [12.2]	41 [12]	39.8 [11.7]	38.5 [11.3]	38 [11.1]	36.8 [10.8]	36.4 [10.7]	35.9 [10.5]	34.8 [10.2]	35.9 [10.5]	35.4 [10.4]	34.3 [10.1]	35.8 [10.5]	35.3 [10.4]	34.2 [10]
		Sens BTUH [kW]	24.3 [7.1]	23.6 [6.9]	21.7 [6.4]	28.6 [8.4]	27.7 [8.1]	25.5 [7.5]	32.2 [9.4]	31.1 [9.1]	28.7 [8.4]	33.9 [9.9]	32.8 [9.6]	30.2 [8.9]	35.6 [10.4]	34.4 [10.1]	31.7 [9.3]
		Power	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4
	105ºF [40.6ºC]	Total BTUH [kW]	40.2 [11.8]	39.7 [11.6]	38.5 [11.3]	37.1 [10.9]	36.7 [10.7]	35.6 [10.4]	35 [10.3]	34.6 [10.1]	33.5 [9.8]	34.5 [10.1]	34.1 [10]	33 [9.7]	34.4 [10.1]	34 [10]	33 [9.7]
		Sens BTUH [kW]	23.7 [6.9]	22.9 [6.7]	21.2 [6.2]	28 [8.2]	27.1 [7.9]	25 [7.3]	31.6 [9.2]	30.5 [8.9]	28.2 [8.3]	33.2 [9.7]	32.2 [9.4]	29.7 [8.7]	34.4 [10.1]	33.8 [9.9]	31.2 [9.1]
		Power	2.7	2.7	2.6	2.7	2.7	2.6	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6	2.6
	110ºF [43.3ºC]	Total BTUH [kW]	38.9 [11.4]	38.4 [11.2]	37.2 [10.9]	35.8 [10.5]	35.3 [10.4]	34.3 [10]	33.7 [9.9]	33.3 [9.7]	32.2 [9.4]	33.2 [9.7]	32.7 [9.6]	31.7 [9.3]	33.1 [9.7]	32.6 [9.6]	31.7 [9.3]
		Sens BTUH [kW]	23.1 [6.8]	22.4 [6.6]	20.6 [6]	27.4 [8]	26.5 [7.8]	24.4 [7.2]	30.9 [9.1]	29.9 [8.8]	27.6 [8.1]	32.6 [9.6]	31.6 [9.2]	29.1 [8.5]	33.1 [9.7]	32.6 [9.6]	30.6 [9]
		Power	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	115ºF [46.1ºC]	Total BTUH [kW]	37.5 [11]	37 [10.9]	35.9 [10.5]	34.4 [10.1]	34 [10]	33 [9.7]	32.3 [9.5]	31.9 [9.4]	30.9 [9.1]	31.8 [9.3]	31.4 [9.2]	30.4 [8.9]	31.7 [9.3]	31.3 [9.2]	30.4 [8.9]
		Sens BTUH [kW]	22.5 [6.6]	21.8 [6.4]	20.1 [5.9]	26.8 [7.9]	25.9 [7.6]	23.9 [7]	30.4 [8.9]	29.4 [8.6]	27.1 [7.9]	31.8 [9.3]	31 [9.1]	28.6 [8.4]	31.7 [9.3]	31.3 [9.2]	30.1 [8.8]
		Power	3	3	3	3	3	2.9	3	3	2.9	3	3	2.9	3	3	2.9
	120ºF [48.9ºC]	Total BTUH [kW]	36.2 [10.6]	35.7 [10.5]	34.6 [10.1]	33.1 [9.7]	32.7 [9.6]	31.7 [9.3]	31 [9.1]	30.6 [9]	29.6 [8.7]	30.4 [8.9]	30.1 [8.8]	29.1 [8.5]	30.4 [8.9]	30 [8.8]	29.1 [8.5]
		Sens BTUH [kW]	22 [6.4]	21.2 [6.2]	19.6 [5.7]	26.2 [7.7]	25.4 [7.4]	23.4 [6.9]	29.8 [8.7]	28.8 [8.4]	26.6 [7.8]	30.4 [8.9]	30.1 [8.8]	28.1 [8.2]	30.4 [8.9]	30 [8.8]	29.1 [8.5]
		Power	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.2	3.1
	125ºF [51.7ºC]	Total BTUH [kW]	34.8 [10.2]	34.4 [10.1]	33.3 [9.8]	31.7 [9.3]	31.3 [9.2]	30.4 [8.9]	29.6 [8.7]	29.2 [8.6]	28.3 [8.3]	29.1 [8.5]	28.7 [8.4]	27.8 [8.2]	29 [8.5]	28.6 [8.4]	27.8 [8.1]
		Sens BTUH [kW]	21.4 [6.3]	20.7 [6.1]	19.1 [5.6]	25.7 [7.5]	24.9 [7.3]	22.9 [6.7]	29.2 [8.6]	28.3 [8.3]	26.1 [7.6]	29.1 [8.5]	28.7 [8.4]	27.6 [8.1]	29 [8.5]	28.6 [8.4]	27.8 [8.1]
		Power	3.4	3.4	3.3	3.4	3.4	3.3	3.4	3.4	3.3	3.4	3.3	3.3	3.4	3.3	3.3

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

Appendix D – Cooling Data for ZT 4Ton

COOLING PERFORMANCE - RACCZT048A																		
Entering Indoor Air @ 80°F [26.7°C] dbE																		
wbE			71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
CFM [L/s]			1800 [850]	1570 [741]	1400 [661]	1800 [850]	1570 [741]	1400 [661]	1800 [850]	1570 [741]	1400 [661]	1800 [850]	1570 [741]	1400 [661]	1800 [850]	1570 [741]	1400 [661]
DR			0.21	0.19	0.17	0.21	0.19	0.17	0.21	0.19	0.17	0.21	0.19	0.17	0.21	0.19	0.17
Outdoor Dry Bulb Temperature	75°F [23.9°C]	Total BTUH [kW]	61.1 [17.9]	59.5 [17.4]	58.3 [17.1]	56.9 [16.7]	55.4 [16.2]	54.3 [15.9]	53.6 [15.7]	52.2 [15.3]	51.2 [15]	52.5 [15.4]	51.2 [15]	50.2 [14.7]	51.9 [15.2]	50.5 [14.8]	49.5 [14.5]
		Sens BTUH [kW]	34.2 [10]	32 [9.4]	30.4 [8.9]	40.9 [12]	38.3 [11.2]	36.3 [10.6]	46.4 [13.6]	43.5 [12.7]	41.3 [12.1]	48.6 [14.2]	45.5 [13.3]	43.2 [12.7]	50.3 [14.7]	47.1 [13.8]	44.7 [13.1]
		Power	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6	2.6	2.7	2.6	2.6
	80°F [26.7°C]	Total BTUH [kW]	59.4 [17.4]	57.9 [17]	56.8 [16.6]	55.3 [16.2]	53.8 [15.8]	52.8 [15.5]	52 [15.2]	50.7 [14.8]	49.7 [14.6]	50.9 [14.9]	49.6 [14.5]	48.6 [14.2]	50.3 [14.7]	49 [14.3]	48 [14.1]
		Sens BTUH [kW]	33.3 [9.8]	31.2 [9.1]	29.6 [8.7]	40 [11.7]	37.4 [11]	35.5 [10.4]	45.6 [13.4]	42.7 [12.5]	40.5 [11.9]	47.8 [14]	44.7 [13.1]	42.4 [12.4]	49.4 [14.5]	46.2 [13.5]	43.9 [12.9]
		Power	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.7	2.8	2.8	2.7
	85°F [29.4°C]	Total BTUH [kW]	57.8 [16.9]	56.3 [16.5]	55.2 [16.2]	53.6 [15.7]	52.2 [15.3]	51.2 [15]	50.4 [14.8]	49.1 [14.4]	48.1 [14.1]	49.3 [14.4]	48 [14.1]	47 [13.8]	48.6 [14.2]	47.3 [13.9]	46.4 [13.6]
		Sens BTUH [kW]	32.4 [9.5]	30.3 [8.9]	28.8 [8.4]	39.1 [11.5]	36.6 [10.7]	34.7 [10.2]	44.7 [13.1]	41.8 [12.3]	39.7 [11.6]	46.9 [13.7]	43.9 [12.9]	41.6 [12.2]	48.5 [14.2]	45.4 [13.3]	43.1 [12.6]
		Power	3	2.9	2.9	3	2.9	2.9	3	2.9	2.9	3	2.9	2.9	3	2.9	2.9
	90°F [32.2°C]	Total BTUH [kW]	56.1 [16.4]	54.6 [16]	53.5 [15.7]	51.9 [15.2]	50.5 [14.8]	49.5 [14.5]	48.6 [14.3]	47.4 [13.9]	46.5 [13.6]	47.5 [13.9]	46.3 [13.6]	45.4 [13.3]	46.9 [13.7]	45.7 [13.4]	44.8 [13.1]
		Sens BTUH [kW]	31.5 [9.2]	29.5 [8.6]	28 [8.2]	38.2 [11.2]	35.7 [10.5]	33.9 [9.9]	43.7 [12.8]	40.9 [12]	38.9 [11.4]	45.9 [13.5]	43 [12.6]	40.8 [12]	46.9 [13.7]	44.5 [13]	42.3 [12.4]
		Power	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
	95°F [35.0°C]	Total BTUH [kW]	54.3 [15.9]	52.9 [15.5]	51.9 [15.2]	50.1 [14.7]	48.8 [14.3]	47.9 [14]	46.9 [13.7]	45.7 [13.4]	44.8 [13.1]	45.8 [13.4]	44.6 [13.1]	43.7 [12.8]	45.1 [13.2]	44 [12.9]	43.1 [12.6]
		Sens BTUH [kW]	30.5 [8.9]	28.6 [8.4]	27.1 [7.9]	37.2 [10.9]	34.8 [10.2]	33.1 [9.7]	42.8 [12.5]	40 [11.7]	38 [11.1]	45 [13.2]	42.1 [12.3]	40 [11.7]	45.1 [13.2]	43.6 [12.8]	41.4 [12.1]
		Power	3.3	3.3	3.3	3.3	3.3	3.2	3.3	3.3	3.2	3.3	3.3	3.2	3.3	3.3	3.2
	100°F [37.8°C]	Total BTUH [kW]	52.5 [15.4]	51.1 [15]	50.1 [14.7]	48.3 [14.2]	47.1 [13.8]	46.1 [13.5]	45.1 [13.2]	43.9 [12.9]	43 [12.6]	44 [12.9]	42.8 [12.6]	42 [12.3]	43.3 [12.7]	42.2 [12.4]	41.4 [12.1]
		Sens BTUH [kW]	29.5 [8.7]	27.6 [8.1]	26.2 [7.7]	36.2 [10.6]	33.9 [9.9]	32.2 [9.4]	41.8 [12.2]	39.1 [11.5]	37.1 [10.9]	44 [12.9]	41.2 [12.1]	39.1 [11.5]	43.3 [12.7]	42.2 [12.4]	40.5 [11.9]
		Power	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5	3.4
	105°F [40.6°C]	Total BTUH [kW]	50.7 [14.8]	49.3 [14.5]	48.4 [14.2]	46.5 [13.6]	45.3 [13.3]	44.4 [13]	43.2 [12.7]	42.1 [12.3]	41.3 [12.1]	42.1 [12.3]	41 [12]	40.2 [11.8]	41.5 [12.2]	40.4 [11.8]	39.6 [11.6]
		Sens BTUH [kW]	28.5 [8.4]	26.7 [7.8]	25.3 [7.4]	35.2 [10.3]	32.9 [9.7]	31.3 [9.2]	40.8 [11.9]	38.2 [11.2]	36.2 [10.6]	42.1 [12.3]	40.2 [11.8]	38.2 [11.2]	41.5 [12.2]	40.4 [11.8]	39.6 [11.6]
		Power	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.6
	110°F [43.3°C]	Total BTUH [kW]	48.8 [14.3]	47.5 [13.9]	46.6 [13.6]	44.6 [13.1]	43.4 [12.7]	42.6 [12.5]	41.3 [12.1]	40.3 [11.8]	39.5 [11.6]	40.2 [11.8]	39.2 [11.5]	38.4 [11.3]	39.6 [11.6]	38.5 [11.3]	37.8 [11.1]
		Sens BTUH [kW]	27.5 [8]	25.7 [7.5]	24.4 [7.2]	34.2 [10]	32 [9.4]	30.4 [8.9]	39.7 [11.6]	37.2 [10.9]	35.3 [10.3]	40.2 [11.8]	39.2 [11.5]	37.2 [10.9]	39.6 [11.6]	38.5 [11.3]	37.8 [11.1]
		Power	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.9	3.8
	115°F [46.1°C]	Total BTUH [kW]	46.8 [13.7]	45.6 [13.4]	44.7 [13.1]	42.6 [12.5]	41.5 [12.2]	40.7 [11.9]	39.4 [11.5]	38.4 [11.2]	37.6 [11]	38.3 [11.2]	37.3 [10.9]	36.6 [10.7]	37.6 [11]	36.6 [10.7]	35.9 [10.5]
		Sens BTUH [kW]	26.4 [7.7]	24.7 [7.2]	23.5 [6.9]	33.1 [9.7]	31 [9.1]	29.4 [8.6]	38.7 [11.3]	36.2 [10.6]	34.4 [10.1]	38.3 [11.2]	37.3 [10.9]	36.3 [10.6]	37.6 [11]	36.6 [10.7]	35.9 [10.5]
		Power	4.2	4.1	4.1	4.2	4.1	4.1	4.2	4.1	4.1	4.2	4.1	4.1	4.2	4.1	4.1
	120°F [48.9°C]	Total BTUH [kW]	44.8 [13.1]	43.6 [12.8]	42.8 [12.5]	40.6 [11.9]	39.6 [11.6]	38.8 [11.4]	37.4 [11]	36.4 [10.7]	35.7 [10.5]	36.3 [10.6]	35.3 [10.4]	34.6 [10.2]	35.6 [10.4]	34.7 [10.2]	34 [10]
		Sens BTUH [kW]	25.3 [7.4]	23.7 [6.9]	22.5 [6.6]	32 [9.4]	29.9 [8.8]	28.4 [8.3]	37.4 [11]	35.2 [10.3]	33.4 [9.8]	36.3 [10.6]	35.3 [10.4]	34.6 [10.2]	35.6 [10.4]	34.7 [10.2]	34 [10]
		Power	4.4	4.4	4.3	4.4	4.4	4.3	4.4	4.3	4.3	4.4	4.3	4.3	4.4	4.3	4.3
	125°F [51.7°C]	Total BTUH [kW]	42.8 [12.5]	41.7 [12.2]	40.8 [12]	38.6 [11.3]	37.6 [11]	36.8 [10.8]	35.3 [10.4]	34.4 [10.1]	33.8 [9.9]	34.2 [10]	33.4 [9.8]	32.7 [9.6]	33.6 [9.8]	32.7 [9.6]	32.1 [9.4]
		Sens BTUH [kW]	24.2 [7.1]	22.6 [6.6]	21.5 [6.3]	30.8 [9]	28.9 [8.5]	27.4 [8]	35.3 [10.4]	34.1 [10]	32.4 [9.5]	34.2 [10]	33.4 [9.8]	32.7 [9.6]	33.6 [9.8]	32.7 [9.6]	32.1 [9.4]
		Power	4.7	4.6	4.6	4.7	4.6	4.6	4.7	4.6	4.6	4.7	4.6	4.5	4.6	4.6	4.5

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

COOLING PERFORMANCE - RACCZT060A																	
Entering Indoor Air @ 80ºF [26.7ºC] dbE																	
wbE			71ºF [21.7ºC]			67ºF [19.4ºC]			63ºF [17.2ºC]			61ºF [16.1ºC]			59ºF [15.0ºC]		
CFM [L/s]			2250 [1062]	1815 [857]	1750 [826]	2250 [1062]	1815 [857]	1750 [826]	2250 [1062]	1815 [857]	1750 [826]	2250 [1062]	1815 [857]	1750 [826]	2250 [1062]	1815 [857]	1750 [826]
DR			0.15	0.12	0.11	0.15	0.12	0.11	0.15	0.12	0.11	0.15	0.12	0.11	0.15	0.12	0.11
Outdoor Dry Bulb Temperature	75ºF [23.9ºC]	Total BTUH [kW]	76.1 [22.3]	72.9 [21.4]	72.5 [21.2]	71.7 [21]	68.7 [20.1]	68.2 [20]	67.7 [19.8]	64.9 [19]	64.4 [18.9]	66 [19.3]	63.2 [18.5]	62.8 [18.4]	64.6 [18.9]	61.9 [18.1]	61.5 [18]
		Sens BTUH [kW]	44.6 [13.1]	40.1 [11.7]	39.4 [11.6]	52.9 [15.5]	47.6 [13.9]	46.8 [13.7]	60.1 [17.6]	54 [15.8]	53.1 [15.6]	63 [18.5]	56.7 [16.6]	55.7 [16.3]	64.6 [18.9]	58.8 [17.2]	57.8 [16.9]
		Power	3.6	3.5	3.5	3.1	3	3	2.6	2.5	2.5	2.3	2.3	2.3	2.1	2	2
	80ºF [26.7ºC]	Total BTUH [kW]	74.2 [21.7]	71.1 [20.8]	70.6 [20.7]	69.7 [20.4]	66.8 [19.6]	66.4 [19.4]	65.7 [19.3]	63 [18.5]	62.6 [18.3]	64 [18.8]	61.4 [18]	61 [17.9]	62.6 [18.3]	60 [17.6]	59.6 [17.5]
		Sens BTUH [kW]	43.6 [12.8]	39.2 [11.5]	38.6 [11.3]	52 [15.2]	46.7 [13.7]	45.9 [13.5]	59.1 [17.3]	53.2 [15.6]	52.3 [15.3]	62.1 [18.2]	55.8 [16.4]	54.9 [16.1]	62.6 [18.3]	57.9 [17]	57 [16.7]
		Power	3.7	3.6	3.6	3.2	3.1	3.1	2.7	2.6	2.6	2.4	2.4	2.4	2.2	2.1	2.1
	85ºF [29.4ºC]	Total BTUH [kW]	72.2 [21.1]	69.1 [20.3]	68.7 [20.1]	67.7 [19.8]	64.9 [19]	64.4 [18.9]	63.7 [18.7]	61.1 [17.9]	60.7 [17.8]	62 [18.2]	59.4 [17.4]	59 [17.3]	60.6 [17.8]	58 [17]	57.7 [16.9]
		Sens BTUH [kW]	42.6 [12.5]	38.3 [11.2]	37.7 [11]	50.9 [14.9]	45.8 [13.4]	45.1 [13.2]	58.1 [17]	52.3 [15.3]	51.4 [15.1]	61.1 [17.9]	54.9 [16.1]	54 [15.8]	60.6 [17.8]	57 [16.7]	56.1 [16.4]
		Power	3.9	3.8	3.8	3.4	3.3	3.3	2.9	2.8	2.8	2.6	2.6	2.6	2.4	2.3	2.3
	90ºF [32.2ºC]	Total BTUH [kW]	70.1 [20.5]	67.2 [19.7]	66.7 [19.5]	65.6 [19.2]	62.9 [18.4]	62.5 [18.3]	61.6 [18.1]	59.1 [17.3]	58.7 [17.2]	59.9 [17.6]	57.4 [16.8]	57.1 [16.7]	58.5 [17.1]	56.1 [16.4]	55.7 [16.3]
		Sens BTUH [kW]	41.5 [12.2]	37.4 [10.9]	36.7 [10.8]	49.9 [14.6]	44.9 [13.1]	44.1 [12.9]	57 [16.7]	51.3 [15]	50.4 [14.8]	59.9 [17.6]	53.9 [15.8]	53 [15.5]	58.5 [17.1]	56.1 [16.4]	55.1 [16.2]
		Power	4.2	4.1	4.1	3.7	3.6	3.6	3.2	3.2	3.1	3	2.9	2.9	2.7	2.7	2.7
	95ºF [35.0ºC]	Total BTUH [kW]	67.9 [19.9]	65.1 [19.1]	64.7 [19]	63.5 [18.6]	60.8 [17.8]	60.4 [17.7]	59.5 [17.4]	57 [16.7]	56.7 [16.6]	57.8 [16.9]	55.4 [16.2]	55 [16.1]	56.4 [16.5]	54 [15.8]	53.7 [15.7]
		Sens BTUH [kW]	40.4 [11.8]	36.3 [10.6]	35.7 [10.5]	48.7 [14.3]	43.8 [12.8]	43.1 [12.6]	55.9 [16.4]	50.3 [14.7]	49.4 [14.5]	57.8 [16.9]	52.9 [15.5]	52 [15.2]	56.4 [16.5]	54 [15.8]	53.7 [15.7]
		Power	4.6	4.6	4.5	4.1	4.1	4	3.6	3.6	3.6	3.4	3.3	3.3	3.1	3.1	3.1
	100ºF [37.8ºC]	Total BTUH [kW]	65.8 [19.3]	63 [18.5]	62.6 [18.3]	61.3 [18]	58.7 [17.2]	58.3 [17.1]	57.3 [16.8]	54.9 [16.1]	54.6 [16]	55.6 [16.3]	53.3 [15.6]	53 [15.5]	54.2 [15.9]	51.9 [15.2]	51.6 [15.1]
		Sens BTUH [kW]	39.2 [11.5]	35.3 [10.3]	34.7 [10.2]	47.5 [13.9]	42.7 [12.5]	42 [12.3]	54.7 [16]	49.2 [14.4]	48.4 [14.2]	55.6 [16.3]	51.8 [15.2]	51 [14.9]	54.2 [15.9]	51.9 [15.2]	51.6 [15.1]
		Power	5.2	5.1	5.1	4.7	4.6	4.6	4.2	4.1	4.1	3.9	3.8	3.8	3.7	3.6	3.6
	105ºF [40.6ºC]	Total BTUH [kW]	63.5 [18.6]	60.9 [17.8]	60.5 [17.7]	59 [17.3]	56.6 [16.6]	56.2 [16.5]	55.1 [16.1]	52.8 [15.5]	52.4 [15.4]	53.4 [15.6]	51.1 [15]	50.8 [14.9]	51.9 [15.2]	49.8 [14.6]	49.4 [14.5]
		Sens BTUH [kW]	37.9 [11.1]	34.1 [10]	33.5 [9.8]	46.3 [13.6]	41.6 [12.2]	40.9 [12]	53.4 [15.7]	48.1 [14.1]	47.3 [13.8]	53.4 [15.6]	50.7 [14.9]	49.9 [14.6]	51.9 [15.2]	49.8 [14.6]	49.4 [14.5]
		Power	5.8	5.7	5.7	5.3	5.2	5.2	4.8	4.7	4.7	4.5	4.5	4.4	4.3	4.2	4.2
	110ºF [43.3ºC]	Total BTUH [kW]	61.2 [17.9]	58.6 [17.2]	58.3 [17.1]	56.7 [16.6]	54.4 [15.9]	54 [15.8]	52.8 [15.5]	50.6 [14.8]	50.2 [14.7]	51.1 [15]	48.9 [14.3]	48.6 [14.2]	49.6 [14.5]	47.6 [13.9]	47.2 [13.8]
		Sens BTUH [kW]	36.6 [10.7]	32.9 [9.6]	32.4 [9.5]	44.9 [13.2]	40.4 [11.8]	39.7 [11.6]	52.1 [15.3]	46.9 [13.7]	46.1 [13.5]	51.1 [15]	48.9 [14.3]	48.6 [14.2]	49.6 [14.5]	47.6 [13.9]	47.2 [13.8]
		Power	6.5	6.4	6.4	6	5.9	5.9	5.5	5.4	5.4	5.3	5.2	5.2	5	4.9	4.9
	115ºF [46.1ºC]	Total BTUH [kW]	58.8 [17.2]	56.4 [16.5]	56 [16.4]	54.4 [15.9]	52.1 [15.3]	51.8 [15.2]	50.4 [14.8]	48.3 [14.2]	48 [14.1]	48.7 [14.3]	46.7 [13.7]	46.4 [13.6]	47.3 [13.8]	45.3 [13.3]	45 [13.2]
		Sens BTUH [kW]	35.2 [10.3]	31.7 [9.3]	31.1 [9.1]	43.5 [12.8]	39.2 [11.5]	38.5 [11.3]	50.4 [14.8]	45.6 [13.4]	44.8 [13.1]	48.7 [14.3]	46.7 [13.7]	46.4 [13.6]	47.3 [13.8]	45.3 [13.3]	45 [13.2]
		Power	7.4	7.2	7.2	6.9	6.7	6.7	6.4	6.2	6.2	6.1	6	6	5.9	5.7	5.7
	120ºF [48.9ºC]	Total BTUH [kW]	56.4 [16.5]	54.1 [15.8]	53.7 [15.7]	51.9 [15.2]	49.8 [14.6]	49.5 [14.5]	48 [14.1]	46 [13.5]	45.7 [13.4]	46.3 [13.6]	44.3 [13]	44.1 [12.9]	44.8 [13.1]	43 [12.6]	42.7 [12.5]
		Sens BTUH [kW]	33.8 [9.9]	30.4 [8.9]	29.9 [8.7]	42.1 [12.3]	37.8 [11.1]	37.2 [10.9]	48 [14.1]	44.3 [13]	43.6 [12.8]	46.3 [13.6]	44.3 [13]	44.1 [12.9]	44.8 [13.1]	43 [12.6]	42.7 [12.5]
		Power	8.3	8.1	8.1	7.8	7.6	7.6	7.3	7.1	7.1	7	6.9	6.9	6.8	6.7	6.6
	125ºF [51.7ºC]	Total BTUH [kW]	53.9 [15.8]	51.7 [15.1]	51.3 [15]	49.5 [14.5]	47.4 [13.9]	47.1 [13.8]	45.5 [13.3]	43.6 [12.8]	43.3 [12.7]	43.8 [12.8]	42 [12.3]	41.7 [12.2]	42.4 [12.4]	40.6 [11.9]	40.3 [11.8]
		Sens BTUH [kW]	32.2 [9.4]	29 [8.5]	28.5 [8.4]	40.6 [11.9]	36.5 [10.7]	35.9 [10.5]	45.5 [13.3]	42.9 [12.6]	42.2 [12.4]	43.8 [12.8]	42 [12.3]	41.7 [12.2]	42.4 [12.4]	40.6 [11.9]	40.3 [11.8]
		Power	9.3	9.1	9.1	8.8	8.7	8.6	8.3	8.2	8.1	8.1	7.9	7.9	7.8	7.7	7.6

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

Appendix D – Cooling Data for ZT 6Ton

COOLING PERFORMANCE - RACCZT072A																		
Entering Indoor Air @ 80°F [26.7°C] dbE																		
wbE			71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			61°F [16.1°C]			59°F [15.0°C]		
CFM [L/s]			2700 [1274]	2395 [1130]	2100 [991]	2700 [1274]	2395 [1130]	2100 [991]	2700 [1274]	2395 [1130]	2100 [991]	2700 [1274]	2395 [1130]	2100 [991]	2700 [1274]	2395 [1130]	2100 [991]
DR			0.17	0.15	0.12	0.17	0.15	0.12	0.17	0.15	0.12	0.17	0.15	0.12	0.17	0.15	0.12
Outdoor Dry Bulb Temperature	75°F [23.9°C]	Total BTUH [kW]	85.5 [25]	83.5 [24.5]	81.7 [23.9]	80 [23.5]	78.2 [22.9]	76.5 [22.4]	75.2 [22]	73.5 [21.5]	71.8 [21.1]	73 [21.4]	71.3 [20.9]	69.7 [20.4]	70.9 [20.8]	69.3 [20.3]	67.7 [19.8]
		Sens BTUH [kW]	51.4 [15.1]	48.5 [14.2]	45.8 [13.4]	60.1 [17.6]	56.7 [16.6]	53.4 [15.7]	68.2 [20]	64.4 [18.9]	60.7 [17.8]	72.2 [21.1]	68.1 [20]	64.2 [18.8]	70.9 [20.8]	69.3 [20.3]	67.6 [19.8]
		Power	4.2	4.2	4.1	4.2	4.1	4.1	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4
	80°F [26.7°C]	Total BTUH [kW]	83.9 [24.6]	82 [24]	80.2 [23.5]	78.5 [23]	76.7 [22.5]	75 [22]	73.6 [21.6]	72 [21.1]	70.4 [20.6]	71.4 [20.9]	69.8 [20.5]	68.2 [20]	69.3 [20.3]	67.7 [19.9]	66.2 [19.4]
		Sens BTUH [kW]	50.7 [14.9]	47.9 [14]	45.1 [13.2]	59.4 [17.4]	56 [16.4]	52.8 [15.5]	67.6 [19.8]	63.8 [18.7]	60.1 [17.6]	71.4 [20.9]	67.5 [19.8]	63.6 [18.6]	69.3 [20.3]	67.7 [19.9]	66.2 [19.4]
		Power	4.5	4.4	4.4	4.4	4.4	4.3	4.4	4.3	4.3	4.4	4.3	4.3	4.4	4.3	4.3
	85°F [29.4°C]	Total BTUH [kW]	82.2 [24.1]	80.3 [23.5]	78.5 [23]	76.7 [22.5]	75 [22]	73.3 [21.5]	71.9 [21.1]	70.2 [20.6]	68.7 [20.1]	69.6 [20.4]	68.1 [19.9]	66.5 [19.5]	67.6 [19.8]	66 [19.3]	64.6 [18.9]
		Sens BTUH [kW]	49.9 [14.6]	47.1 [13.8]	44.4 [13]	58.5 [17.2]	55.2 [16.2]	52.1 [15.3]	66.7 [19.5]	63 [18.5]	59.3 [17.4]	69.6 [20.4]	66.7 [19.5]	62.8 [18.4]	67.6 [19.8]	66 [19.3]	64.6 [18.9]
		Power	4.7	4.7	4.6	4.7	4.6	4.6	4.7	4.6	4.6	4.6	4.6	4.5	4.6	4.6	4.5
	90°F [32.2°C]	Total BTUH [kW]	80.2 [23.5]	78.4 [23]	76.6 [22.5]	74.8 [21.9]	73.1 [21.4]	71.5 [20.9]	69.9 [20.5]	68.3 [20]	66.8 [19.6]	67.7 [19.8]	66.2 [19.4]	64.7 [19]	65.6 [19.2]	64.1 [18.8]	62.7 [18.4]
		Sens BTUH [kW]	48.9 [14.3]	46.1 [13.5]	43.5 [12.7]	57.5 [16.9]	54.3 [15.9]	51.2 [15]	65.7 [19.3]	62 [18.2]	58.4 [17.1]	67.7 [19.8]	65.7 [19.3]	61.9 [18.1]	65.6 [19.2]	64.1 [18.8]	62.7 [18.4]
		Power	5	4.9	4.9	5	4.9	4.9	4.9	4.9	4.8	4.9	4.9	4.8	4.9	4.9	4.8
	95°F [35.0°C]	Total BTUH [kW]	78 [22.9]	76.3 [22.4]	74.6 [21.9]	72.6 [21.3]	71 [20.8]	69.4 [20.3]	67.8 [19.9]	66.2 [19.4]	64.7 [19]	65.5 [19.2]	64 [18.8]	62.6 [18.3]	63.4 [18.6]	62 [18.2]	60.6 [17.8]
		Sens BTUH [kW]	47.7 [14]	45 [13.2]	42.4 [12.4]	56.3 [16.5]	53.2 [15.6]	50.1 [14.7]	64.5 [18.9]	60.9 [17.8]	57.4 [16.8]	65.5 [19.2]	64 [18.8]	60.9 [17.8]	63.4 [18.6]	62 [18.2]	60.6 [17.8]
		Power	5.3	5.2	5.2	5.3	5.2	5.1	5.2	5.2	5.1	5.2	5.2	5.1	5.2	5.1	5.1
	100°F [37.8°C]	Total BTUH [kW]	75.7 [22.2]	74 [21.7]	72.3 [21.2]	70.3 [20.6]	68.7 [20.1]	67.1 [19.7]	65.4 [19.2]	63.9 [18.7]	62.5 [18.3]	63.2 [18.5]	61.7 [18.1]	60.4 [17.7]	61.1 [17.9]	59.7 [17.5]	58.4 [17.1]
		Sens BTUH [kW]	46.4 [13.6]	43.8 [12.8]	41.3 [12.1]	55 [16.1]	51.9 [15.2]	48.9 [14.3]	63.2 [18.5]	59.6 [17.5]	56.2 [16.5]	63.2 [18.5]	61.7 [18.1]	59.7 [17.5]	61.1 [17.9]	59.7 [17.5]	58.4 [17.1]
		Power	5.6	5.5	5.5	5.6	5.5	5.4	5.5	5.5	5.4	5.5	5.5	5.4	5.5	5.5	5.4
	105°F [40.6°C]	Total BTUH [kW]	73.1 [21.4]	71.5 [20.9]	69.9 [20.5]	67.7 [19.8]	66.2 [19.4]	64.7 [19]	62.8 [18.4]	61.4 [18]	60 [17.6]	60.6 [17.8]	59.2 [17.4]	57.9 [17]	58.5 [17.1]	57.2 [16.8]	55.9 [16.4]
		Sens BTUH [kW]	44.9 [13.1]	42.4 [12.4]	39.9 [11.7]	53.5 [15.7]	50.5 [14.8]	47.6 [13.9]	61.7 [18.1]	58.2 [17.1]	54.9 [16.1]	60.6 [17.8]	59.2 [17.4]	57.9 [17]	58.5 [17.1]	57.2 [16.8]	55.9 [16.4]
		Power	5.9	5.9	5.8	5.9	5.8	5.8	5.9	5.8	5.7	5.9	5.8	5.7	5.8	5.8	5.7
	110°F [43.3°C]	Total BTUH [kW]	70.3 [20.6]	68.8 [20.1]	67.2 [19.7]	64.9 [19]	63.5 [18.6]	62 [18.2]	60.1 [17.6]	58.7 [17.2]	57.4 [16.8]	57.8 [16.9]	56.5 [16.6]	55.2 [16.2]	55.7 [16.3]	54.5 [16]	53.3 [15.6]
		Sens BTUH [kW]	43.2 [12.7]	40.8 [12]	38.4 [11.3]	51.8 [15.2]	48.9 [14.3]	46.1 [13.5]	60 [17.6]	56.7 [16.6]	53.4 [15.6]	57.8 [16.9]	56.5 [16.6]	55.2 [16.2]	55.7 [16.3]	54.5 [16]	53.3 [15.6]
		Power	6.3	6.2	6.1	6.2	6.2	6.1	6.2	6.1	6.1	6.2	6.1	6.1	6.2	6.1	6.1
	115°F [46.1°C]	Total BTUH [kW]	67.4 [19.7]	65.8 [19.3]	64.4 [18.9]	61.9 [18.2]	60.5 [17.7]	59.2 [17.3]	57.1 [16.7]	55.8 [16.3]	54.5 [16]	54.8 [16.1]	53.6 [15.7]	52.4 [15.4]	52.8 [15.5]	51.6 [15.1]	50.4 [14.8]
		Sens BTUH [kW]	41.4 [12.1]	39.1 [11.4]	36.8 [10.8]	50 [14.7]	47.2 [13.8]	44.5 [13]	57.1 [16.7]	54.9 [16.1]	51.8 [15.2]	54.8 [16.1]	53.6 [15.7]	52.4 [15.4]	52.8 [15.5]	51.6 [15.1]	50.4 [14.8]
		Power	6.6	6.6	6.5	6.6	6.5	6.5	6.6	6.5	6.4	6.6	6.5	6.4	6.6	6.5	6.4
	120°F [48.9°C]	Total BTUH [kW]	64.2 [18.8]	62.7 [18.4]	61.3 [18]	58.8 [17.2]	57.4 [16.8]	56.2 [16.5]	53.9 [15.8]	52.7 [15.4]	51.5 [15.1]	51.7 [15.1]	50.5 [14.8]	49.4 [14.5]	49.6 [14.5]	48.5 [14.2]	47.4 [13.9]
		Sens BTUH [kW]	39.4 [11.5]	37.2 [10.9]	35.1 [10.3]	48 [14.1]	45.4 [13.3]	42.7 [12.5]	53.9 [15.8]	52.7 [15.4]	50 [14.7]	51.7 [15.1]	50.5 [14.8]	49.4 [14.5]	49.6 [14.5]	48.5 [14.2]	47.4 [13.9]
		Power	7	6.9	6.9	7	6.9	6.8	7	6.9	6.8	7	6.9	6.8	6.9	6.9	6.8
	125°F [51.7°C]	Total BTUH [kW]	60.8 [17.8]	59.4 [17.4]	58.1 [17]	55.4 [16.2]	54.1 [15.9]	52.9 [15.5]	50.5 [14.8]	49.4 [14.5]	48.3 [14.1]	48.3 [14.2]	47.2 [13.8]	46.1 [13.5]	46.2 [13.5]	45.2 [13.2]	44.1 [12.9]
		Sens BTUH [kW]	37.3 [10.9]	35.2 [10.3]	33.2 [9.7]	45.9 [13.5]	43.3 [12.7]	40.8 [12]	50.5 [14.8]	49.4 [14.5]	48.1 [14.1]	48.3 [14.2]	47.2 [13.8]	46.1 [13.5]	46.2 [13.5]	45.2 [13.2]	44.1 [12.9]
		Power	7.4	7.3	7.3	7.4	7.3	7.2	7.4	7.3	7.2	7.4	7.3	7.2	7.3	7.3	7.2

DR —Depression ratio Total —Total capacity x 1000 BTUH NOTES:
dbE —Entering air dry bulb Sens —Sensible capacity x 1000 BTUH When the entering air dry bulb is other than 80°F [27°C], adjust the sensible
wbE—Entering air wet bulb Power—KW input capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

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Appendix D – Heat Data for ZR 3Ton

GROSS SYSTEMS PERFORMANCE DATA (HUMIDIDRY MODE) - RACCZR036												
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1												
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]			
CFM [L/s]			1350 [637]	1200 [566]	1050 [496]	1350 [637]	1200 [566]	1050 [496]	1350 [637]	1200 [566]	1050 [496]	
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	20.5 [6.0]	20.0 [5.9]	19.6 [5.7]	20.1 [5.9]	19.6 [5.7]	19.2 [5.6]	18.9 [5.5]	18.4 [5.4]	18.0 [5.3]	
		Sens BTUH [kW]	4.8 [1.4]	4.6 [1.3]	4.3 [1.3]	7.5 [2.2]	7.1 [2.1]	6.6 [1.9]	10.7 [3.1]	10.1 [3.0]	9.5 [2.8]	
		Power	2	2	1.9	2	2	1.9	2	2	1.9	
	70ºF [21.1ºC]	Total BTUH [kW]	19.6 [5.7]	19.1 [5.6]	18.7 [5.5]	19.1 [5.6]	18.7 [5.5]	18.3 [5.4]	17.9 [5.3]	17.5 [5.1]	17.1 [5.0]	
		Sens BTUH [kW]	4.0 [1.2]	3.8 [1.1]	3.5 [1.0]	6.6 [1.9]	6.2 [1.8]	5.9 [1.7]	9.8 [2.9]	9.3 [2.7]	8.7 [2.6]	
		Power	2	2	2	2	2	2	2	2	2	
	80ºF [26.7ºC]	Total BTUH [kW]	18.3 [5.4]	17.9 [5.2]	17.5 [5.1]	17.9 [5.2]	17.5 [5.1]	17.1 [5.0]	16.7 [4.9]	16.3 [4.8]	16.0 [4.7]	
		Sens BTUH [kW]	2.9 [0.8]	2.7 [0.8]	2.6 [0.7]	5.5 [1.6]	5.2 [1.5]	4.9 [1.4]	8.7 [2.5]	8.7 [2.5]	7.7 [2.3]	
		Power	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	
	90ºF [32.2ºC]	Total BTUH [kW]	16.8 [4.9]	16.4 [4.8]	16.0 [4.7]	16.3 [4.8]	16.0 [4.7]	15.6 [4.6]	15.1 [4.4]	14.8 [4.3]	14.5 [4.2]	
		Sens BTUH [kW]	1.5 [0.4]	1.4 [0.4]	1.3 [0.4]	4.1 [1.2]	3.9 [1.1]	3.7 [1.1]	7.3 [2.1]	6.9 [2.0]	6.5 [1.9]	
		Power	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	
	100ºF [37.8ºC]	Total BTUH [kW]	14.9 [4.4]	14.6 [4.3]	14.2 [4.2]	14.5 [4.2]	14.2 [4.1]	13.8 [4.1]	13.3 [3.9]	13.0 [3.8]	12.7 [3.7]	
		Sens BTUH [kW]	-0.1 [0.0]	-0.1 [0.0]	-0.1 [0.0]	2.5 [0.7]	2.4 [0.7]	2.3 [0.7]	5.7 [1.7]	5.4 [1.6]	5.1 [1.5]	
		Power	2.5	2.5	2.4	2.5	2.4	2.4	2.5	2.4	2.4	
	110ºF [43.3ºC]	Total BTUH [kW]	12.7 [3.7]	12.4 [3.6]	12.2 [3.6]	12.3 [3.6]	12.0 [3.5]	11.8 [3.4]	11.1 [3.3]	10.9 [3.2]	10.6 [3.1]	
		Sens BTUH [kW]	-1.9 [-0.6]	-1.8 [-0.5]	-1.7 [-0.5]	0.7 [0.2]	0.6 [0.2]	0.6 [0.2]	3.9 [1.1]	3.7 [1.1]	3.5 [1.0]	
		Power	2.8	2.7	2.7	2.8	2.7	2.7	2.8	2.7	2.7	
	120ºF [48.9ºC]	Total BTUH [kW]	10.2 [3.0]	10.0 [2.9]	9.8 [2.9]	9.8 [2.9]	9.6 [2.8]	9.4 [2.7]	8.6 [2.5]	8.4 [2.5]	8.2 [2.4]	
		Sens BTUH [kW]	-4.0 [-1.2]	-3.8 [-1.1]	-3.6 [-1.0]	-1.4 [-0.4]	-1.3 [-0.4]	-1.3 [-0.4]	1.8 [0.5]	1.7 [0.5]	1.6 [0.5]	
		Power	3.1	3.1	3	3.1	3.1	3	3.1	3.1	3	

Appendix D – Heat Data for ZR 4Ton

GROSS SYSTEMS PERFORMANCE DATA (HUMIDIDRY MODE) - RACCZR048												
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1												
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]			
CFM [L/s]			1800 [850]	1600 [755]	1400 [661]	1800 [850]	1600 [755]	1400 [661]	1800 [850]	1600 [755]	1400 [661]	
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	29.2 [8.5]	28.5 [8.4]	27.9 [8.2]	30.1 [8.8]	29.5 [8.6]	28.8 [8.4]	29.3 [8.6]	28.7 [8.4]	28.0 [8.2]	
		Sens BTUH [kW]	9.4 [2.8]	8.9 [2.6]	8.4 [2.5]	12.9 [3.8]	12.2 [3.6]	11.5 [3.4]	15.2 [4.4]	14.3 [4.2]	13.5 [4.0]	
		Power	2.4	2.4	2.3	2.4	2.4	2.3	2.4	2.3	2.3	
	70ºF [21.1ºC]	Total BTUH [kW]	27.8 [8.1]	27.2 [8.0]	26.5 [7.8]	28.8 [8.4]	28.1 [8.2]	27.5 [8.1]	27.9 [8.2]	27.3 [8.0]	26.7 [7.8]	
		Sens BTUH [kW]	7.7 [2.3]	7.3 [2.1]	6.8 [2.0]	11.2 [3.3]	10.6 [3.1]	9.9 [2.9]	13.4 [3.9]	12.7 [3.7]	12.0 [3.5]	
		Power	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.4	
	80ºF [26.7ºC]	Total BTUH [kW]	25.9 [7.6]	25.3 [7.4]	24.7 [7.2]	26.9 [7.9]	26.3 [7.7]	25.7 [7.5]	26.0 [7.6]	25.5 [7.5]	24.9 [7.3]	
		Sens BTUH [kW]	5.7 [1.7]	5.4 [1.6]	5.0 [1.5]	9.2 [2.7]	8.7 [2.5]	8.2 [2.4]	11.4 [3.3]	10.8 [3.2]	10.2 [3.0]	
		Power	2.7	2.7	2.6	2.7	2.7	2.6	2.7	2.7	2.6	
	90ºF [32.2ºC]	Total BTUH [kW]	23.5 [6.9]	23.0 [6.7]	22.4 [6.6]	24.5 [7.2]	23.9 [7.0]	23.4 [6.9]	23.7 [6.9]	23.1 [6.8]	22.6 [6.6]	
		Sens BTUH [kW]	3.4 [1.0]	3.2 [0.9]	3.0 [0.9]	6.9 [2.0]	6.5 [1.9]	6.1 [1.8]	9.1 [2.7]	8.6 [2.5]	8.1 [2.4]	
		Power	3	3	2.9	3	2.9	2.9	3	2.9	2.9	
	100ºF [37.8ºC]	Total BTUH [kW]	20.6 [6.0]	20.1 [5.9]	19.7 [5.8]	21.6 [6.3]	21.1 [6.2]	20.6 [6.0]	20.8 [6.1]	20.3 [5.9]	19.8 [5.8]	
		Sens BTUH [kW]	0.8 [0.2]	0.7 [0.2]	0.7 [0.2]	4.3 [1.3]	4.0 [1.2]	3.8 [1.1]	6.5 [1.9]	6.2 [1.8]	5.8 [1.7]	
		Power	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
	110ºF [43.3ºC]	Total BTUH [kW]	17.2 [5.0]	16.8 [4.9]	16.4 [4.8]	18.2 [5.3]	17.8 [5.2]	17.4 [5.1]	17.4 [5.1]	17.0 [5.0]	16.6 [4.9]	
		Sens BTUH [kW]	-2.1 [-0.6]	-2.0 [-0.6]	-1.9 [-0.5]	1.4 [0.4]	1.3 [0.4]	1.2 [0.4]	3.7 [1.1]	3.5 [1.0]	3.3 [1.0]	
		Power	3.8	3.8	3.7	3.8	3.8	3.7	3.8	3.7	3.7	
	120ºF [48.9ºC]	Total BTUH [kW]	13.3 [3.9]	13.0 [3.8]	12.7 [3.7]	14.3 [4.2]	14.0 [4.1]	13.7 [4.0]	13.5 [3.9]	13.2 [3.9]	12.9 [3.8]	
		Sens BTUH [kW]	-5.3 [-1.5]	-5.0 [-1.5]	-4.7 [-1.4]	-1.8 [-0.5]	-1.7 [-0.5]	-1.6 [-0.5]	0.5 [0.1]	0.5 [0.1]	0.4 [0.1]	
		Power	4.4	4.3	4.3	4.3	4.3	4.2	4.3	4.3	4.2	

Appendix D – Heat Data for ZR 5Ton

GROSS SYSTEMS PERFORMANCE DATA (HUMIDIDRY MODE) - RACCZR060												
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1												
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]			
CFM [L/s]			2250 [1062]	2000 [944]	1750 [826]	2250 [1062]	2000 [944]	1750 [826]	2250 [1062]	2000 [944]	1750 [826]	
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	36.4 [10.7]	35.6 [10.4]	34.8 [10.2]	35.1 [10.3]	34.4 [10.1]	33.6 [9.8]	34.3 [10.1]	33.6 [9.8]	32.8 [9.6]	
		Sens BTUH [kW]	9.9 [2.9]	9.4 [2.7]	8.8 [2.6]	14.0 [4.1]	13.2 [3.9]	12.4 [3.6]	16.6 [4.9]	15.7 [4.6]	14.8 [4.3]	
		Power	3.5	3.4	3.4	3.5	3.4	3.4	3.5	3.4	3.4	
	70ºF [21.1ºC]	Total BTUH [kW]	34.4 [10.1]	33.6 [9.8]	32.8 [9.6]	33.1 [9.7]	32.4 [9.5]	31.7 [9.3]	32.3 [9.5]	31.6 [9.3]	30.9 [9.0]	
		Sens BTUH [kW]	8.2 [2.4]	7.8 [2.3]	7.3 [2.2]	12.3 [3.6]	11.6 [3.4]	10.9 [3.2]	14.9 [4.4]	14.1 [4.1]	13.3 [3.9]	
		Power	3.6	3.5	3.5	3.6	3.5	3.5	3.6	3.5	3.5	
	80ºF [26.7ºC]	Total BTUH [kW]	31.7 [9.3]	31.0 [9.1]	30.3 [8.9]	30.5 [8.9]	29.8 [8.7]	29.2 [8.5]	29.7 [8.7]	29.0 [8.5]	28.4 [8.3]	
		Sens BTUH [kW]	6.1 [1.8]	5.7 [1.7]	5.4 [1.6]	10.1 [3.0]	9.5 [2.8]	9.0 [2.6]	12.7 [3.7]	12.0 [3.5]	11.3 [3.3]	
		Power	3.8	3.7	3.7	3.8	3.7	3.7	3.8	3.7	3.7	
	90ºF [32.2ºC]	Total BTUH [kW]	28.5 [8.4]	27.9 [8.2]	27.3 [8.0]	27.3 [8.0]	26.7 [7.8]	26.1 [7.6]	26.5 [7.8]	25.9 [7.6]	25.3 [7.4]	
		Sens BTUH [kW]	3.4 [1.0]	3.2 [0.9]	3.0 [0.9]	7.4 [2.2]	7.0 [2.0]	6.6 [1.9]	10.0 [2.9]	9.5 [2.8]	8.9 [2.6]	
		Power	4.1	4	4	4.1	4	4	4.1	4	4	
	100ºF [37.8ºC]	Total BTUH [kW]	24.8 [7.3]	24.2 [7.1]	23.7 [6.9]	23.5 [6.9]	23.0 [6.7]	22.5 [6.6]	22.7 [6.7]	22.2 [6.5]	21.7 [6.4]	
		Sens BTUH [kW]	0.1 [0.0]	0.1 [0.0]	0.1 [0.0]	4.2 [1.2]	3.9 [1.2]	3.7 [1.1]	6.8 [2.0]	6.4 [1.9]	6.1 [1.8]	
		Power	4.5	4.4	4.4	4.5	4.4	4.4	4.5	4.4	4.4	
	110ºF [43.3ºC]	Total BTUH [kW]	20.4 [6.0]	19.9 [5.8]	19.5 [5.7]	19.2 [5.6]	18.7 [5.5]	18.3 [5.4]	18.3 [5.4]	17.9 [5.3]	17.5 [5.1]	
		Sens BTUH [kW]	-3.6 [-1.0]	-3.4 [-1.0]	-3.2 [-0.9]	0.4 [0.1]	0.4 [0.1]	0.4 [0.1]	3.1 [0.9]	2.9 [0.9]	2.8 [0.8]	
		Power	5	4.9	4.9	5	4.9	4.9	5	4.9	4.9	
	120ºF [48.9ºC]	Total BTUH [kW]	15.4 [4.5]	15.1 [4.4]	14.8 [4.3]	14.2 [4.2]	13.9 [4.1]	13.6 [4.0]	13.4 [3.9]	13.1 [3.8]	12.8 [3.8]	
		Sens BTUH [kW]	-7.8 [-2.3]	-7.4 [-2.2]	-7.0 [-2.0]	-3.8 [-1.1]	-3.6 [-1.0]	-3.4 [-1.0]	-1.1 [-0.3]	-1.1 [-0.3]	-1.0 [-0.3]	
		Power	5.6	5.5	5.5	5.6	5.5	5.5	5.6	5.6	5.5	

P. APPENDICES

Appendix D – Heat Data for ZT 3Ton

GROSS SYSTEMS PERFORMANCE DATA (LOW REHEAT MODE) - RACCZT036												
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1												
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]			
CFM [L/s]			1200 [566]	1050 [496]	850 [401]	1200 [566]	1050 [496]	850 [401]	1200 [566]	1050 [496]	850 [401]	
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	15.3 [4.5]	14.9 [4.4]	14.4 [4.2]	14.7 [4.3]	14.3 [4.2]	13.8 [4.1]	14 [4.1]	13.7 [4]	13.2 [3.9]	
		Sens BTUH [kW]	5.1 [1.5]	4.8 [1.4]	4.4 [1.3]	6.5 [1.9]	6.1 [1.8]	5.5 [1.6]	8.1 [2.4]	7.6 [2.2]	7 [2]	
		Power	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
	65ºF [18.3ºC]	Total BTUH [kW]	15.1 [4.4]	14.7 [4.3]	14.2 [4.2]	14.5 [4.3]	14.2 [4.2]	13.7 [4]	13.8 [4.1]	13.5 [4]	13 [3.8]	
		Sens BTUH [kW]	5.3 [1.6]	5 [1.5]	4.6 [1.3]	6.7 [2]	6.3 [1.8]	5.7 [1.7]	8.4 [2.5]	7.8 [2.3]	7.1 [2.1]	
		Power	1.2	1.2	1.1	1.2	1.2	1.1	1.2	1.2	1.1	
	70ºF [21.1ºC]	Total BTUH [kW]	14.6 [4.3]	14.3 [4.2]	13.8 [4]	14.1 [4.1]	13.7 [4]	13.3 [3.9]	13.4 [3.9]	13.1 [3.8]	12.6 [3.7]	
		Sens BTUH [kW]	5.1 [1.5]	4.8 [1.4]	4.4 [1.3]	6.5 [1.9]	6.1 [1.8]	5.5 [1.6]	8.2 [2.4]	7.6 [2.2]	7 [2]	
		Power	1.3	1.2	1.2	1.3	1.2	1.2	1.3	1.2	1.2	
	75ºF [23.9ºC]	Total BTUH [kW]	13.9 [4.1]	13.6 [4]	13.1 [3.8]	13.3 [3.9]	13 [3.8]	12.6 [3.7]	12.7 [3.7]	12.3 [3.6]	11.9 [3.5]	
		Sens BTUH [kW]	4.5 [1.3]	4.2 [1.2]	3.8 [1.1]	5.9 [1.7]	5.5 [1.6]	5 [1.5]	7.5 [2.2]	7.1 [2.1]	6.4 [1.9]	
		Power	1.4	1.3	1.3	1.4	1.3	1.3	1.4	1.3	1.3	
	80ºF [26.7ºC]	Total BTUH [kW]	12.9 [3.8]	12.6 [3.7]	12.1 [3.6]	12.3 [3.6]	12 [3.5]	11.6 [3.4]	11.6 [3.4]	11.3 [3.3]	10.9 [3.2]	
		Sens BTUH [kW]	3.5 [1]	3.3 [1]	3 [0.9]	4.8 [1.4]	4.5 [1.3]	4.1 [1.2]	6.5 [1.9]	6.1 [1.8]	5.6 [1.6]	
		Power	1.5	1.4	1.4	1.5	1.5	1.4	1.5	1.4	1.4	
	85ºF [29.4ºC]	Total BTUH [kW]	11.6 [3.4]	11.3 [3.3]	10.9 [3.2]	11 [3.2]	10.7 [3.1]	10.4 [3]	10.3 [3]	10.1 [2.9]	9.7 [2.8]	
		Sens BTUH [kW]	2 [0.6]	1.9 [0.6]	1.7 [0.5]	3.4 [1]	3.2 [0.9]	2.9 [0.8]	5.1 [1.5]	4.7 [1.4]	4.3 [1.3]	
		Power	1.6	1.6	1.5	1.6	1.6	1.5	1.6	1.6	1.5	
	90ºF [32.2ºC]	Total BTUH [kW]	10 [2.9]	9.7 [2.9]	9.4 [2.8]	9.4 [2.8]	9.2 [2.7]	8.9 [2.6]	8.7 [2.6]	8.5 [2.5]	8.2 [2.4]	
		Sens BTUH [kW]	0.1 [0]	0.1 [0]	0.1 [0]	1.5 [0.4]	1.4 [0.4]	1.3 [0.4]	3.2 [0.9]	3 [0.9]	2.7 [0.8]	
		Power	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	

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Appendix D – Heat Data for ZT 3Ton

GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE) - RACCZT036												
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1												
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]			
CFM [L/s]			1500 [708]	1260 [595]	1100 [519]	1500 [708]	1260 [595]	1100 [519]	1500 [708]	1260 [595]	1100 [519]	
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	22.1 [6.5]	21.4 [6.3]	20.9 [6.1]	21.5 [6.3]	20.7 [6.1]	20.3 [5.9]	21.3 [6.2]	20.6 [6]	20.1 [5.9]	
		Sens BTUH [kW]	6 [1.8]	5.5 [1.6]	5.2 [1.5]	7.9 [2.3]	7.2 [2.1]	6.8 [2]	10.6 [3.1]	9.8 [2.9]	9.2 [2.7]	
		Power	1.7	1.7	1.7	1.8	1.8	1.7	1.8	1.8	1.8	
	70ºF [21.1ºC]	Total BTUH [kW]	20.4 [6]	19.7 [5.8]	19.3 [5.6]	19.8 [5.8]	19.1 [5.6]	18.7 [5.5]	19.6 [5.7]	18.9 [5.6]	18.5 [5.4]	
		Sens BTUH [kW]	4.6 [1.3]	4.2 [1.2]	4 [1.2]	6.4 [1.9]	5.9 [1.7]	5.6 [1.6]	9.2 [2.7]	8.4 [2.5]	7.9 [2.3]	
		Power	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	
	80ºF [26.7ºC]	Total BTUH [kW]	18.4 [5.4]	17.8 [5.2]	17.4 [5.1]	17.7 [5.2]	17.1 [5]	16.8 [4.9]	17.6 [5.1]	17 [5]	16.6 [4.9]	
		Sens BTUH [kW]	2.8 [0.8]	2.6 [0.7]	2.4 [0.7]	4.6 [1.4]	4.2 [1.2]	4 [1.2]	7.4 [2.2]	6.8 [2]	6.4 [1.9]	
		Power	2	2	2	2.1	2.1	2	2.1	2.1	2.1	
	90ºF [32.2ºC]	Total BTUH [kW]	16 [4.7]	15.4 [4.5]	15.1 [4.4]	15.3 [4.5]	14.8 [4.3]	14.5 [4.2]	15.2 [4.4]	14.6 [4.3]	14.3 [4.2]	
		Sens BTUH [kW]	0.6 [0.2]	0.5 [0.2]	0.5 [0.1]	2.4 [0.7]	2.2 [0.6]	2.1 [0.6]	5.2 [1.5]	4.8 [1.4]	4.5 [1.3]	
		Power	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	
	100ºF [37.8ºC]	Total BTUH [kW]	13.2 [3.9]	12.8 [3.7]	12.5 [3.7]	12.6 [3.7]	12.1 [3.6]	11.9 [3.5]	12.4 [3.6]	12 [3.5]	11.7 [3.4]	
		Sens BTUH [kW]	-2 [-0.6]	-1.8 [-0.5]	-1.7 [-0.5]	-0.2 [-0.1]	-0.2 [0]	-0.2 [0]	2.6 [0.8]	2.4 [0.7]	2.2 [0.7]	
		Power	2.5	2.5	2.4	2.6	2.5	2.5	2.6	2.6	2.5	
	110ºF [43.3ºC]	Total BTUH [kW]	10.1 [3]	9.7 [2.9]	9.5 [2.8]	9.4 [2.8]	9.1 [2.7]	8.9 [2.6]	9.3 [2.7]	8.9 [2.6]	8.7 [2.6]	
		Sens BTUH [kW]	-5 [-1.5]	-4.6 [-1.3]	-4.3 [-1.3]	-3.1 [-0.9]	-2.9 [-0.8]	-2.7 [-0.8]	-0.4 [-0.1]	-0.4 [-0.1]	-0.3 [-0.1]	
		Power	2.8	2.8	2.7	2.9	2.8	2.8	2.9	2.9	2.8	
	120ºF [48.9ºC]	Total BTUH [kW]	6.6 [1.9]	6.4 [1.9]	6.2 [1.8]	5.9 [1.7]	5.7 [1.7]	5.6 [1.6]	5.8 [1.7]	5.6 [1.6]	5.4 [1.6]	
		Sens BTUH [kW]	-8.3 [-2.4]	-7.7 [-2.2]	-7.2 [-2.1]	-6.5 [-1.9]	-6 [-1.8]	-5.6 [-1.6]	-3.8 [-1.1]	-3.4 [-1]	-3.2 [-1]	
		Power	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.2	3.2	

Appendix D – Heat Data for ZT 4Ton

GROSS SYSTEMS PERFORMANCE DATA (LOW REHEAT MODE) - RACCZT048											
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1											
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]		
CFM [L/s]			1200 [566]	1050 [496]	850 [401]	1200 [566]	1050 [496]	850 [401]	1200 [566]	1050 [496]	850 [401]
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	18.9 [5.6]	18.5 [5.4]	17.8 [5.2]	18.1 [5.3]	17.6 [5.2]	17 [5]	17.1 [5]	16.6 [4.9]	16.1 [4.7]
		Sens BTUH [kW]	4.2 [1.2]	3.9 [1.2]	3.6 [1.1]	5.7 [1.7]	5.4 [1.6]	4.9 [1.4]	7.6 [2.2]	7.1 [2.1]	6.5 [1.9]
		Power	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	65ºF [18.3ºC]	Total BTUH [kW]	19.2 [5.6]	18.7 [5.5]	18.1 [5.3]	18.3 [5.4]	17.9 [5.2]	17.3 [5.1]	17.3 [5.1]	16.9 [5]	16.3 [4.8]
		Sens BTUH [kW]	4.9 [1.4]	4.6 [1.3]	4.2 [1.2]	6.4 [1.9]	6 [1.8]	5.5 [1.6]	8.3 [2.4]	7.8 [2.3]	7.1 [2.1]
		Power	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	70ºF [21.1ºC]	Total BTUH [kW]	19.1 [5.6]	18.6 [5.4]	17.9 [5.3]	18.2 [5.3]	17.7 [5.2]	17.1 [5]	17.2 [5]	16.7 [4.9]	16.2 [4.7]
		Sens BTUH [kW]	5 [1.5]	4.7 [1.4]	4.3 [1.3]	6.5 [1.9]	6.1 [1.8]	5.6 [1.6]	8.5 [2.5]	7.9 [2.3]	7.2 [2.1]
		Power	1.7	1.6	1.6	1.7	1.7	1.6	1.7	1.7	1.6
	75ºF [23.9ºC]	Total BTUH [kW]	18.5 [5.4]	18 [5.3]	17.4 [5.1]	17.6 [5.2]	17.1 [5]	16.5 [4.8]	16.6 [4.9]	16.2 [4.7]	15.6 [4.6]
		Sens BTUH [kW]	4.6 [1.3]	4.3 [1.3]	3.9 [1.1]	6.1 [1.8]	5.7 [1.7]	5.2 [1.5]	8 [2.3]	7.5 [2.2]	6.8 [2]
		Power	1.8	1.8	1.7	1.8	1.8	1.7	1.8	1.8	1.7
	80ºF [26.7ºC]	Total BTUH [kW]	17.4 [5.1]	17 [5]	16.4 [4.8]	16.5 [4.8]	16.1 [4.7]	15.6 [4.6]	15.5 [4.6]	15.1 [4.4]	14.6 [4.3]
		Sens BTUH [kW]	3.5 [1]	3.3 [1]	3 [0.9]	5 [1.5]	4.7 [1.4]	4.3 [1.3]	6.9 [2]	6.5 [1.9]	5.9 [1.7]
		Power	2	1.9	1.9	2	2	1.9	2	1.9	1.9
	85ºF [29.4ºC]	Total BTUH [kW]	16 [4.7]	15.5 [4.6]	15 [4.4]	15.1 [4.4]	14.7 [4.3]	14.2 [4.2]	14.1 [4.1]	13.7 [4]	13.2 [3.9]
		Sens BTUH [kW]	1.8 [0.5]	1.7 [0.5]	1.6 [0.5]	3.3 [1]	3.1 [0.9]	2.9 [0.8]	5.2 [1.5]	4.9 [1.4]	4.5 [1.3]
		Power	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.1
	90ºF [32.2ºC]	Total BTUH [kW]	14 [4.1]	13.7 [4]	13.2 [3.9]	13.2 [3.9]	12.8 [3.8]	12.4 [3.6]	12.2 [3.6]	11.9 [3.5]	11.4 [3.4]
		Sens BTUH [kW]	-0.4 [-0.1]	-0.4 [-0.1]	-0.4 [-0.1]	1.1 [0.3]	1 [0.3]	0.9 [0.3]	3 [0.9]	2.8 [0.8]	2.5 [0.7]
		Power	2.5	2.5	2.4	2.5	2.5	2.4	2.5	2.5	2.4

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Appendix D – Heat Data for ZT 4Ton

GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE) - RACCZT048													
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1													
		wbE	65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]				
		CFM [L/s]	1800 [850]	1570 [741]	1400 [661]	1800 [850]	1570 [741]	1400 [661]	1800 [850]	1570 [741]	1400 [661]		
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	27.7 [8.1]	26.9 [7.9]	26.4 [7.7]	26.2 [7.7]	25.5 [7.5]	25 [7.3]	25.8 [7.6]	25.1 [7.4]	24.6 [7.2]		
		Sens BTUH [kW]	6.1 [1.8]	5.7 [1.7]	5.4 [1.6]	7.7 [2.2]	7.2 [2.1]	6.8 [2]	11.1 [3.3]	10.4 [3]	9.9 [2.9]		
		Power	2.4	2.4	2.3	2.5	2.5	2.4	2.4	2.3	2.3		
	70ºF [21.1ºC]	Total BTUH [kW]	26.2 [7.7]	25.5 [7.5]	25 [7.3]	24.7 [7.2]	24 [7]	23.6 [6.9]	24.3 [7.1]	23.7 [6.9]	23.2 [6.8]		
		Sens BTUH [kW]	4.8 [1.4]	4.5 [1.3]	4.3 [1.3]	6.4 [1.9]	6 [1.7]	5.7 [1.7]	9.8 [2.9]	9.2 [2.7]	8.7 [2.6]		
		Power	2.7	2.7	2.6	2.8	2.7	2.7	2.7	2.6	2.6		
	80ºF [26.7ºC]	Total BTUH [kW]	24.1 [7.1]	23.5 [6.9]	23 [6.8]	22.7 [6.6]	22.1 [6.5]	21.6 [6.3]	22.3 [6.5]	21.7 [6.4]	21.2 [6.2]		
		Sens BTUH [kW]	3 [0.9]	2.8 [0.8]	2.6 [0.8]	4.5 [1.3]	4.2 [1.2]	4 [1.2]	8 [2.3]	7.4 [2.2]	7.1 [2.1]		
		Power	3	3	2.9	3.1	3.1	3	3	2.9	2.9		
	90ºF [32.2ºC]	Total BTUH [kW]	21.5 [6.3]	21 [6.2]	20.6 [6]	20.1 [5.9]	19.5 [5.7]	19.2 [5.6]	19.7 [5.8]	19.2 [5.6]	18.8 [5.5]		
		Sens BTUH [kW]	0.5 [0.2]	0.5 [0.1]	0.5 [0.1]	2.1 [0.6]	1.9 [0.6]	1.8 [0.5]	5.5 [1.6]	5.2 [1.5]	4.9 [1.4]		
		Power	3.3	3.3	3.3	3.4	3.4	3.4	3.3	3.3	3.2		
	100ºF [37.8ºC]	Total BTUH [kW]	18.4 [5.4]	17.9 [5.3]	17.6 [5.2]	16.9 [5]	16.5 [4.8]	16.2 [4.7]	16.5 [4.8]	16.1 [4.7]	15.8 [4.6]		
		Sens BTUH [kW]	-2.5 [-0.7]	-2.3 [-0.7]	-2.2 [-0.7]	-1 [-0.3]	-0.9 [-0.3]	-0.8 [-0.2]	2.5 [0.7]	2.3 [0.7]	2.2 [0.6]		
		Power	3.7	3.7	3.6	3.8	3.7	3.7	3.7	3.6	3.6		
	110ºF [43.3ºC]	Total BTUH [kW]	14.7 [4.3]	14.3 [4.2]	14.1 [4.1]	13.2 [3.9]	12.9 [3.8]	12.7 [3.7]	12.8 [3.8]	12.5 [3.7]	12.3 [3.6]		
		Sens BTUH [kW]	-6.1 [-1.8]	-5.7 [-1.7]	-5.4 [-1.6]	-4.6 [-1.3]	-4.3 [-1.2]	-4 [-1.2]	-1.1 [-0.3]	-1 [-0.3]	-1 [-0.3]		
		Power	4.1	4	4	4.2	4.1	4.1	4.1	4	4		
	120ºF [48.9ºC]	Total BTUH [kW]	10.5 [3.1]	10.2 [3]	10 [2.9]	9 [2.6]	8.8 [2.6]	8.6 [2.5]	8.6 [2.5]	8.4 [2.5]	8.2 [2.4]		
		Sens BTUH [kW]	-10.3 [-3]	-9.6 [-2.8]	-9.1 [-2.7]	-8.7 [-2.6]	-8.2 [-2.4]	-7.8 [-2.3]	-5.3 [-1.6]	-5 [-1.5]	-4.7 [-1.4]		
		Power	4.5	4.4	4.4	4.6	4.5	4.5	4.5	4.4	4.4		

Appendix D – Heat Data for ZT 5Ton

GROSS SYSTEMS PERFORMANCE DATA (LOW REHEAT MODE) - RACCZT060											
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1											
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]		
CFM [L/s]			1600 [755]	1360 [642]	1250 [590]	1600 [755]	1360 [642]	1250 [590]	1600 [755]	1360 [642]	1250 [590]
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	26.2 [7.7]	25.4 [7.4]	25 [7.3]	25.2 [7.4]	24.4 [7.2]	24.1 [7.1]	24.3 [7.1]	23.5 [6.9]	23.2 [6.8]
		Sens BTUH [kW]	10.6 [3.1]	9.8 [2.9]	9.4 [2.8]	11.7 [3.4]	10.8 [3.2]	10.4 [3.1]	14 [4.1]	12.9 [3.8]	12.4 [3.6]
		Power	1.7	1.7	1.7	1.6	1.6	1.6	1.7	1.7	1.7
	65ºF [18.3ºC]	Total BTUH [kW]	25.2 [7.4]	24.4 [7.1]	24 [7]	24.2 [7.1]	23.5 [6.9]	23.1 [6.8]	23.3 [6.8]	22.5 [6.6]	22.2 [6.5]
		Sens BTUH [kW]	9.4 [2.8]	8.7 [2.6]	8.4 [2.5]	10.6 [3.1]	9.8 [2.9]	9.4 [2.8]	12.8 [3.7]	11.8 [3.5]	11.4 [3.3]
		Power	1.9	1.9	1.8	1.8	1.7	1.7	1.9	1.9	1.9
	70ºF [21.1ºC]	Total BTUH [kW]	24 [7]	23.3 [6.8]	22.9 [6.7]	23 [6.8]	22.3 [6.5]	22 [6.4]	22.1 [6.5]	21.4 [6.3]	21.1 [6.2]
		Sens BTUH [kW]	8.1 [2.4]	7.5 [2.2]	7.2 [2.1]	9.2 [2.7]	8.5 [2.5]	8.2 [2.4]	11.4 [3.4]	10.6 [3.1]	10.2 [3]
		Power	2.1	2	2	1.9	1.9	1.9	2.1	2.1	2
	75ºF [23.9ºC]	Total BTUH [kW]	22.7 [6.6]	22 [6.4]	21.6 [6.3]	21.7 [6.4]	21 [6.2]	20.7 [6.1]	20.7 [6.1]	20.1 [5.9]	19.8 [5.8]
		Sens BTUH [kW]	6.6 [1.9]	6.1 [1.8]	5.8 [1.7]	7.7 [2.3]	7.1 [2.1]	6.8 [2]	9.9 [2.9]	9.2 [2.7]	8.8 [2.6]
		Power	2.2	2.2	2.2	2.1	2.1	2.1	2.3	2.2	2.2
	80ºF [26.7ºC]	Total BTUH [kW]	21.1 [6.2]	20.5 [6]	20.2 [5.9]	20.2 [5.9]	19.5 [5.7]	19.3 [5.6]	19.2 [5.6]	18.6 [5.5]	18.3 [5.4]
		Sens BTUH [kW]	4.9 [1.4]	4.5 [1.3]	4.3 [1.3]	6 [1.8]	5.6 [1.6]	5.4 [1.6]	8.2 [2.4]	7.6 [2.2]	7.3 [2.1]
		Power	2.4	2.4	2.4	2.3	2.3	2.2	2.4	2.4	2.4
	85ºF [29.4ºC]	Total BTUH [kW]	19.5 [5.7]	18.9 [5.5]	18.6 [5.4]	18.5 [5.4]	17.9 [5.3]	17.7 [5.2]	17.5 [5.1]	17 [5]	16.7 [4.9]
		Sens BTUH [kW]	3 [0.9]	2.8 [0.8]	2.7 [0.8]	4.2 [1.2]	3.8 [1.1]	3.7 [1.1]	6.4 [1.9]	5.9 [1.7]	5.7 [1.7]
		Power	2.6	2.6	2.5	2.5	2.4	2.4	2.6	2.6	2.6
	90ºF [32.2ºC]	Total BTUH [kW]	17.6 [5.2]	17.1 [5]	16.8 [4.9]	16.6 [4.9]	16.1 [4.7]	15.9 [4.7]	15.7 [4.6]	15.2 [4.5]	15 [4.4]
		Sens BTUH [kW]	1 [0.3]	0.9 [0.3]	0.9 [0.3]	2.1 [0.6]	2 [0.6]	1.9 [0.6]	4.4 [1.3]	4 [1.2]	3.9 [1.1]
		Power	2.8	2.7	2.7	2.7	2.6	2.6	2.8	2.8	2.7

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Appendix D – Heat Data for ZT 5Ton

GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE) - RACCZT060												
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1												
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]			
CFM [L/s]			2250 [1062]	1815 [857]	1750 [826]	2250 [1062]	1815 [857]	1750 [826]	2250 [1062]	1815 [857]	1750 [826]	
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	38 [11.1]	36.4 [10.7]	36.1 [10.6]	36.6 [10.7]	35.1 [10.3]	34.8 [10.2]	35.5 [10.4]	34 [10]	33.8 [9.9]	
		Sens BTUH [kW]	13 [3.8]	11.7 [3.4]	11.5 [3.4]	15 [4.4]	13.5 [3.9]	13.2 [3.9]	18.6 [5.4]	16.7 [4.9]	16.4 [4.8]	
		Power	2.8	2.7	2.7	2.8	2.8	2.8	2.7	2.7	2.7	
	70ºF [21.1ºC]	Total BTUH [kW]	34.9 [10.2]	33.4 [9.8]	33.2 [9.7]	33.5 [9.8]	32.1 [9.4]	31.9 [9.3]	32.4 [9.5]	31 [9.1]	30.8 [9]	
		Sens BTUH [kW]	9.1 [2.7]	8.2 [2.4]	8.1 [2.4]	11.1 [3.3]	10 [2.9]	9.9 [2.9]	14.7 [4.3]	13.3 [3.9]	13 [3.8]	
		Power	3.1	3	3	3.1	3.1	3.1	3	3	3	
	80ºF [26.7ºC]	Total BTUH [kW]	31.6 [9.3]	30.2 [8.9]	30.1 [8.8]	30.2 [8.8]	28.9 [8.5]	28.7 [8.4]	29.1 [8.5]	27.9 [8.2]	27.7 [8.1]	
		Sens BTUH [kW]	5.3 [1.5]	4.8 [1.4]	4.7 [1.4]	7.3 [2.1]	6.6 [1.9]	6.4 [1.9]	10.9 [3.2]	9.8 [2.9]	9.6 [2.8]	
		Power	3.4	3.4	3.3	3.5	3.4	3.4	3.4	3.3	3.3	
	90ºF [32.2ºC]	Total BTUH [kW]	28.1 [8.2]	26.9 [7.9]	26.8 [7.8]	26.7 [7.8]	25.6 [7.5]	25.4 [7.5]	25.7 [7.5]	24.6 [7.2]	24.4 [7.2]	
		Sens BTUH [kW]	1.4 [0.4]	1.2 [0.4]	1.2 [0.4]	3.4 [1]	3 [0.9]	3 [0.9]	7 [2]	6.3 [1.8]	6.2 [1.8]	
		Power	3.8	3.7	3.7	3.9	3.8	3.8	3.8	3.7	3.7	
	100ºF [37.8ºC]	Total BTUH [kW]	24.5 [7.2]	23.5 [6.9]	23.3 [6.8]	23.1 [6.8]	22.1 [6.5]	22 [6.4]	22 [6.5]	21.1 [6.2]	21 [6.1]	
		Sens BTUH [kW]	-2.6 [-0.7]	-2.3 [-0.7]	-2.3 [-0.7]	-0.6 [-0.2]	-0.5 [-0.1]	-0.5 [-0.1]	3.1 [0.9]	2.7 [0.8]	2.7 [0.8]	
		Power	4.2	4.2	4.1	4.3	4.2	4.2	4.2	4.1	4.1	
	110ºF [43.3ºC]	Total BTUH [kW]	20.7 [6.1]	19.8 [5.8]	19.7 [5.8]	19.3 [5.7]	18.5 [5.4]	18.4 [5.4]	18.2 [5.3]	17.5 [5.1]	17.4 [5.1]	
		Sens BTUH [kW]	-6.5 [-1.9]	-5.9 [-1.7]	-5.8 [-1.7]	-4.5 [-1.3]	-4.1 [-1.2]	-4 [-1.2]	-0.9 [-0.3]	-0.8 [-0.2]	-0.8 [-0.2]	
		Power	4.7	4.6	4.6	4.8	4.7	4.7	4.7	4.6	4.6	
	120ºF [48.9ºC]	Total BTUH [kW]	16.7 [4.9]	16 [4.7]	15.9 [4.7]	15.4 [4.5]	14.7 [4.3]	14.6 [4.3]	14.3 [4.2]	13.7 [4]	13.6 [4]	
		Sens BTUH [kW]	-10.5 [-3.1]	-9.5 [-2.8]	-9.3 [-2.7]	-8.5 [-2.5]	-7.7 [-2.3]	-7.6 [-2.2]	-4.9 [-1.4]	-4.4 [-1.3]	-4.4 [-1.3]	
		Power	5.2	5.1	5.1	5.3	5.2	5.2	5.2	5.1	5.1	

Appendix D – Heat Data for ZT 6Ton

GROSS SYSTEMS PERFORMANCE DATA (LOW REHEAT MODE) - RACCZT072											
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1											
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]		
CFM [L/s]			1680 [793]	1600 [755]	1120 [529]	1680 [793]	1600 [755]	1120 [529]	1680 [793]	1600 [755]	1120 [529]
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	31.8 [9.3]	31.5 [9.2]	29.8 [8.7]	31.6 [9.3]	31.3 [9.2]	29.6 [8.7]	35 [10.3]	34.7 [10.2]	32.8 [9.6]
		Sens BTUH [kW]	12.3 [3.6]	12 [3.5]	10.3 [3]	14 [4.1]	13.7 [4]	11.8 [3.5]	16.3 [4.8]	15.9 [4.7]	13.7 [4]
		Power	3.3	3.2	3.2	3.2	3.2	3.1	3.3	3.3	3.2
	65ºF [18.3ºC]	Total BTUH [kW]	31.7 [9.3]	31.4 [9.2]	29.7 [8.7]	31.5 [9.2]	31.2 [9.1]	29.5 [8.6]	34.9 [10.2]	34.6 [10.1]	32.7 [9.6]
		Sens BTUH [kW]	11.7 [3.4]	11.4 [3.3]	9.8 [2.9]	13.4 [3.9]	13.1 [3.8]	11.2 [3.3]	15.6 [4.6]	15.3 [4.5]	13.1 [3.8]
		Power	3.2	3.2	3.1	3.2	3.2	3.1	3.3	3.3	3.2
	70ºF [21.1ºC]	Total BTUH [kW]	31.2 [9.1]	30.9 [9.1]	29.3 [8.6]	31 [9.1]	30.7 [9]	29.1 [8.5]	34.5 [10.1]	34.2 [10]	32.3 [9.5]
		Sens BTUH [kW]	11 [3.2]	10.7 [3.1]	9.2 [2.7]	12.7 [3.7]	12.4 [3.6]	10.7 [3.1]	14.9 [4.4]	14.6 [4.3]	12.6 [3.7]
		Power	3.3	3.3	3.2	3.3	3.2	3.2	3.3	3.3	3.2
	75ºF [23.9ºC]	Total BTUH [kW]	30.4 [8.9]	30.1 [8.8]	28.5 [8.3]	30.2 [8.8]	29.9 [8.8]	28.3 [8.3]	33.6 [9.9]	33.3 [9.8]	31.5 [9.2]
		Sens BTUH [kW]	10.2 [3]	10 [2.9]	8.6 [2.5]	11.9 [3.5]	11.7 [3.4]	10 [2.9]	14.2 [4.2]	13.9 [4.1]	11.9 [3.5]
		Power	3.3	3.3	3.2	3.3	3.3	3.2	3.4	3.4	3.3
	80ºF [26.7ºC]	Total BTUH [kW]	29.2 [8.6]	28.9 [8.5]	27.3 [8]	29 [8.5]	28.7 [8.4]	27.2 [8]	32.4 [9.5]	32.1 [9.4]	30.4 [8.9]
		Sens BTUH [kW]	9.4 [2.7]	9.2 [2.7]	7.9 [2.3]	11.1 [3.3]	10.8 [3.2]	9.3 [2.7]	13.4 [3.9]	13.1 [3.8]	11.2 [3.3]
		Power	3.4	3.4	3.3	3.4	3.4	3.3	3.5	3.4	3.3
	85ºF [29.4ºC]	Total BTUH [kW]	27.6 [8.1]	27.3 [8]	25.9 [7.6]	27.4 [8]	27.2 [8]	25.7 [7.5]	30.9 [9]	30.6 [9]	28.9 [8.5]
		Sens BTUH [kW]	8.5 [2.5]	8.3 [2.4]	7.1 [2.1]	10.2 [3]	10 [2.9]	8.6 [2.5]	12.5 [3.7]	12.2 [3.6]	10.5 [3.1]
		Power	3.5	3.5	3.4	3.5	3.5	3.4	3.6	3.5	3.5
	90ºF [32.2ºC]	Total BTUH [kW]	25.6 [7.5]	25.4 [7.4]	24 [7]	25.4 [7.5]	25.2 [7.4]	23.8 [7]	28.9 [8.5]	28.6 [8.4]	27.1 [7.9]
		Sens BTUH [kW]	7.5 [2.2]	7.4 [2.2]	6.3 [1.9]	9.3 [2.7]	9.1 [2.7]	7.8 [2.3]	11.5 [3.4]	11.3 [3.3]	9.7 [2.8]
		Power	3.6	3.6	3.5	3.6	3.6	3.5	3.7	3.7	3.6

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Appendix D – Heat Data for ZT 6Ton

GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE) - RACCZT072											
Entering Indoor Air @ 75ºF [23.9ºC] dbE 1											
wbE			65.3ºF [18.5ºC]			64ºF [17.8ºC]			62.5ºF [16.9ºC]		
CFM [L/s]			2880 [1359]	2400 [1133]	1920 [906]	2880 [1359]	2400 [1133]	1920 [906]	2880 [1359]	2400 [1133]	1920 [906]
Outdoor Dry Bulb Temperature	60ºF [15.6ºC]	Total BTUH [kW]	36.6 [10.7]	35.4 [10.4]	34.1 [10]	35.6 [10.4]	34.3 [10.1]	33.1 [9.7]	35.7 [10.5]	34.5 [10.1]	33.2 [9.7]
		Sens BTUH [kW]	11.8 [3.5]	10.8 [3.2]	9.8 [2.9]	14.8 [4.3]	13.5 [4]	12.3 [3.6]	19 [5.6]	17.4 [5.1]	15.7 [4.6]
		Power	4.6	4.6	4.5	4.6	4.5	4.4	4.6	4.5	4.4
	70ºF [21.1ºC]	Total BTUH [kW]	35.2 [10.3]	34 [9.9]	32.7 [9.6]	34.1 [10]	32.9 [9.6]	31.7 [9.3]	34.3 [10]	33.1 [9.7]	31.9 [9.3]
		Sens BTUH [kW]	9.6 [2.8]	8.8 [2.6]	8 [2.3]	12.6 [3.7]	11.5 [3.4]	10.4 [3]	16.7 [4.9]	15.3 [4.5]	13.9 [4.1]
		Power	4.7	4.7	4.6	4.7	4.6	4.5	4.7	4.6	4.5
	80ºF [26.7ºC]	Total BTUH [kW]	32.8 [9.6]	31.6 [9.3]	30.5 [8.9]	31.7 [9.3]	30.6 [9]	29.5 [8.6]	31.9 [9.3]	30.8 [9]	29.6 [8.7]
		Sens BTUH [kW]	6.6 [1.9]	6.1 [1.8]	5.5 [1.6]	9.6 [2.8]	8.8 [2.6]	8 [2.3]	13.8 [4]	12.6 [3.7]	11.4 [3.4]
		Power	5	4.9	4.8	4.9	4.8	4.8	4.9	4.8	4.7
	90ºF [32.2ºC]	Total BTUH [kW]	29.5 [8.6]	28.4 [8.3]	27.4 [8]	28.4 [8.3]	27.4 [8]	26.4 [7.7]	28.6 [8.4]	27.6 [8.1]	26.5 [7.8]
		Sens BTUH [kW]	3 [0.9]	2.7 [0.8]	2.5 [0.7]	6 [1.7]	5.4 [1.6]	4.9 [1.4]	10.1 [3]	9.3 [2.7]	8.4 [2.5]
		Power	5.3	5.2	5.2	5.3	5.2	5.1	5.3	5.2	5.1
	100ºF [37.8ºC]	Total BTUH [kW]	25.2 [7.4]	24.3 [7.1]	23.4 [6.9]	24.1 [7.1]	23.3 [6.8]	22.4 [6.6]	24.3 [7.1]	23.4 [6.9]	22.6 [6.6]
		Sens BTUH [kW]	-1.4 [-0.4]	-1.3 [-0.4]	-1.1 [-0.3]	1.6 [0.5]	1.4 [0.4]	1.3 [0.4]	5.8 [1.7]	5.3 [1.5]	4.8 [1.4]
		Power	5.8	5.7	5.6	5.8	5.7	5.6	5.8	5.7	5.6
	110ºF [43.3ºC]	Total BTUH [kW]	20 [5.9]	19.3 [5.7]	18.6 [5.4]	18.9 [5.5]	18.3 [5.3]	17.6 [5.2]	19.1 [5.6]	18.4 [5.4]	17.8 [5.2]
		Sens BTUH [kW]	-6.5 [-1.9]	-5.9 [-1.7]	-5.4 [-1.6]	-3.5 [-1]	-3.2 [-0.9]	-2.9 [-0.8]	0.7 [0.2]	0.6 [0.2]	0.6 [0.2]
		Power	6.4	6.3	6.2	6.4	6.3	6.2	6.4	6.3	6.1
	120ºF [48.9ºC]	Total BTUH [kW]	13.9 [4.1]	13.4 [3.9]	12.9 [3.8]	12.8 [3.7]	12.3 [3.6]	11.9 [3.5]	13 [3.8]	12.5 [3.7]	12.1 [3.5]
		Sens BTUH [kW]	-12.2 [-3.6]	-11.2 [-3.3]	-10.2 [-3]	-9.3 [-2.7]	-8.5 [-2.5]	-7.7 [-2.3]	-5.1 [-1.5]	-4.7 [-1.4]	-4.2 [-1.2]
		Power	7.2	7.1	6.9	7.1	7	6.9	7.1	7	6.9

Appendix E – Heater Kit Characteristics

208/230V, THREE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036ACT HEATER KW	NONE	—	—	19/19	25/25	—	—	19/19	25/25
	DC10CP	7.5/10	20.9/24.1	34/38	35/40	27/31	30/35	19/19	25/25
	DC15CP	11.3/15	31.4/36.2	47/53	50/60	40/46	40/50	19/19	25/25
	DC20CP	15/20	41.7/48.1	60/68	60/70	53/61	60/70	19/19	25/25
036ACU HEATER KW	NONE	—	—	25/25	35/35	—	—	25/25	35/35
	DC10CP	7.5/10	20.9/24.1	41/45	45/45	27/31	30/35	25/25	35/35
	DC15CP	11.3/15	31.4/36.2	54/60	60/60	40/46	40/50	25/25	35/35
	DC20CP	15/20	41.7/48.1	67/75	70/80	53/61	60/70	25/25	35/35
048ACT HEATER KW	NONE	—	—	25/25	35/35	—	—	25/25	35/35
	DC10CP	7.5/10	20.9/24.1	34/38	35/40	27/31	30/35	25/25	35/35
	DC15CP	11.3/15	31.4/36.2	47/53	50/60	40/46	40/50	25/25	35/35
	DC20CP	15/20	41.7/48.1	60/68	60/70	53/61	60/70	25/25	35/35
048ACU HEATER KW	NONE	—	—	31/31	40/40	—	—	31/31	40/40
	DC10CP	7.5/10	20.9/24.1	41/45	45/45	27/31	30/35	31/31	40/40
	DC15CP	11.3/15	31.4/36.2	54/60	60/60	40/46	40/50	31/31	40/40
	DC20CP	15/20	41.7/48.1	67/75	70/80	53/61	60/70	31/31	40/40
060ACT HEATER KW	NONE	—	—	30/30	45/45	—	—	30/30	45/45
	DC10CP	7.5/10	20.9/24.1	36/40	45/45	27/31	30/35	30/30	45/45
	DC15CP	11.3/15	31.4/36.2	49/55	50/60	40/46	40/50	30/30	45/45
	DC20CP	15/20	41.7/48.1	62/70	70/70	53/61	60/70	30/30	45/45
060ACU HEATER KW	NONE	—	—	34/34	45/45	—	—	34/34	45/45
	DC10CP	7.5/10	20.9/24.1	41/45	45/45	27/31	30/35	34/34	45/45
	DC15CP	11.3/15	31.4/36.2	54/60	50/60	40/46	40/50	34/34	45/45
	DC20CP	15/20	41.7/48.1	67/75	70/70	53/61	60/70	34/34	45/45

480V, THREE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036ADT HEATER KW	NONE	—	—	11	15	—	—	11	15
	DC10DNV	10	12	19	20	15	15	11	15
	DC15DNV	15	18.1	27	30	23	25	11	15
	DC20DNV	20	24.1	35	35	31	35	11	15
036ADU HEATER KW	NONE	—	—	10	15	—	—	10	15
	DC10DNV	10	12	18	20	15	15	10	15
	DC15DNV	15	18.1	26	30	23	25	10	15
	DC20DNV	20	24.1	33	35	31	35	10	15
048ADT HEATER KW	NONE	—	—	14	15	—	—	13	15
	DC10DNV	10	12	19	20	15	15	13	15
	DC15DNV	15	18.1	27	30	23	25	13	15
	DC20DNV	20	24.1	35	35	31	35	13	15
048ADU HEATER KW	NONE	—	—	13	15	—	—	12	15
	DC10DNV	10	12	18	20	15	15	12	15
	DC15DNV	15	18.1	26	30	23	25	12	15
	DC20DNV	20	24.1	33	35	31	35	12	15
060ADT HEATER KW	NONE	—	—	16	20	—	—	15	20
	DC10DNV	10	12	20	20	15	15	15	20
	DC15DNV	15	18.1	28	30	23	25	15	20
	DC20DNV	20	24.1	36	40	31	35	15	20
060ADU HEATER KW	NONE	—	—	17	20	—	—	16	20
	DC10DNV	10	12	21	25	15	15	16	20
	DC15DNV	15	18.1	29	30	23	25	16	20
	DC20DNV	20	24.1	37	40	31	35	16	20

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Appendix E – Heater Kit Characteristics

208/230V, ONE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036AJT HEATER KW	NONE	—	—	25/25	35/35	—	—	25/25	35/35
	DC10JT	7.5/10	36.2/41.7	53/60	60/60	46/53	50/60	25/25	35/35
	DC15JT	11.3/15	54.3/62.7	76/86	80/90	68/79	70/80	25/25	35/35
	DC20JT	15/20	72.2/83.3	98/112	100/125	91/105	100/110	25/25	35/35
036AJU HEATER KW	NONE	—	—	31/31	40/40	—	—	31/31	40/40
	DC10JT	7.5/10	36.2/41.7	60/67	60/70	46/53	50/60	31/31	40/40
	DC15JT	11.3/15	54.3/62.7	83/93	90/100	68/79	70/80	31/31	40/40
	DC20JT	15/20	72.2/83.3	105/119	110/125	91/105	100/110	31/31	40/40
048AJT HEATER KW	NONE	—	—	34/34	50/50	—	—	34/34	50/50
	DC10JT	7.5/10	36.2/41.7	53/60	60/60	46/53	50/60	34/34	50/50
	DC15JT	11.3/15	54.3/62.7	76/86	80/90	68/79	70/80	34/34	50/50
	DC20JT	15/20	72.2/83.3	98/112	100/125	91/105	100/110	34/34	50/50
048AJU HEATER KW	NONE	—	—	40/40	50/50	—	—	40/40	50/50
	DC10JT	7.5/10	36.2/41.7	60/67	60/70	46/53	50/60	40/40	50/50
	DC15JT	11.3/15	54.3/62.7	83/93	90/100	68/79	70/80	40/40	50/50
	DC20JT	15/20	72.2/83.3	105/119	110/125	91/105	100/110	40/40	50/50
060AJT HEATER KW	NONE	—	—	42/42	60/60	—	—	42/42	60/60
	DC10JT	7.5/10	36.2/41.7	55/62	60/70	46/53	50/60	42/42	60/60
	DC15JT	11.3/15	54.3/62.7	78/88	80/90	68/79	70/80	42/42	60/60
	DC20JT	15/20	72.2/83.3	100/114	100/125	91/105	100/110	42/42	60/60
060AJU HEATER KW	NONE	—	—	46/46	70/70	—	—	46/46	70/70
	DC10JT	7.5/10	36.2/41.7	60/67	70/70	46/53	50/60	46/46	70/70
	DC15JT	11.3/15	54.3/62.7	83/93	90/100	68/79	70/80	46/46	70/70
	DC20JT	15/20	72.2/83.3	105/119	110/125	91/105	100/110	46/46	70/70

575V, THREE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036AYT HEATER KW	NONE	—	—	12	15	—	—	12	15
	DC10Y	10	9.6	20	20	12	15	12	15
	DC15Y	15	14.5	26	30	19	20	12	15
	DC20Y	20	19.3	32	35	25	25	12	15
036AYU HEATER KW	NONE	—	—	19	30	—	—	19	30
	DC10Y	10	9.6	27	35	12	15	19	30
	DC15Y	15	14.5	33	40	19	20	19	30
	DC20Y	20	19.3	39	45	25	25	19	30
048AYT HEATER KW	NONE	—	—	13	15	—	—	13	15
	DC10Y	10	9.6	20	20	12	15	13	15
	DC15Y	15	14.5	26	30	19	20	13	15
	DC20Y	20	19.3	32	35	25	25	13	15
048AYU HEATER KW	NONE	—	—	20	30	—	—	20	30
	DC10Y	10	9.6	27	35	12	15	20	30
	DC15Y	15	14.5	33	40	19	20	20	30
	DC20Y	20	19.3	39	45	25	25	20	30
060AYT HEATER KW	NONE	—	—	14	20	—	—	14	20
	DC10Y	10	9.6	22	25	12	15	14	20
	DC15Y	15	14.5	28	30	19	20	14	20
	DC20Y	20	19.3	34	35	25	25	14	20
060AYU HEATER KW	NONE	—	—	19	30	—	—	19	30
	DC10Y	10	9.6	27	35	12	15	19	30
	DC15Y	15	14.5	33	40	19	20	19	30
	DC20Y	20	19.3	39	45	25	25	19	30

Appendix E – Heater Kit Characteristics

208/230V, THREE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZT (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036ACT HEATER KW	NONE	—	—	23/23	30/30	—	—	23/23	30/30
	DC10CP	7.5/10	20.9/24.1	34/38	35/40	27/31	30/35	23/23	30/30
	DC15CP	11.3/15	31.4/36.2	47/53	50/60	40/46	40/50	23/23	30/30
	DC20CP	15/20	41.7/48.1	60/68	60/70	53/61	60/70	23/23	30/30
036ACU HEATER KW	NONE	—	—	28/28	35/35	—	—	28/28	35/35
	DC10CP	7.5/10	20.9/24.1	41/45	45/45	27/31	30/35	28/28	35/35
	DC15CP	11.3/15	31.4/36.2	54/60	60/60	40/46	40/50	28/28	35/35
	DC20CP	15/20	41.7/48.1	67/75	70/80	53/61	60/70	28/28	35/35
048ACT HEATER KW	NONE	—	—	25/25	35/35	—	—	25/25	35/35
	DC10CP	7.5/10	20.9/24.1	34/38	35/40	27/31	30/35	25/25	35/35
	DC15CP	11.3/15	31.4/36.2	47/53	50/60	40/46	40/50	25/25	35/35
	DC20CP	15/20	41.7/48.1	60/68	60/70	53/61	60/70	25/25	35/35
048ACU HEATER KW	NONE	—	—	31/31	40/40	—	—	31/31	40/40
	DC10CP	7.5/10	20.9/24.1	41/45	45/45	27/31	30/35	31/31	40/40
	DC15CP	11.3/15	31.4/36.2	54/60	60/60	40/46	40/50	31/31	40/40
	DC20CP	15/20	41.7/48.1	67/75	70/80	53/61	60/70	31/31	40/40
060ACT HEATER KW	NONE	—	—	30/30	45/45	—	—	30/30	45/45
	DC10CP	7.5/10	20.9/24.1	36/40	45/45	27/31	30/35	30/30	45/45
	DC15CP	11.3/15	31.4/36.2	49/55	50/60	40/46	40/50	30/30	45/45
	DC20CP	15/20	41.7/48.1	62/70	70/70	53/61	60/70	30/30	45/45
060ACU HEATER KW	NONE	—	—	34/34	45/45	—	—	34/34	45/45
	DC10CP	7.5/10	20.9/24.1	41/45	45/45	27/31	30/35	34/34	45/45
	DC15CP	11.3/15	31.4/36.2	54/60	50/60	40/46	40/50	34/34	45/45
	DC20CP	15/20	41.7/48.1	67/75	70/70	53/61	60/70	34/34	45/45
072ACT HEATER KW	NONE	—	—	35/35	50/50	—	—	35/35	50/50
	DC15CP	11.3/15.0	31.4/36.2	50/56	50/60	40/46	40/50	35/35	50/50
	DC20CP	15.0/20.0	41.7/48.1	63/71	70/80	53/61	60/70	35/35	50/50
	DC24CP	18.0/24.0	50.0/57.7	73/83	80/90	63/73	70/80	35/35	50/50
072ACU HEATER KW	NONE	—	—	35/35	50/50	—	—	35/35	50/50
	DC15CP	11.3/15.1	31.4/36.3	50/56	50/60	40/46	40/50	35/35	50/50
	DC20CP	15.0/20.0	41.7/48.1	63/71	70/80	53/61	60/70	35/35	50/50
	DC24CP	18.0/24.0	50.0/57.7	73/83	80/90	63/73	70/80	35/35	50/50

480V, THREE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036ADT HEATER KW	NONE	—	—	11	15	—	—	11	15
	DC10DNV	10	12	19	20	15	15	11	15
	DC15DNV	15	18.1	26	30	23	25	11	15
	DC20DNV	20	24.1	34	35	31	35	11	15
036ADU HEATER KW	NONE	—	—	11	15	—	—	11	15
	DC10DNV	10	12	20	20	15	15	11	15
	DC15DNV	15	18.1	27	30	23	25	11	15
	DC20DNV	20	24.1	35	35	31	35	11	15
048ADT HEATER KW	NONE	—	—	14	15	—	—	13	15
	DC10DNV	10	12	19	20	15	15	13	15
	DC15DNV	15	18.1	27	30	23	25	13	15
	DC20DNV	20	24.1	35	35	31	35	13	15
048ADU HEATER KW	NONE	—	—	13	15	—	—	12	15
	DC10DNV	10	12	18	20	15	15	12	15
	DC15DNV	15	18.1	26	30	23	25	12	15
	DC20DNV	20	24.1	33	35	31	35	12	15
060ADT HEATER KW	NONE	—	—	16	20	—	—	15	20
	DC10DNV	10	12	20	20	15	15	15	20
	DC15DNV	15	18.1	28	30	23	25	15	20
	DC20DNV	20	24.1	36	40	31	35	15	20
060ADU HEATER KW	NONE	—	—	17	20	—	—	16	20
	DC10DNV	10	12	21	25	15	15	16	20
	DC15DNV	15	18.1	29	30	23	25	16	20
	DC20DNV	20	24.1	37	40	31	35	16	20
072ADT HEATER KW	NONE	—	—	18	25	—	—	18	25
	DC15DNV	15.0	18.1	29	30	23	25	18	25
	DC20DNV	20.0	24.1	37	40	31	35	18	25
	DC24DNV	24.0	28.9	43	45	37	40	18	25
072ADU HEATER KW	NONE	—	—	18	25	—	—	18	25
	DC15DNV	15.0	18.1	29	30	23	25	18	25
	DC20DNV	20.0	24.1	37	40	31	35	18	25
	DC24DNV	24.0	28.9	43	45	37	40	18	25

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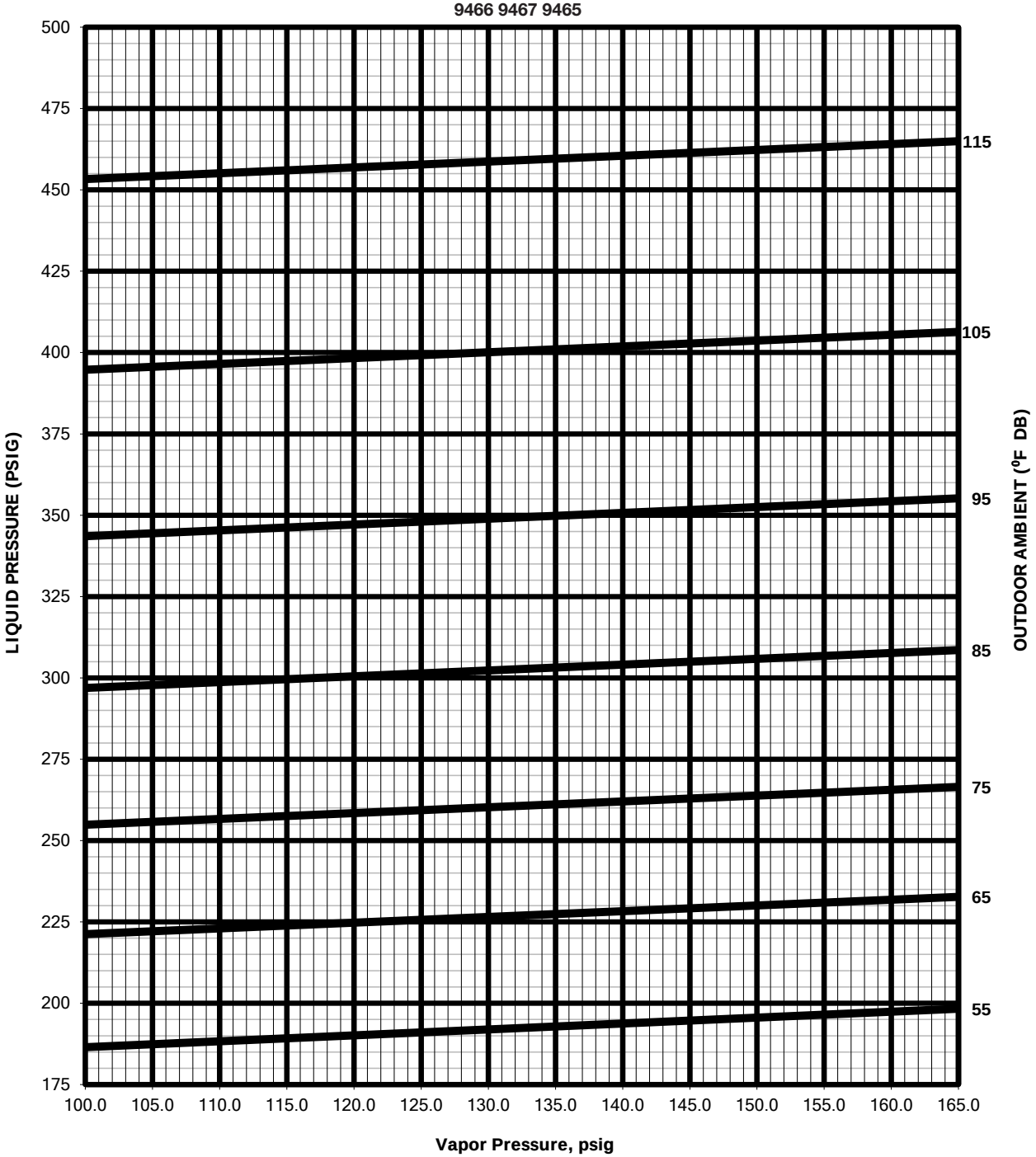
Appendix E – Heater Kit Characteristics

208/230V, ONE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
036AJT HEATER KW	NONE	—	—	29/29	40/40	—	—	29/29	40/40
	DC10JT	7.5/10	36.2/41.7	53/60	60/60	46/53	50/60	29/29	40/40
	DC15JT	11.3/15	54.3/62.7	76/86	80/90	68/79	70/80	29/29	40/40
	DC20JT	15/20	72.2/83.3	98/112	100/125	91/105	100/110	29/29	40/40
048AJT HEATER KW	NONE	—	—	37/37	50/50	—	—	37/37	50/50
	DC10JT	7.5/10	36.2/41.7	53/60	60/60	46/53	50/60	37/37	50/50
	DC15JT	11.3/15	54.3/62.7	76/86	80/90	68/79	70/80	37/37	50/50
	DC20JT	15/20	72.2/83.3	98/112	100/125	91/105	100/110	37/37	50/50
060AJT HEATER KW	NONE	—	—	45/45	70/70	—	—	45/45	70/70
	DC10JT	7.5/10	36.2/41.7	55/62	60/70	46/53	50/60	45/45	70/70
	DC15JT	11.3/15	54.3/62.7	78/88	80/90	68/79	70/80	45/45	70/70
	DC20JT	15/20	72.2/83.3	100/114	100/125	91/105	100/110	45/45	70/70

575V, THREE PHASE, 60 Hz, AUXILARY ELECTRIC HEATER KIT CHARACTERISTICS AND APPLICATION									
Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit			
UNIT MODEL NUMBER RACCZR (036-060)	Heater Kit			Air Conditioner		Heater Kit		Air Conditioner	
	MODEL NO. RXJJ-	Rated Heater KW @ 208/230	FLA	UNIT MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)	MIN. CKT. AMPACITY	MAX FUSE OR CKT. BKR. SIZE (CKT. BKR. MUST BE HACR TYPE FOR USA)
072AYT HEATER KW	NONE	-	-	16	20	-	-	16	20
	DC15Y	15	14.5	27	30	19	20	16	20
	DC20Y	20	19.3	33	35	25	25	16	20
	DC24Y	24	23.1	38	40	29	30	16	20
072AYU HEATER KW	NONE	-	-	16	20	-	-	16	20
	DC15Y	15	14.5	27	30	19	20	16	20
	DC20Y	20	19.3	33	35	25	25	16	20
	DC24Y	24	23.1	38	40	29	30	16	20

Appendix F – Refrigerant Charging Charts

RACCZR036*****A**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ
COMP. CODE
9466 9467 9465



CAUTION: 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

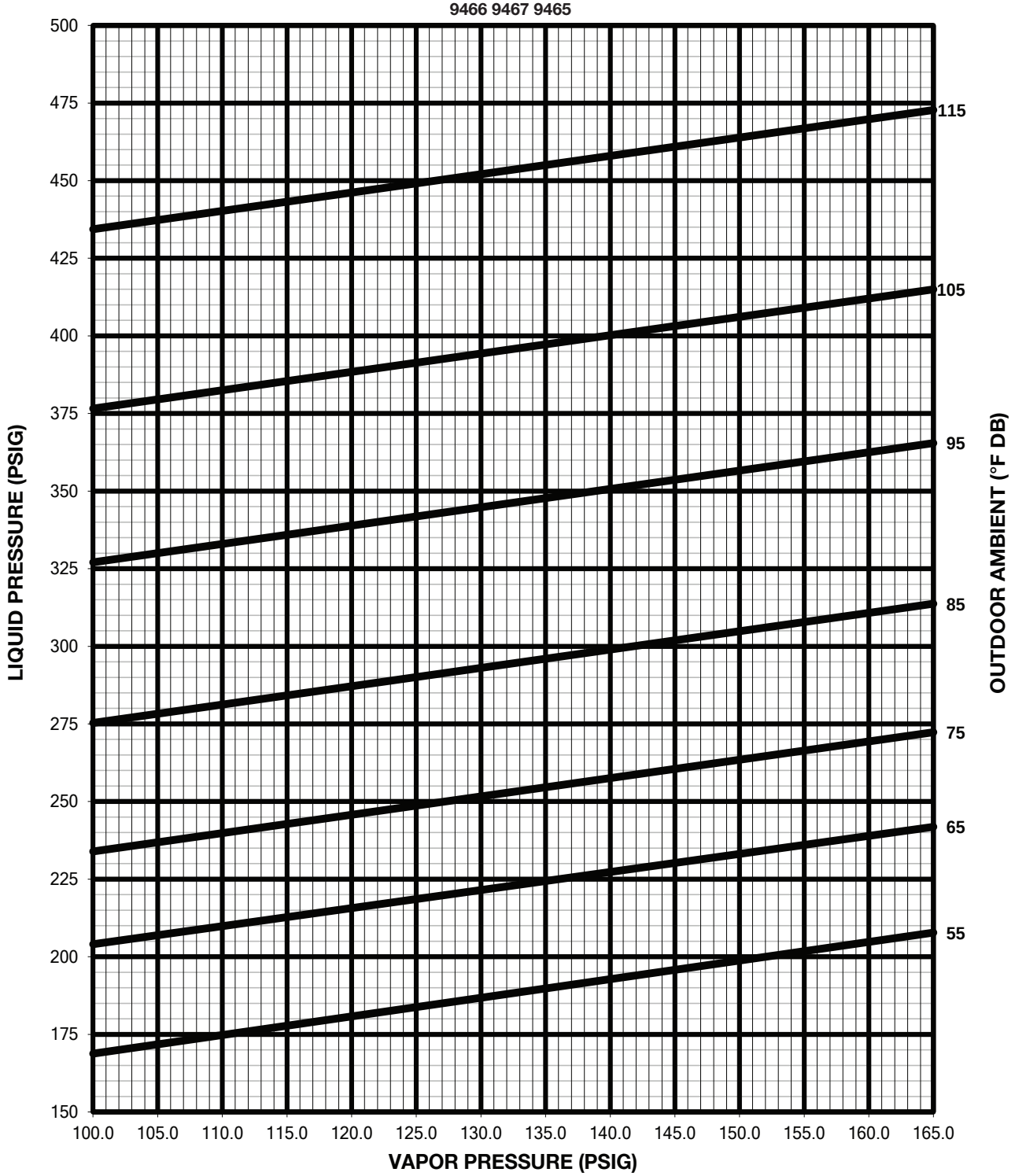
INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-02-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts

RACCZR036*****A WITH REHEAT**
RACCZR036*****C WITH REHEAT**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ
COMP. CODE
9466 9467 9465



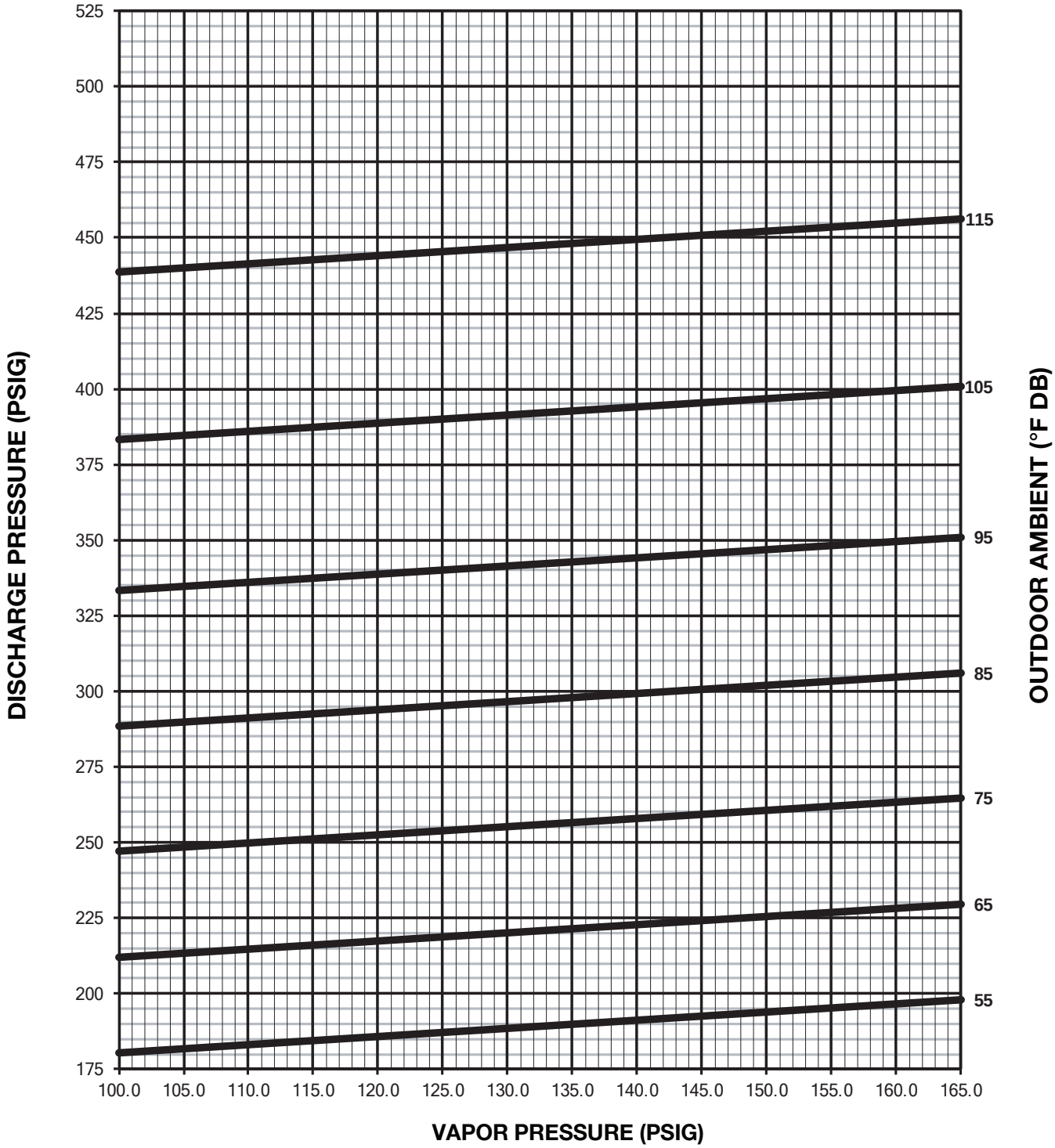
CAUTION INSTRUCTIONS:

1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND L IOUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIOUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106140-04-00

Appendix F – Refrigerant Charging Charts

RACCZR036*****C**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ 575V 3Φ
COMP. CODE
9630 9631 9629 9628



CAUTION 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

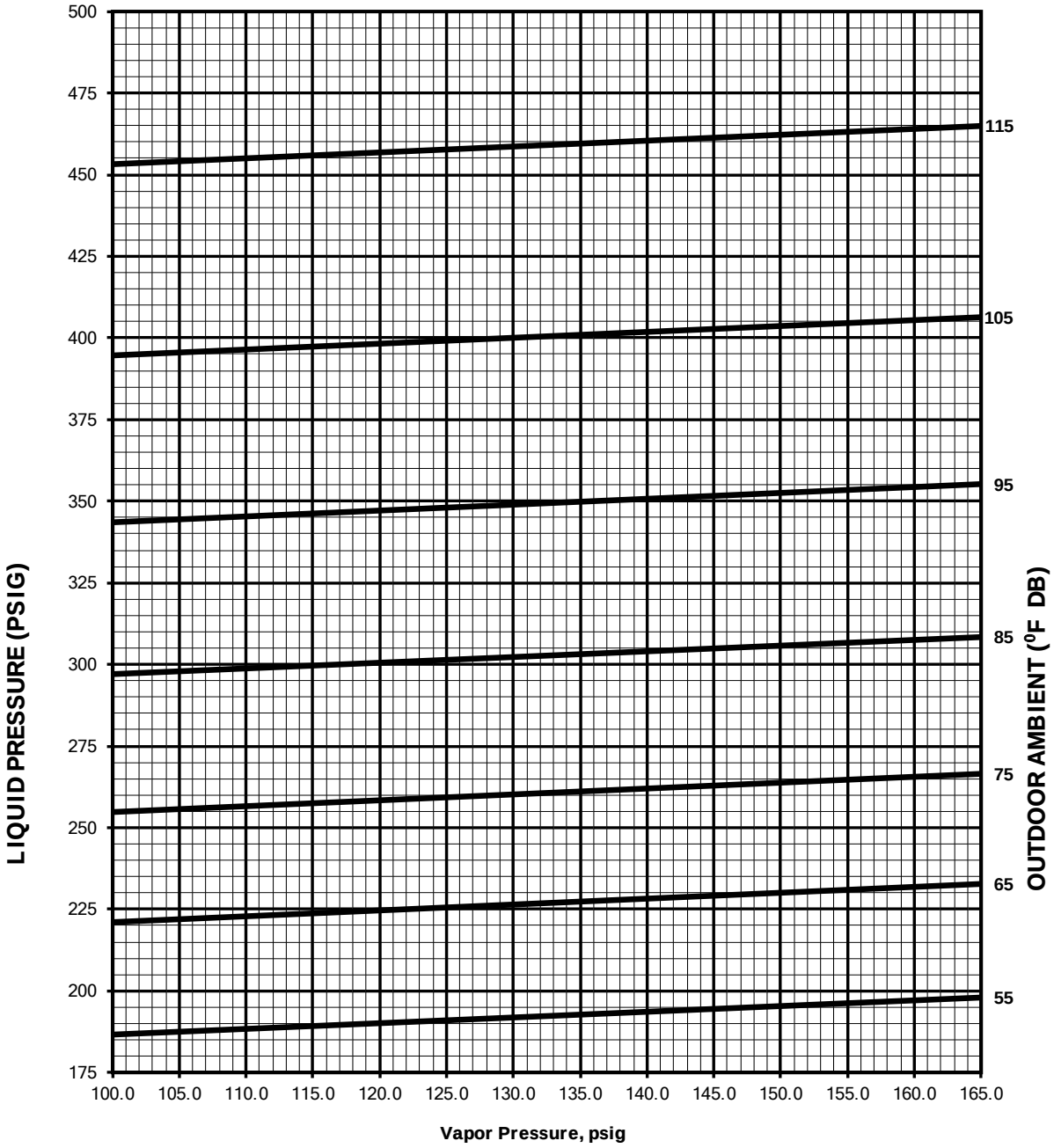
INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2.MEASURE OUTDOOR AMBIENT TO UNIT.
3.PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4.IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5.IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-05-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZR048*****
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ**
**COMP. CODE
9475 9476 9474**



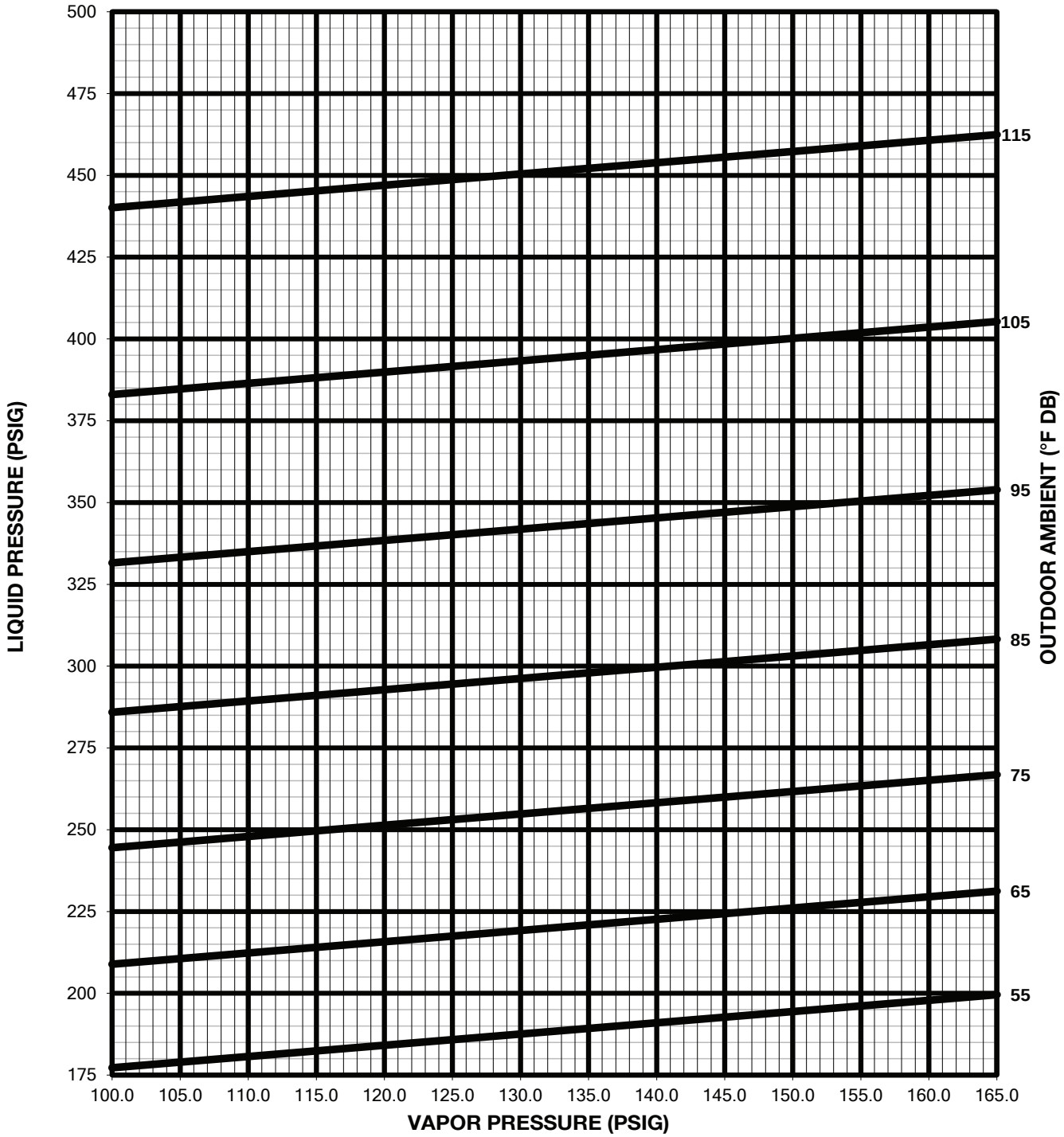
CAUTION: **1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!**

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND L IOUID.
2.MEASURE OUTDOOR AMBIENT TO UNIT.
3.PLACE X ON CHART WHERE SUCTION AND LIOUID INTERSECT.
4.IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5.IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-01-01

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZR048*****A WITH REHEAT**
RACCZR048*****C WITH REHEAT**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ
COMP. CODE
9475 9476 9474



CAUTION INSTRUCTIONS:

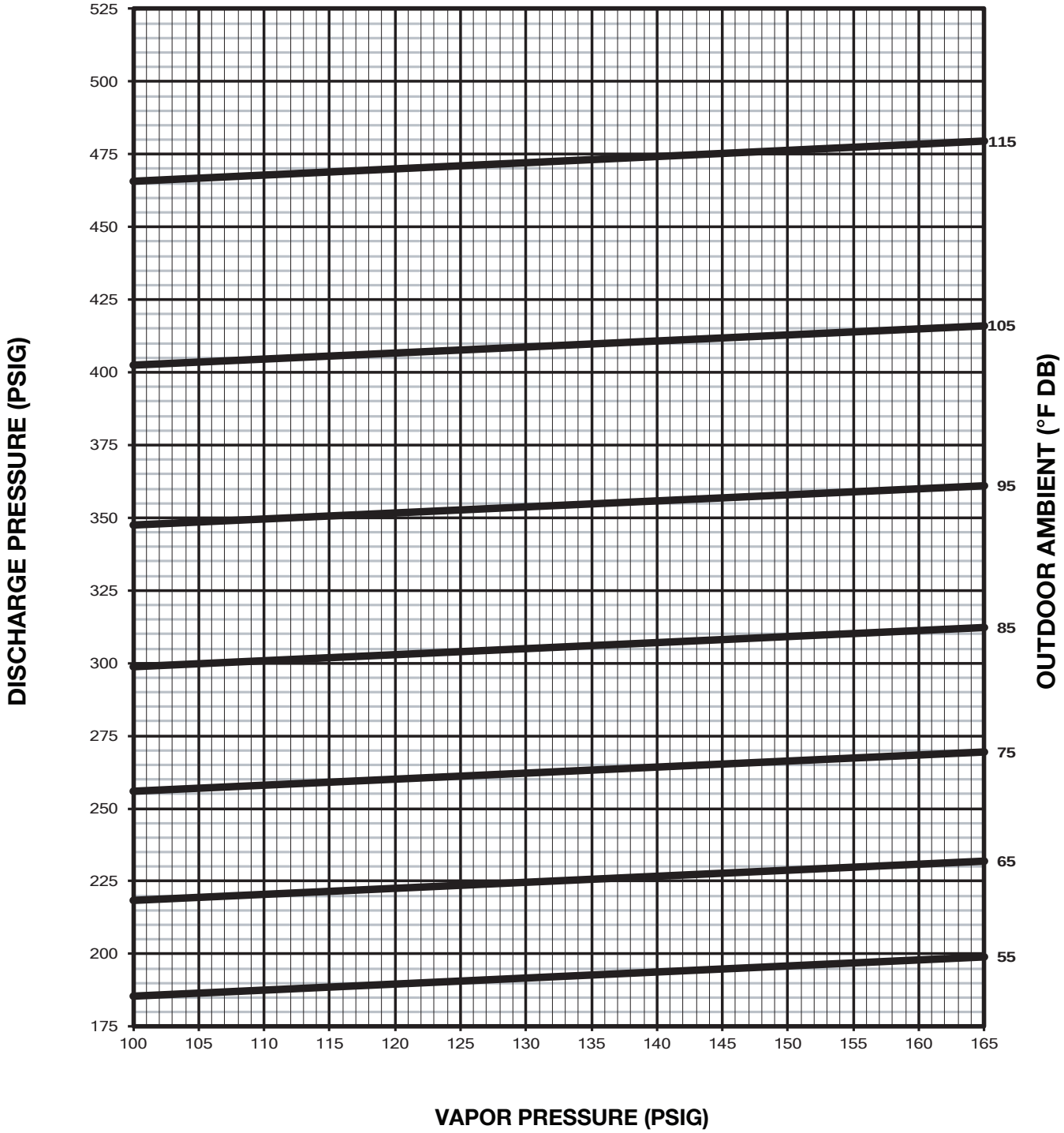
1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND L IOUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIOUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106140-05-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZR048*****C**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ 575V 3Φ
COMP. CODE
9637 9638 9636 9635



CAUTION INSTRUCTIONS:

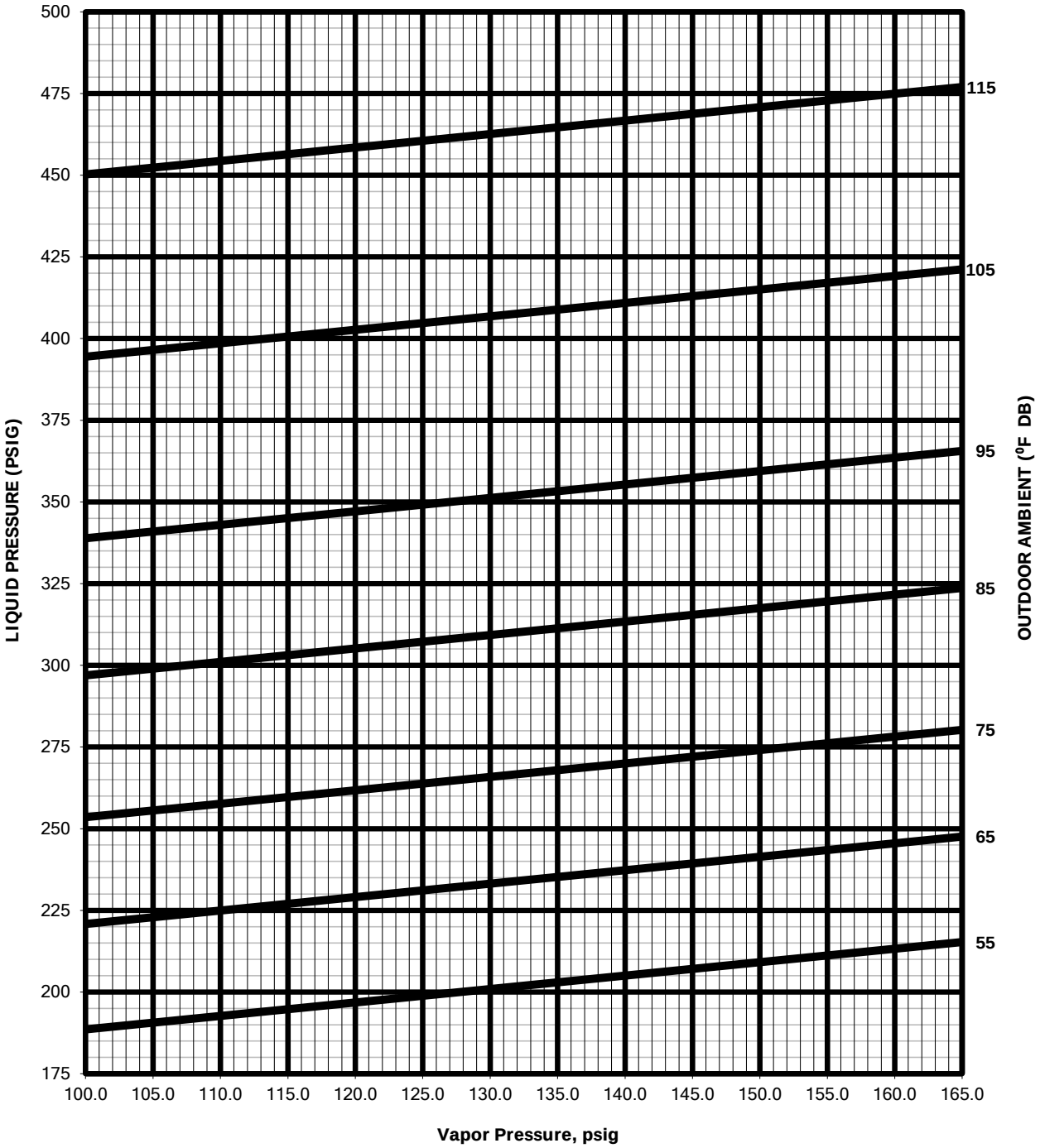
1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-06-01

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZR060*****A**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ
COMP. CODE
9485 9486 9484



CAUTION: **1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!**

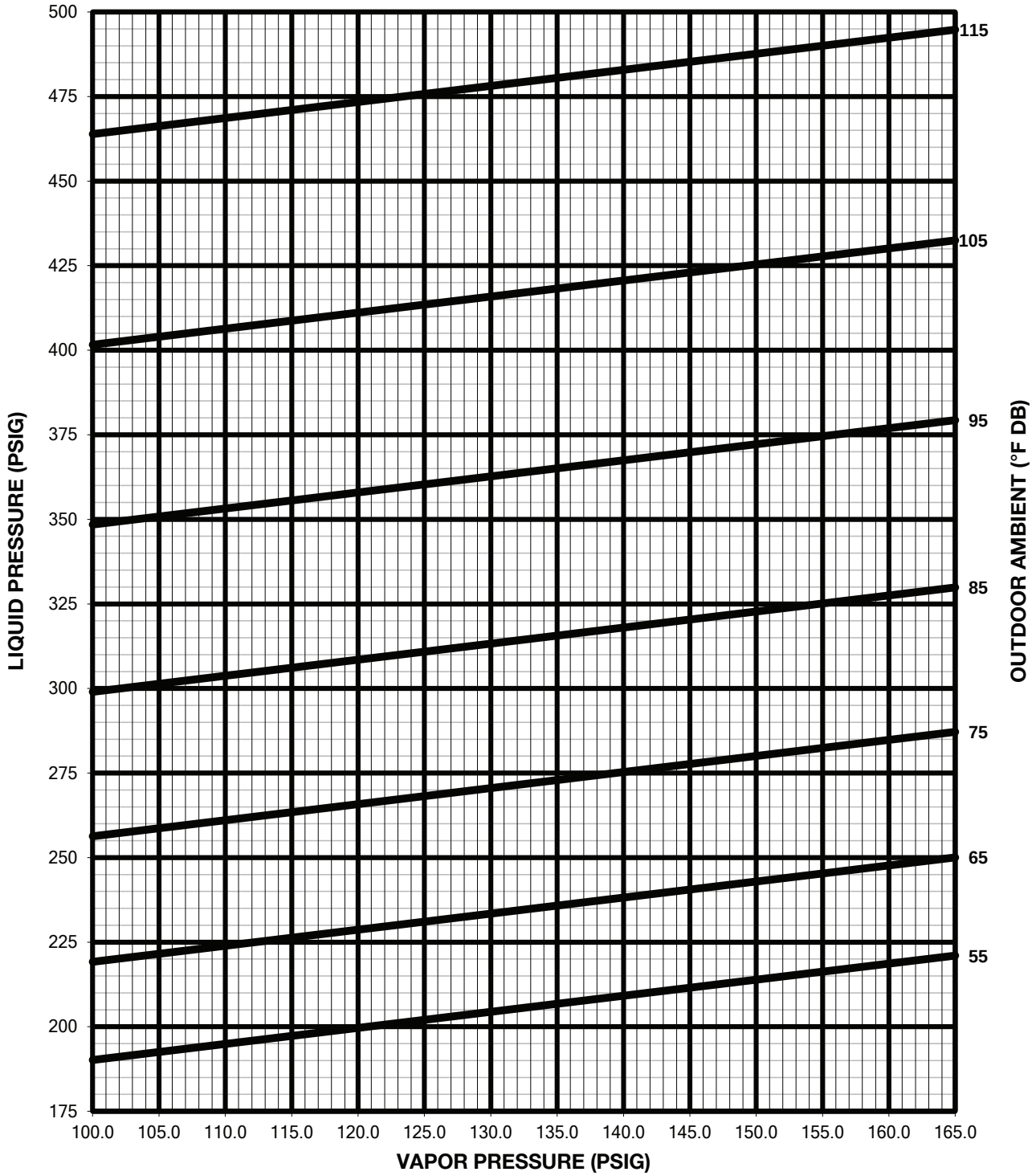
INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2.MEASURE OUTDOOR AMBIENT TO UNIT.
3.PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4.IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5.IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-03-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZR060*****A WITH REHEAT**
RACCZR060*****C WITH REHEAT**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ
COMP. CODE
9485 9486 9484



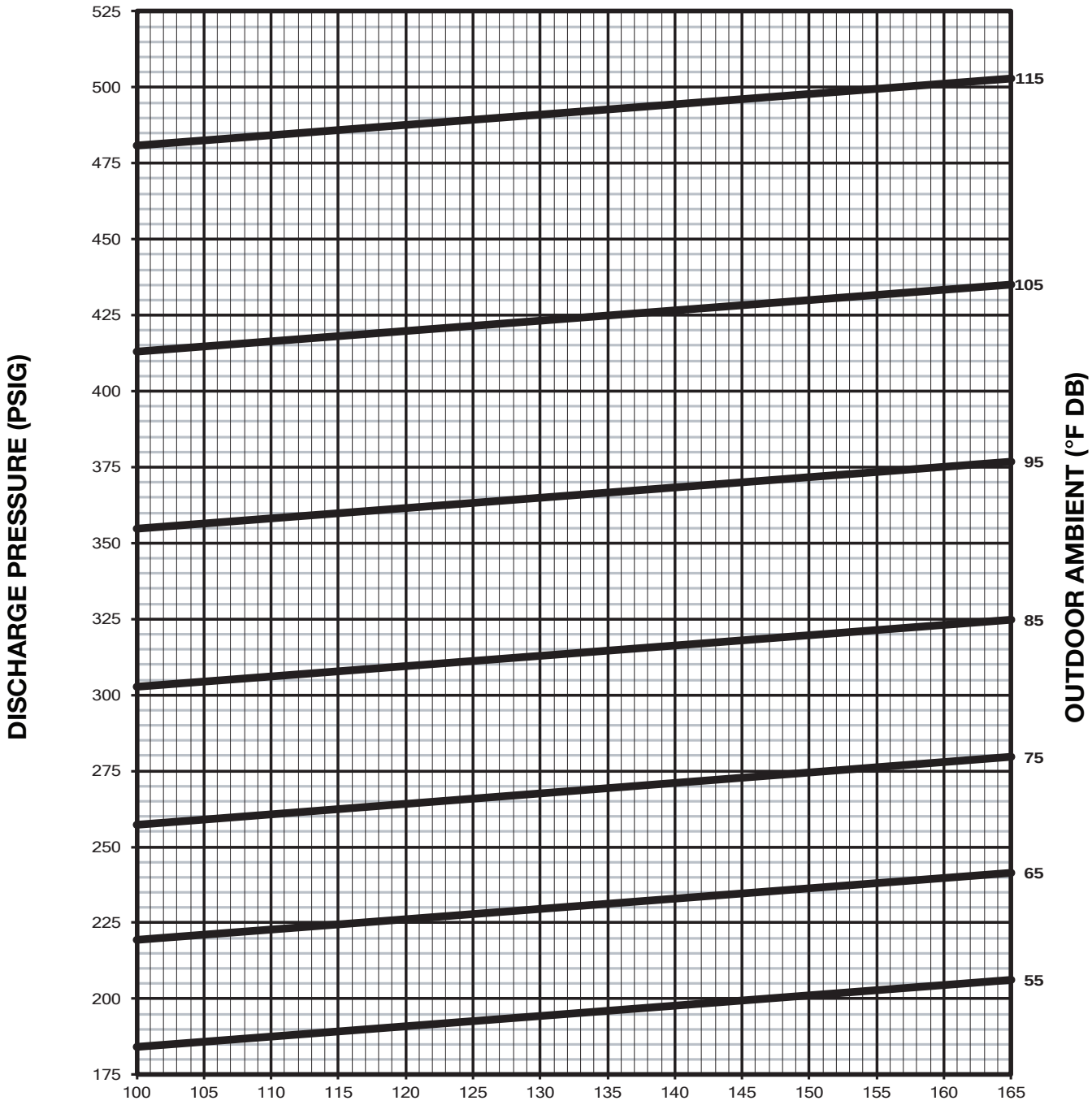
CAUTION INSTRUCTIONS:

1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND L IOUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIOUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106140-06-00

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZR060*****C**
208/230 V 1Φ 208/230 V 3Φ 460V 3Φ 575V 3Φ
COMP. CODE
9644 9645 9643 9642



CAUTION INSTRUCTIONS:

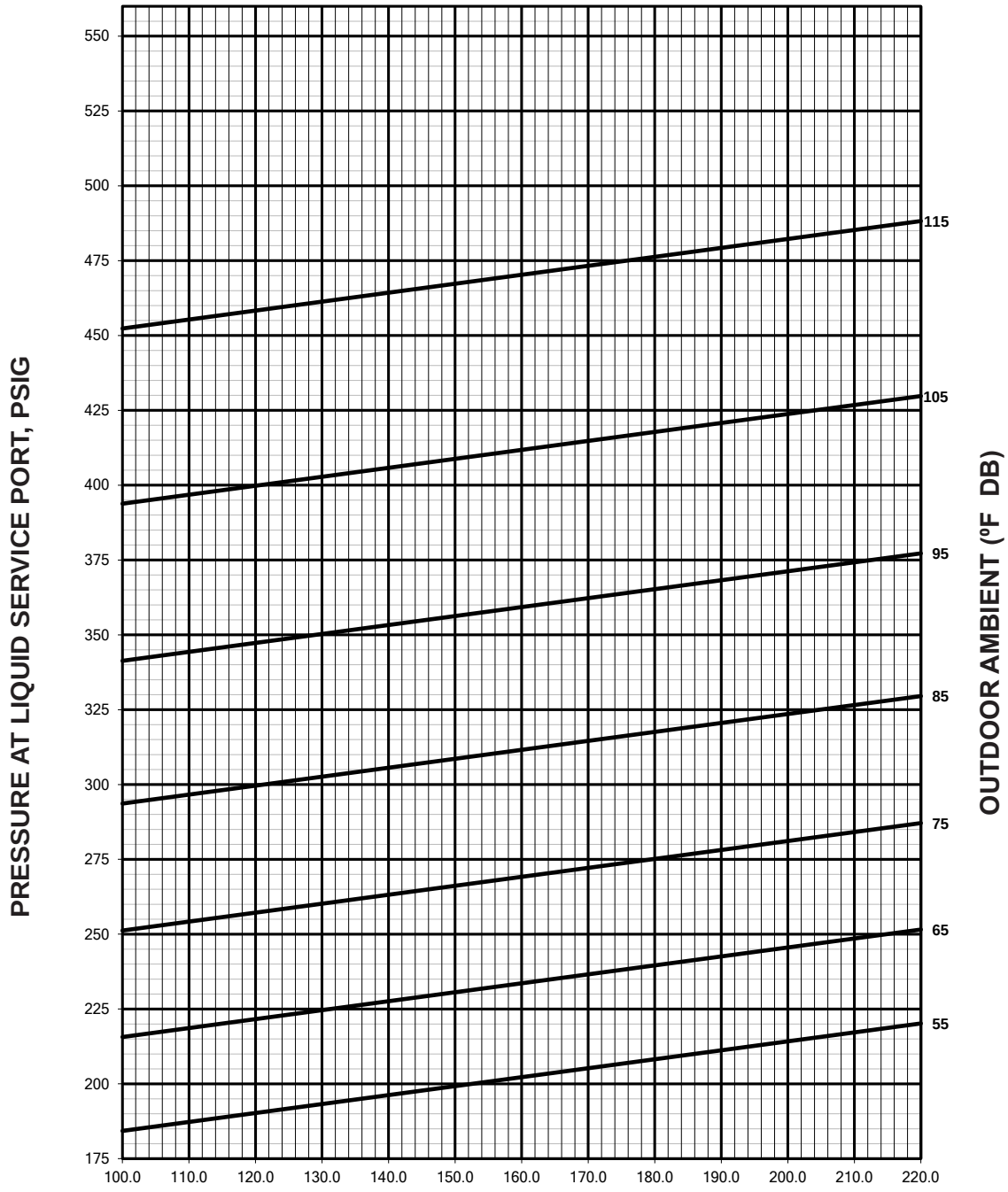
1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2.MEASURE OUTDOOR AMBIENT TO UNIT.
3.PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4.IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5.IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-07-01

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT036*******C



CAUTION: RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

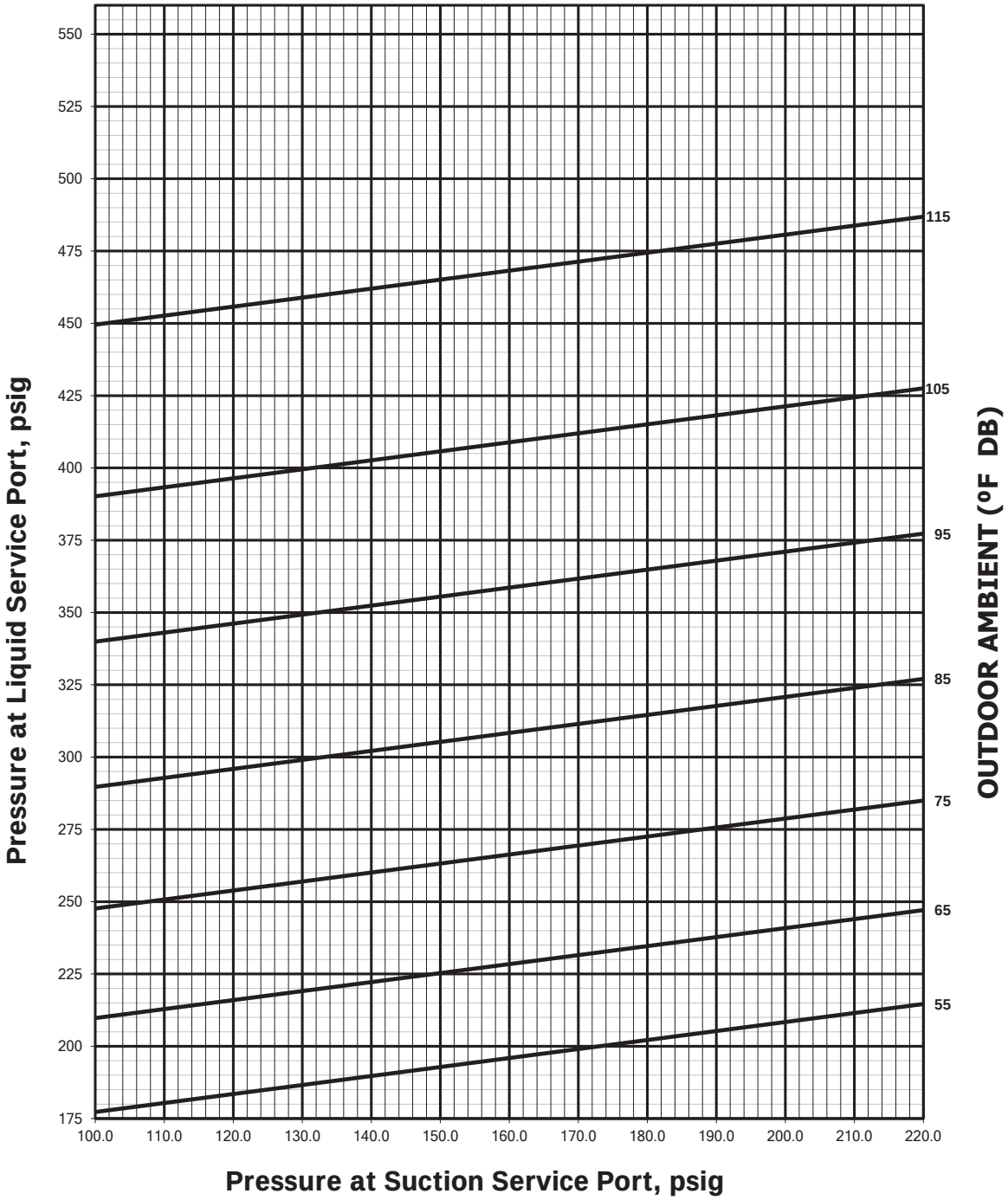
NOTE: DESIGN SUBCOOLING (AT SERVICE PORT) @ 95°F OUTDOOR = 12°F.

INSTRUCTIONS:
1. MEASURE PRESSURE AT SUCTION AND LIQUID SERVICE PORTS ON UNIT.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE "X" ON CHARGE CHART WHERE THE SUCTION AND LIQUID PRESSURES INTERSECT.
4. IF "X" IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF "X" IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-12-00

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT036*******C with Reheat



CAUTION: RETURN AIR TEMPERATURE MUT BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
NOTE: DESIGN SUBCOOLING (AT SERVICE PORT) @ 95° F OUTDOOR= 12° F

INSTRUCTIONS:

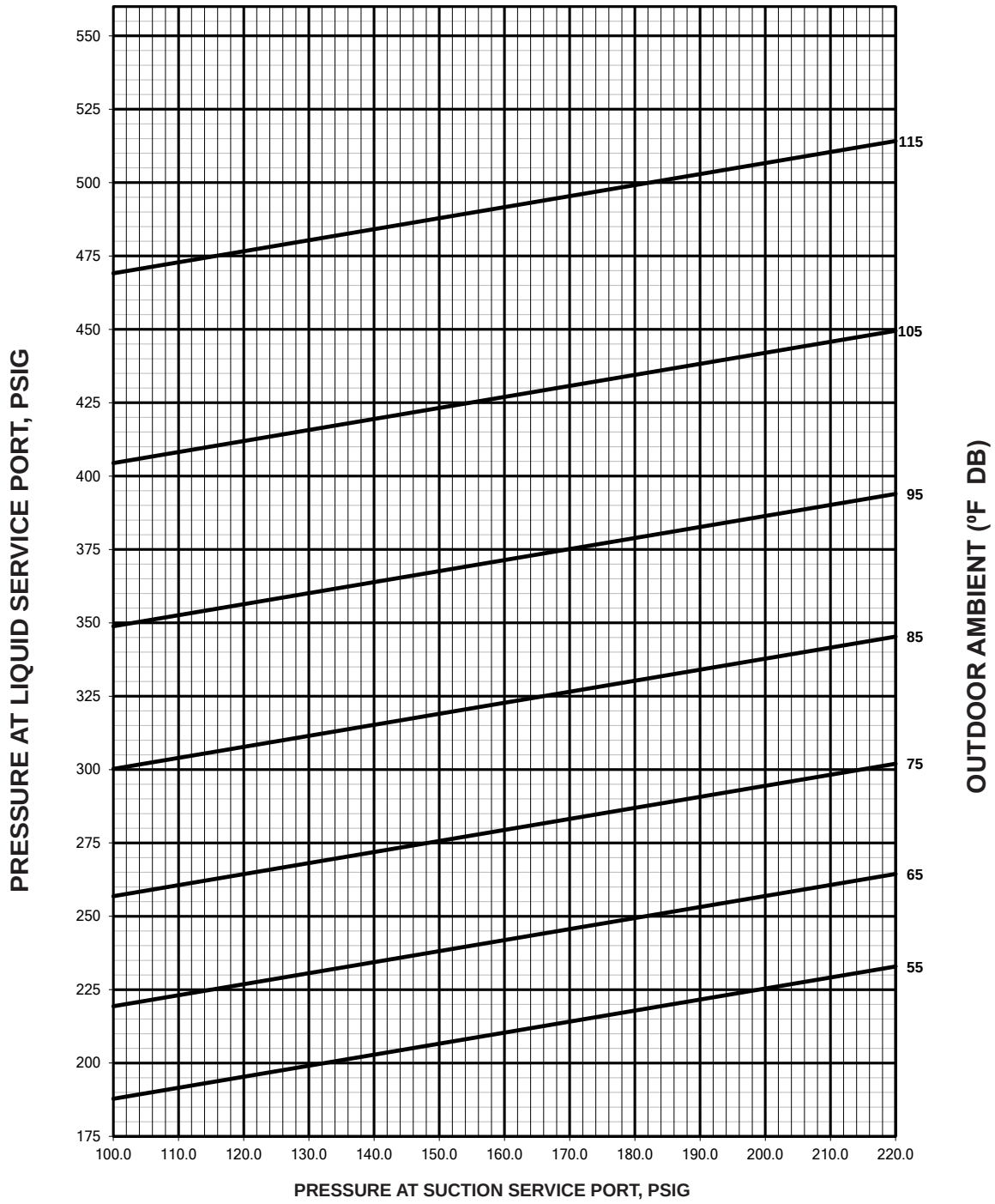
1) MEASURE PRESSURE AT SUCTION AND LIQUID SERVICE PORTS ON UNIT.
2) MEASURE OUTDOOR AMBIENT TO UNIT.
3) PLACE "X" ON CHART CHART WHERE THE SUCTION AND LIQUID PRESSURES INTERSECT.
4) IF "X' IS BELLOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3
5) IF "X" IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3

92-106696-13-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT048*******C



CAUTION: RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

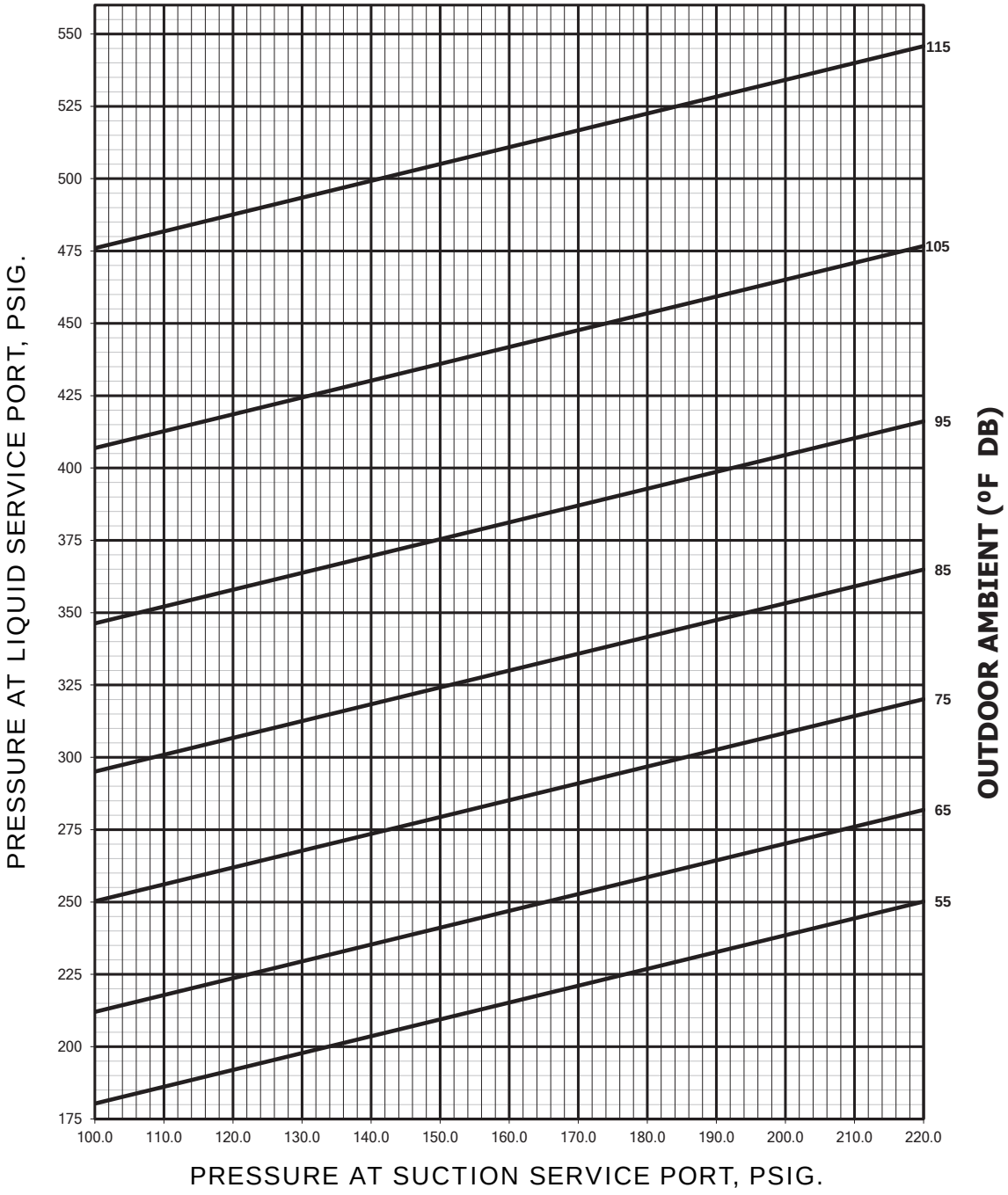
NOTE: DESIGN SUBCOOLING (AT SERVICE PORT) @ 95°F OUTDOOR = 12°F.

INSTRUCTIONS:
1. MEASURE PRESSURE AT SUCTION AND LIQUID SERVICE PORTS ON UNIT.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE "X" ON CHARGE CHART WHERE THE SUCTION AND LIQUID PRESSURES INTERSECT.
4. IF "X" IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF "X" IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-14-00

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT048*******C with Reheat



CAUTION: RETURN AIR TEMPERATURE MUT BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
NOTE: DESIGN SUBCOOLING (AT SERVICE PORT) @ 95°F OUTDOOR= 12°F

INSTRUCTIONS:

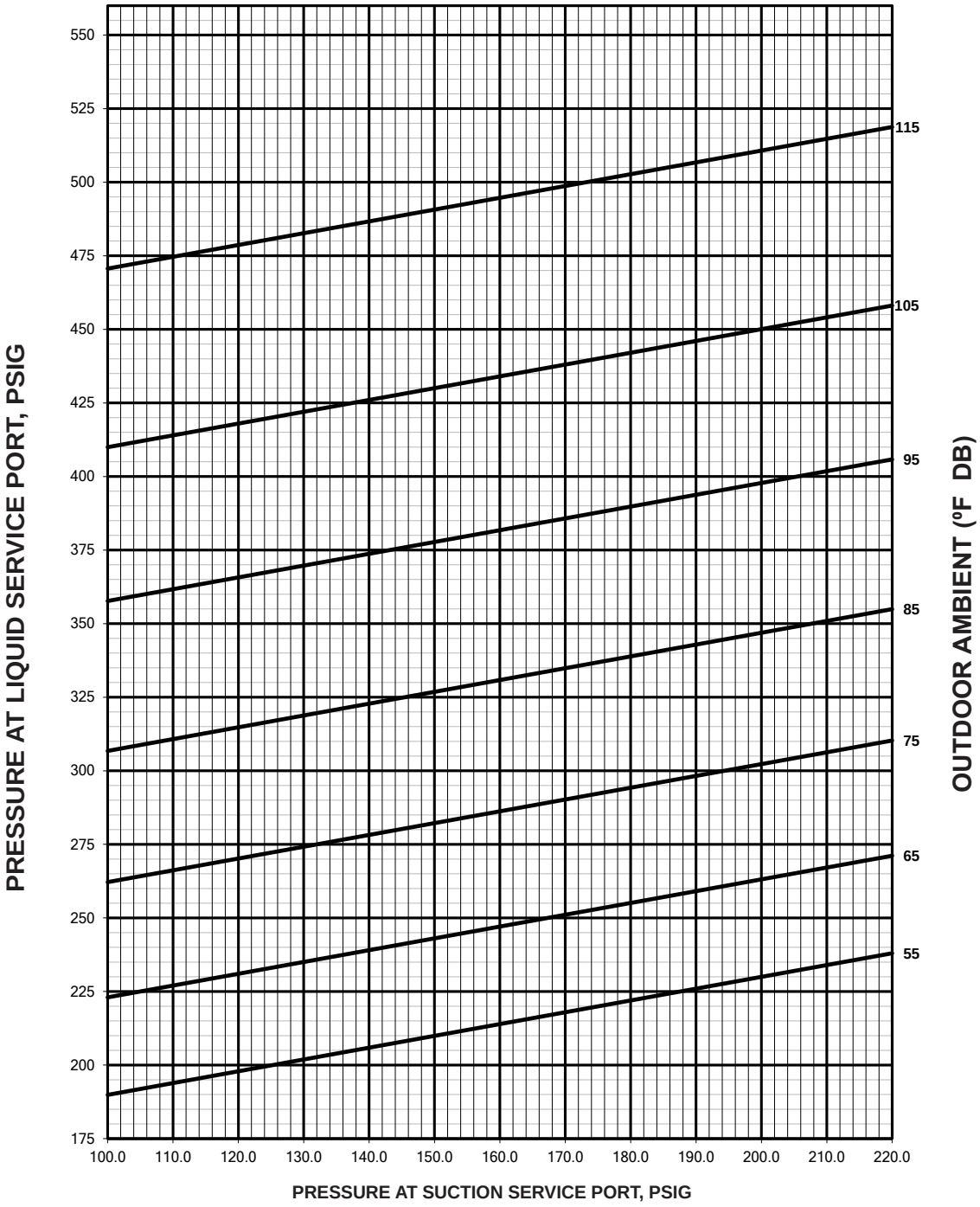
1) MEASURE PRESSURE AT SUCTION AND LIQUID SERVICE PORTS ON UNIT.
2) MEASURE OUTDOOR AMBIENT TO UNIT.
3) PLACE "X" ON CHART CHART WHERE THE SUCTION AND LIQUID PRESSURES INTERSECT.
4) IF "X' IS BELLOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5) IF "X" IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-15-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT060*******C



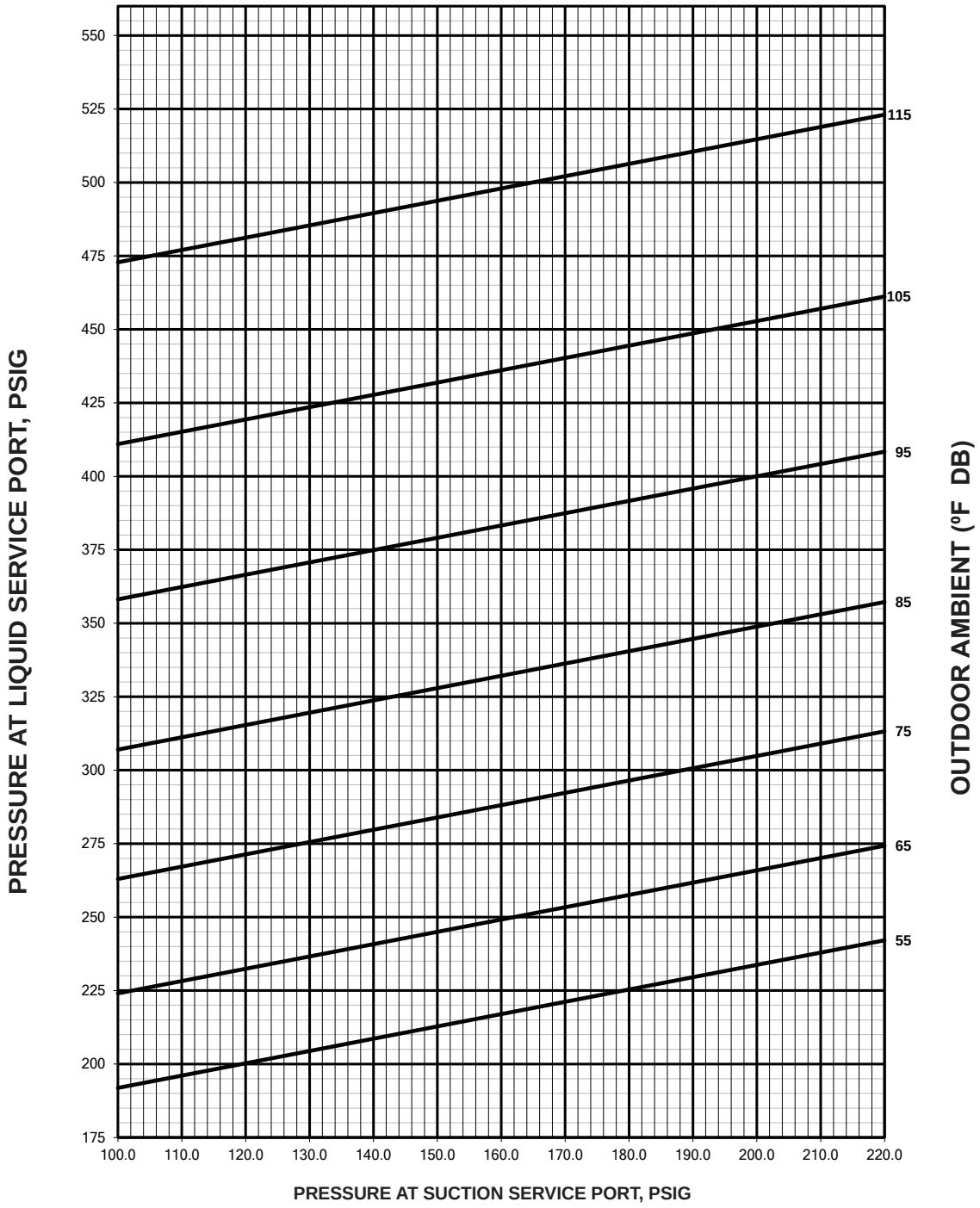
CAUTION: RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

NOTE: DESIGN SUBCOOLING (AT SERVICE PORT) @ 95°F OUTDOOR = 14°F.

INSTRUCTIONS:
1. MEASURE PRESSURE AT SUCTION AND LIQUID SERVICE PORTS ON UNIT.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE "X" ON CHARGE CHART WHERE THE SUCTION AND LIQUID PRESSURES INTERSECT.
4. IF "X" IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF "X" IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT060*******C with Reheat



CAUTION: RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

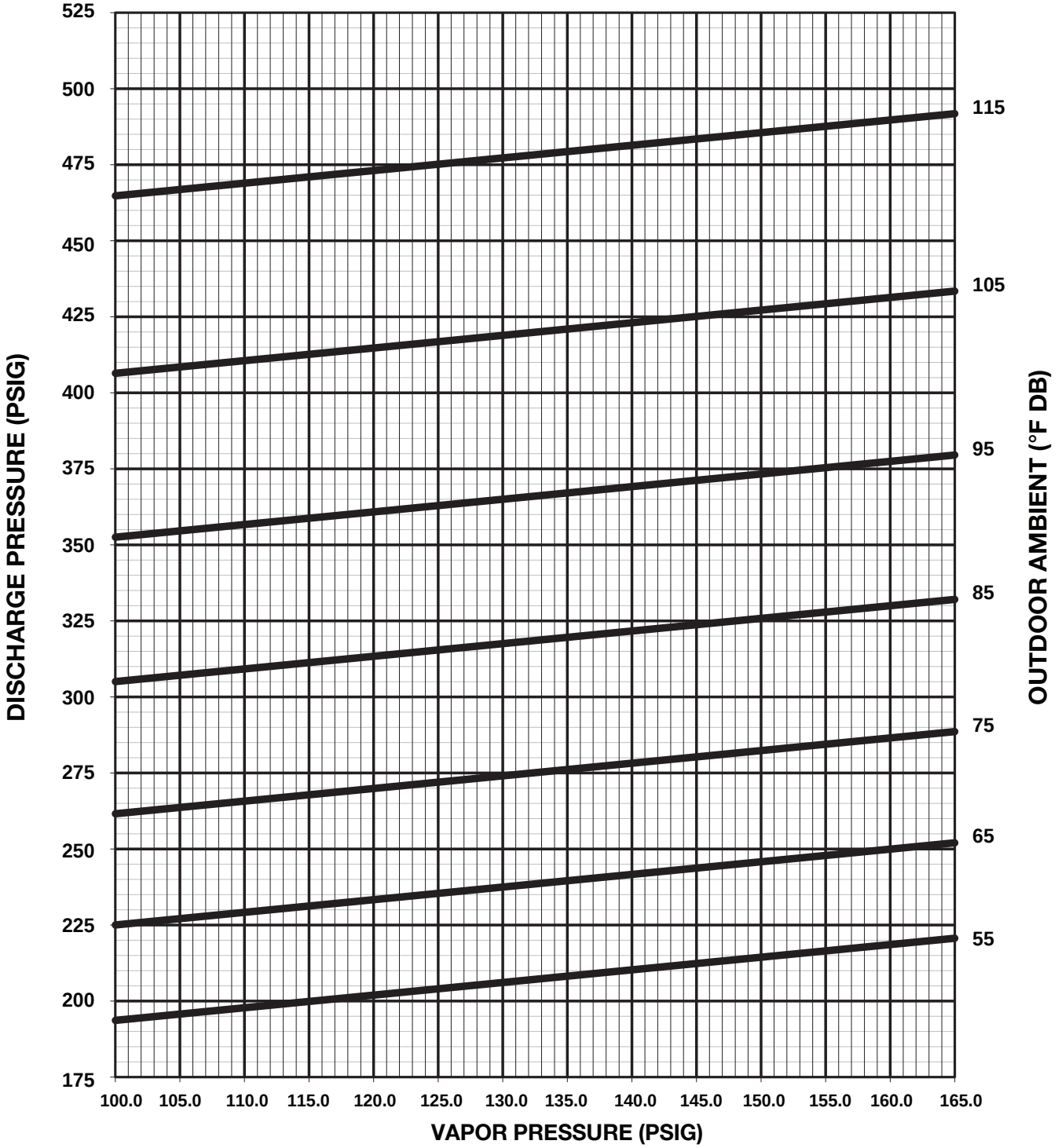
NOTE: DESIGN SUBCOOLING (AT SERVICE PORT) @ 95°F OUTDOOR = 14°F.

INSTRUCTIONS:
1. MEASURE PRESSURE AT SUCTION AND LIQUID SERVICE PORTS ON UNIT.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE "X" ON CHARGE CHART WHERE THE SUCTION AND LIQUID PRESSURES INTERSECT.
4. IF "X" IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF "X" IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT072*****A**
208/230 V 3Φ 460V 3Φ 575V 3Φ
COMP. CODE
9493 9494 9462



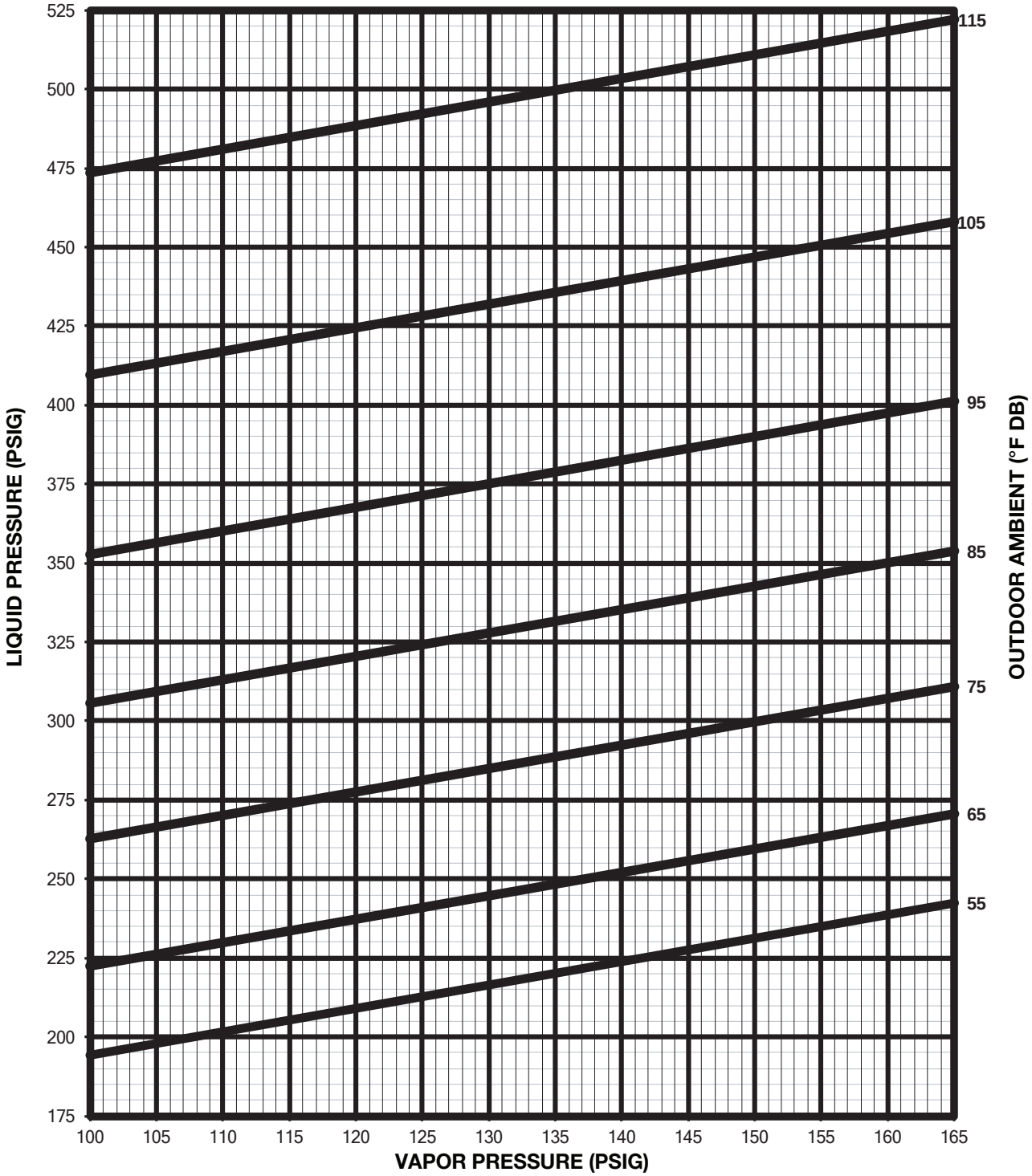
CAUTION 1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND LIQUID.
2.MEASURE OUTDOOR AMBIENT TO UNIT.
3.PLACE X ON CHART WHERE SUCTION AND LIQUID INTERSECT.
4.IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5.IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106696-04-00

Appendix F – Refrigerant Charging Charts (Cont.)

RACCZT072*****A WITH REHEAT**
208/230 V 3Φ 460V 3Φ
COMP. CODE
9493 9494



CAUTION INSTRUCTIONS:

1. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND L IOUID.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE X ON CHART WHERE SUCTION AND LIOUID INTERSECT.
4. IF X IS BELOW OUTDOOR AMBIENT LINE, ADD CHARGE AND REPEAT STEPS 1-3.
5. IF X IS ABOVE OUTDOOR AMBIENT LINE, RECOVER EXCESS CHARGE AND REPEAT STEPS 1-3.

92-106140-07-00

P. APPENDICES

Appendix F – Refrigerant Charging Charts (Cont.)

SYSTEM CHARGE CHART – REFRIGERANT 410 A

PRESSURE REQUIREMENTS – GROSS CHARGE CHECK (REFER CHARGE CHART)

OUTDOOR DRY BULB (°F)	3 -TON	4 -TON	5 -TON	6 -TON
	LIQUID /VAPOR PRESSURE (PSIG)			
115	464 / 156	470 / 153	478 / 150	484 / 147
105	408 / 154	411 / 151	422 / 148	425 / 145
95	358 / 152	361 / 149	366 / 146	371 / 145
85	312 / 150	313 / 148	324 / 143	322 / 140
75	272 / 148	271 / 146	279 / 140	277 / 138
65	238 / 147	237 / 145	245 / 138	239 / 134
55	205 / 145	204 / 142	213 / 133	205 / 126

SUB COOLING REQUIREMENTS – FINAL CHARGE VERIFICATION

OUTDOOR DRY BULB (°F)	3 -TON	4 -TON	5 -TON	6 -TON
	SUBCOOLING (°F)			
115	11	12	11	15
105	11	11	10	15
95	10	11	10	15
85	10	10	9	14
75	9	9	8	13
65	11	10	9	14
55	11	10	11	15

1. This is required to fine-tune unit charge.

2. The Indoor ambient temperature must be between 72 °F and 82 °F dry bulb at the indoor coil.

3. Confirm the indoor air supply is at the rated CFM listed in ***Appendix A.***

4. Allow the system to run long enough for temperatures and pressures to stabilize; at least fifteen minutes.

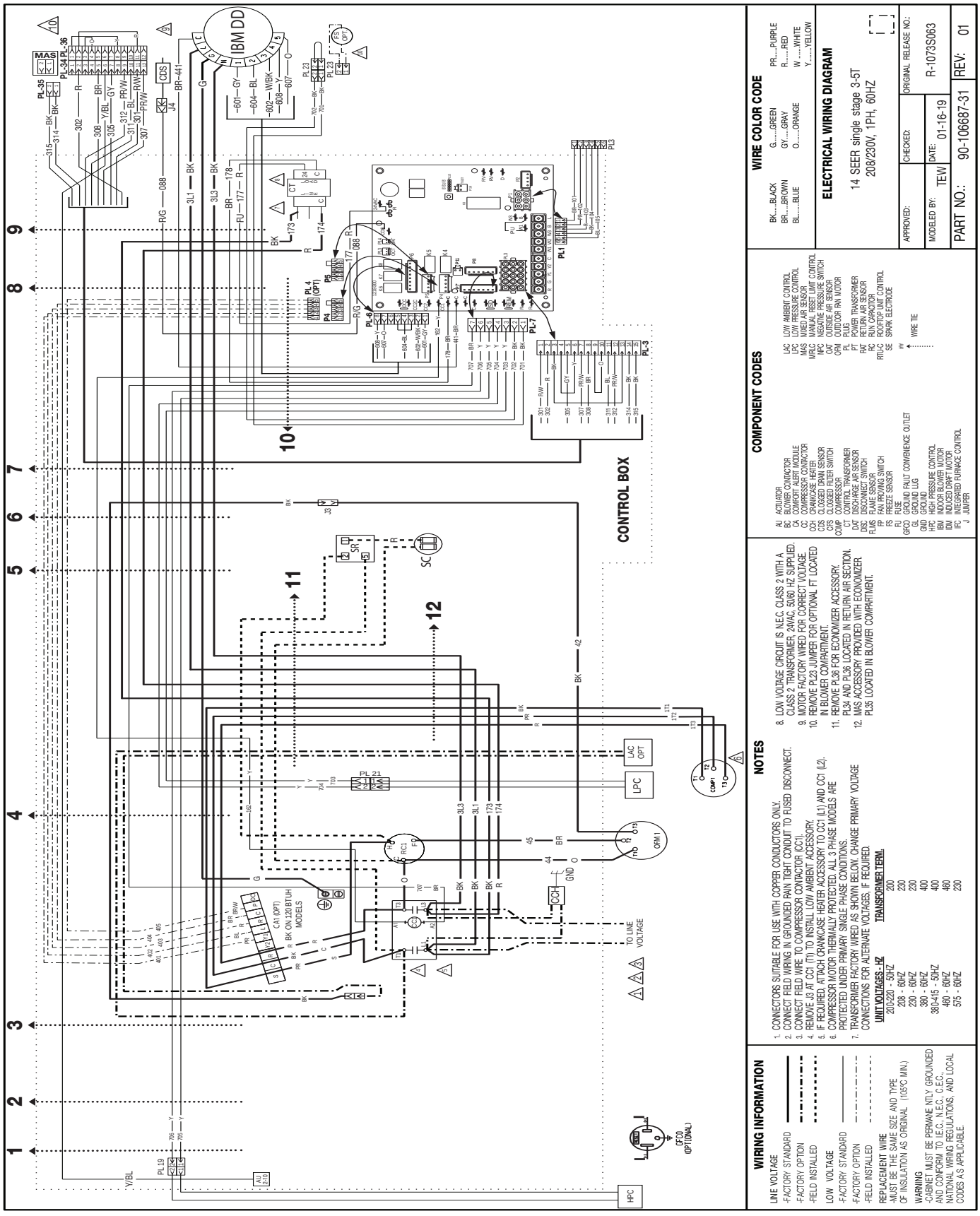
5. Measure liquid pressure and line temperature at the liquid line service port (refer to section J.4.2.1. for the liquid line temperature measurement location). BE SURE TO USE ZERO LOSS FITTINGS WHILE MEASURING PRESSURE; ANY LOSS OF CHARGE MAY IMPACT PERFORMANCE.

6. To find the saturation temperature at the measured pressure, subtract the measured liquid line temperature from the saturation pressure to get the sub-cooling.

7. Check if the Sub-Cooling is within +/- 2.0 °F tolerance.

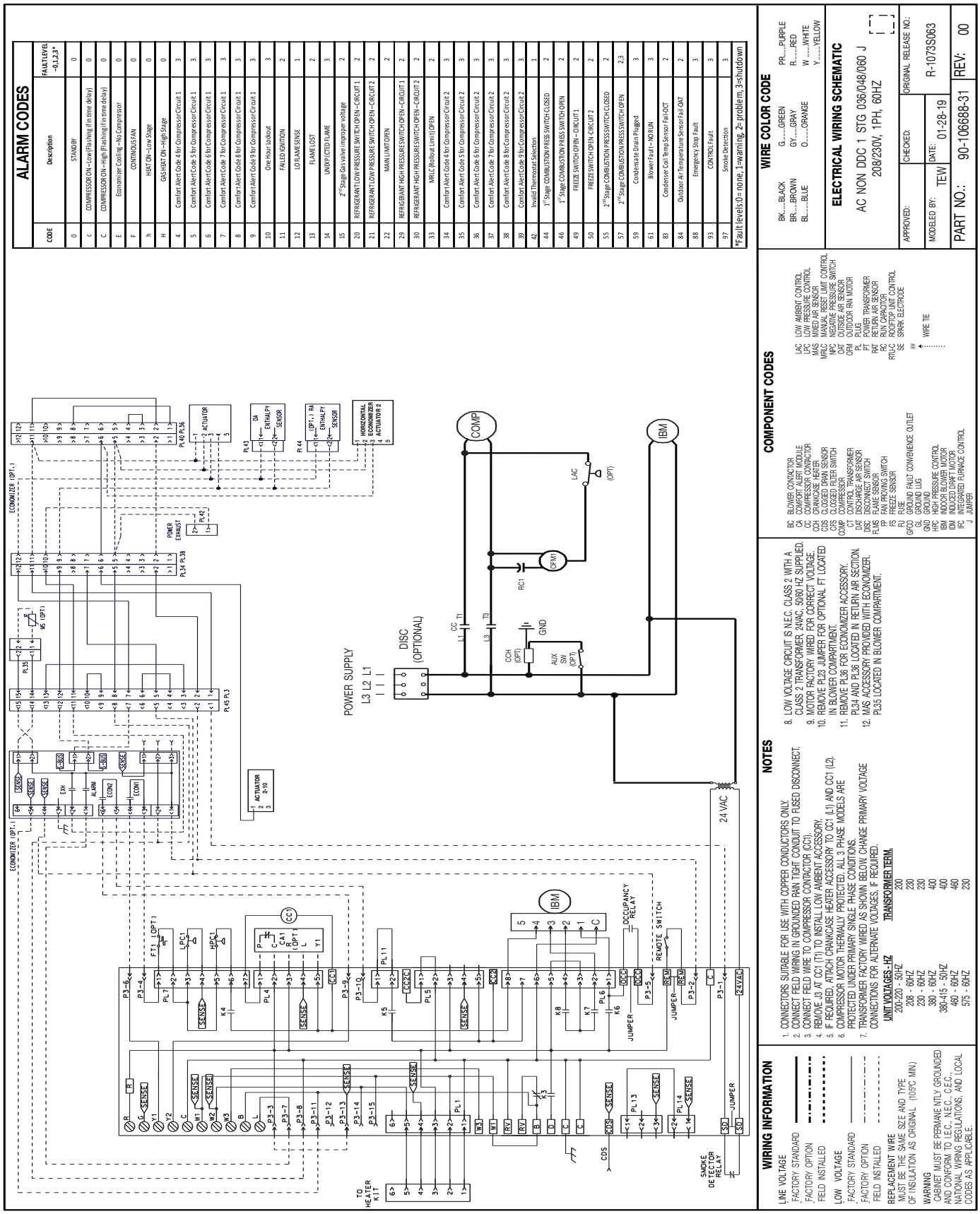
8.If the sub-cooling values are significantly different (> 20 psig) from those listed on the table in ***Appendix F***, there may be an airflow or component issue. Refer to section M. Diagnostics for more information.

Appendix G. Wiring Diagrams & Schematics

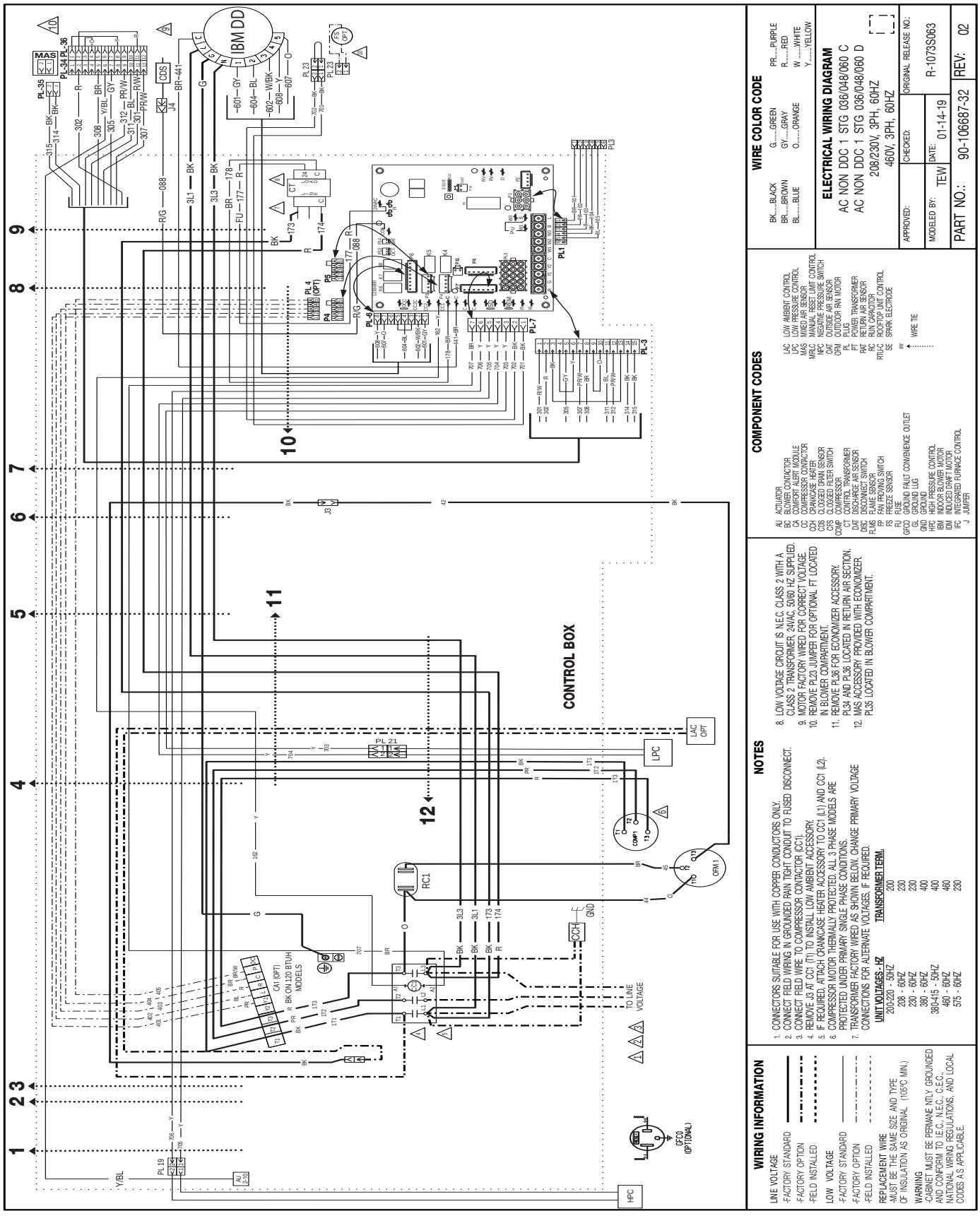


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



WIRE COLOR CODE

BK....BLACK	G.....GREEN	PR....PURPLE	
BR....BROWN	GY....GRAY	R.....RED	
BL.....BLUE	O.....ORANGE	W.....WHITE	
		Y.....YELLOW	

ELECTRICAL WIRING DIAGRAM

AC NON DDC 1 STG 036/048/060 C
AC NON DDC 1 STG 036/048/060 D
208/230V, 3PH, 60HZ
460V, 3PH, 60HZ

APPROVED:	CHECKED:	ORIGINAL RELEASE NO:	
MODELED BY: TEW	DATE: 01-14-19	R-1073S063	
PART NO.: 90-106687-32		REV: 02	

COMPONENT CODES

AU	ACTUATOR
BC	BLOWER CONTACTOR
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CDS	CLOGGED DRAIN SENSOR
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DSS	DISCONNECT SWITCH
FLMS	FLAME SENSOR
FP	FAN PROVING SWITCH
FS	FREEZE SENSOR
FU	FUSE
GFCO	GROUND FAULT CONVENIENCE OUTLET
GND	GROUND LUG
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR
IDM	INDUCED DRAFT MOTOR
IFC	INTEGRATED FURNACE CONTROL
J	JUMPER
LAC	LOW AMBIENT CONTROL
LPC	LOW PRESSURE CONTROL
MAS	MIXED AIR SENSOR
MRLC	MANUAL RESET LIMIT CONTROL
NPC	NEGATIVE PRESSURE SWITCH
OAT	OUTSIDE AIR SENSOR
ODM	OUTDOOR FAN MOTOR
PL	PLUG
PT	POWER TRANSFORMER
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTUC	ROOFTOP UNIT CONTROL
SE	SPARK ELECTRODE
##	WIRE TIE

NOTES

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. CONNECT FIELD WIRING IN GROUNDED PAIN TIGHT CONDUIT TO FUSED DISCONNECT.
3. CONNECT FIELD WIRE TO COMPRESSOR CONTACTOR (CC1).
4. REMOVE J3 AT CC1 (T1) TO INSTALL LOW AMBIENT ACCESSORY.
5. IF REQUIRED, ATTACH CRANKCASE HEATER ACCESSORY TO CC1 (L1) AND CC1 (L2).
6. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
7. TRANSFORMER FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTIONS FOR ALTERNATE VOLTAGES, IF REQUIRED.

UNIT VOLTAGES - HZ	TRANSFORMER TERM.
200/220 - 50HZ	200
208 - 60HZ	230
230 - 60HZ	230
380 - 60HZ	400
380-415 - 50HZ	400
460 - 60HZ	460
575 - 60HZ	230

8. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24VAC, 50/60 HZ SUPPLIED.
9. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE
10. REMOVE PL23 JUMPER FOR OPTIONAL FT LOCATED IN BLOWER COMPARTMENT.
11. REMOVE PL36 FOR ECONOMIZER ACCESSORY. PL34 AND PL35 LOCATED IN RETURN AIR SECTION.
12. MAS ACCESSORY PROVIDED WITH ECONOMIZER. PL35 LOCATED IN BLOWER COMPARTMENT.

WIRING INFORMATION

LINE VOLTAGE
-FACTORY STANDARD ——————
-FACTORY OPTION -·-·-·-·-·-
-FIELD INSTALLED ··········

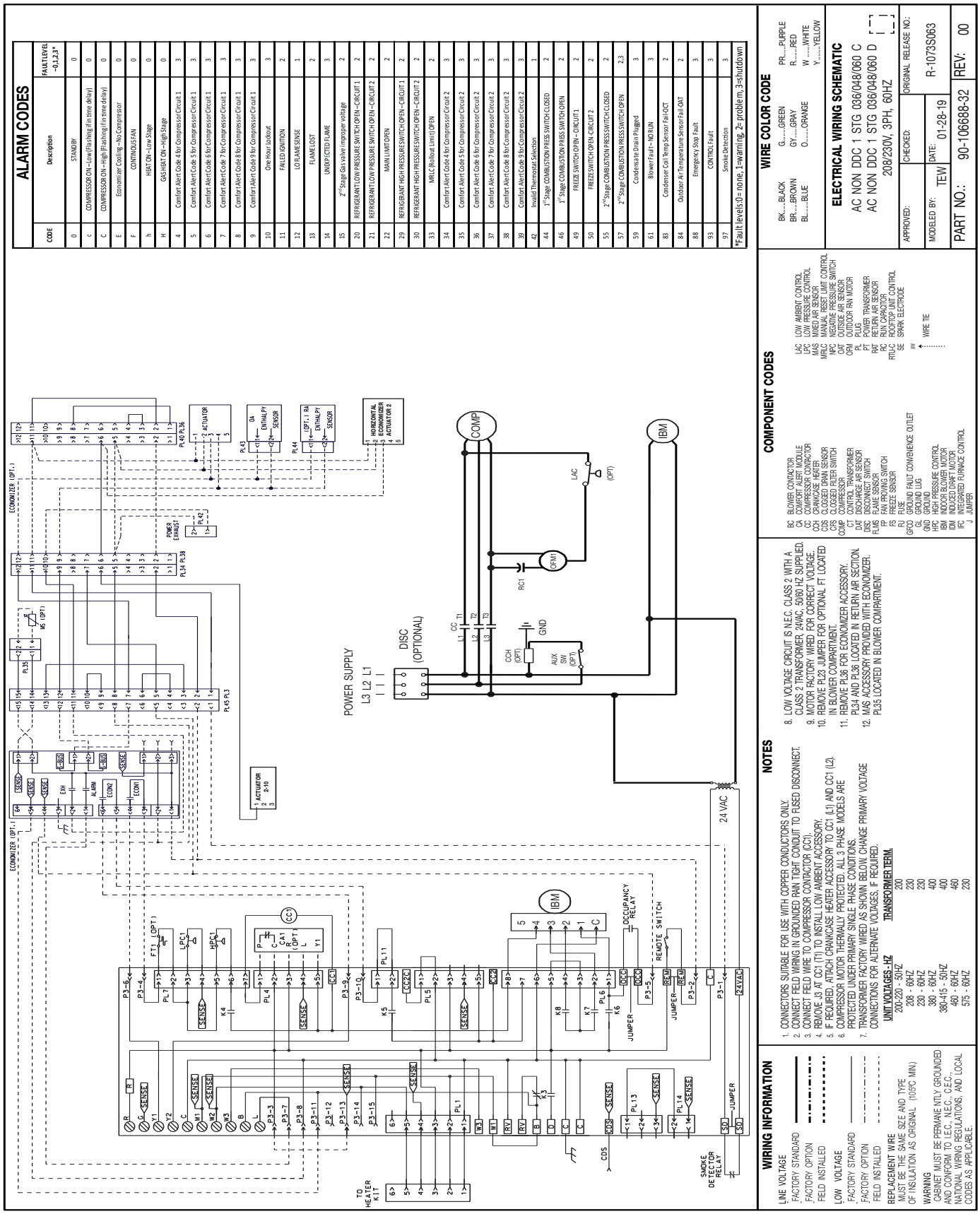
LOW VOLTAGE
-FACTORY STANDARD ——————
-FACTORY OPTION -·-·-·-·-·-
-FIELD INSTALLED ··········

REPLACEMENT WIRE
-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105°C MIN.)

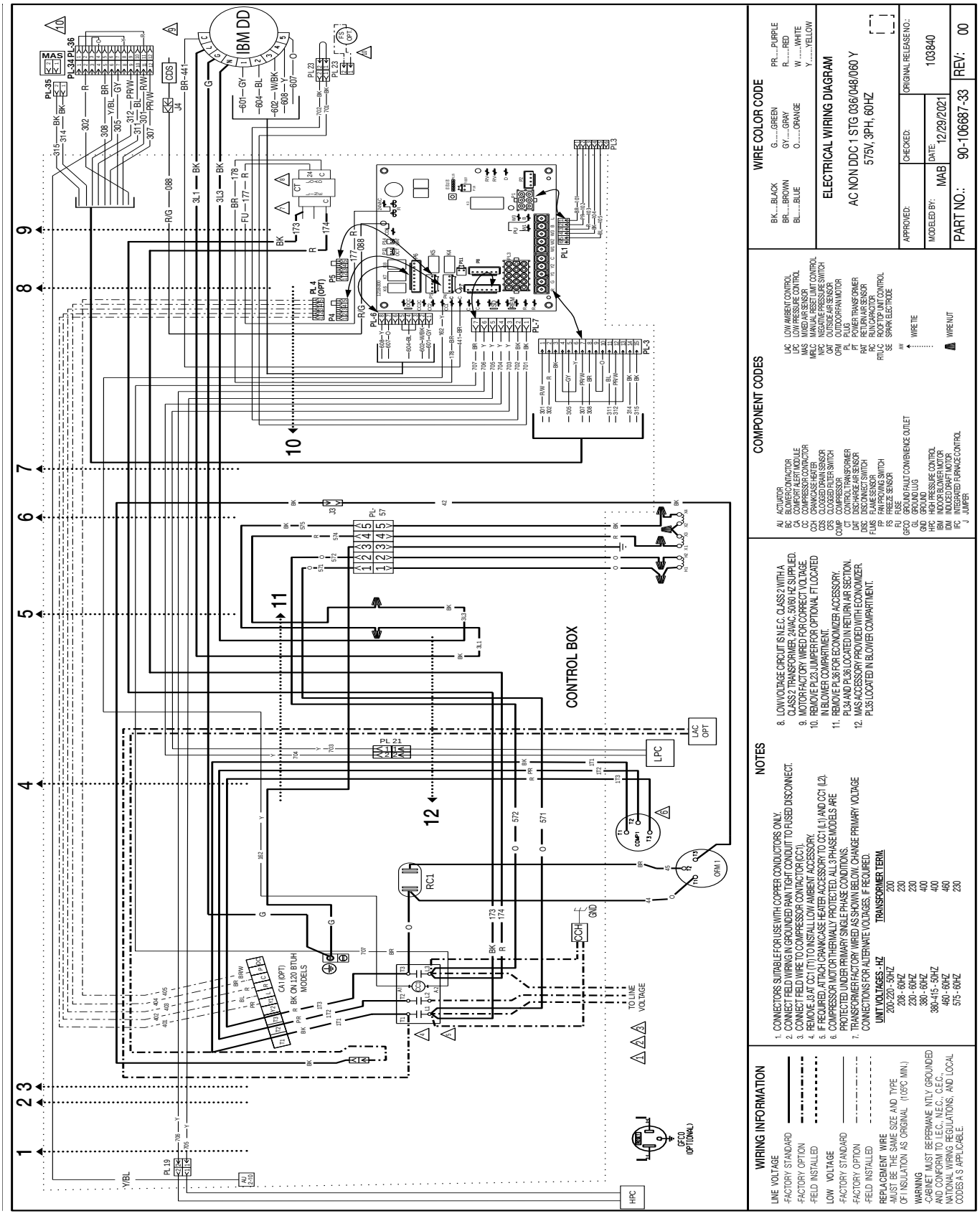
WARNING
-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., NATIONAL WIRING REGULATIONS, AND LOCAL CODES AS APPLICABLE.

P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)

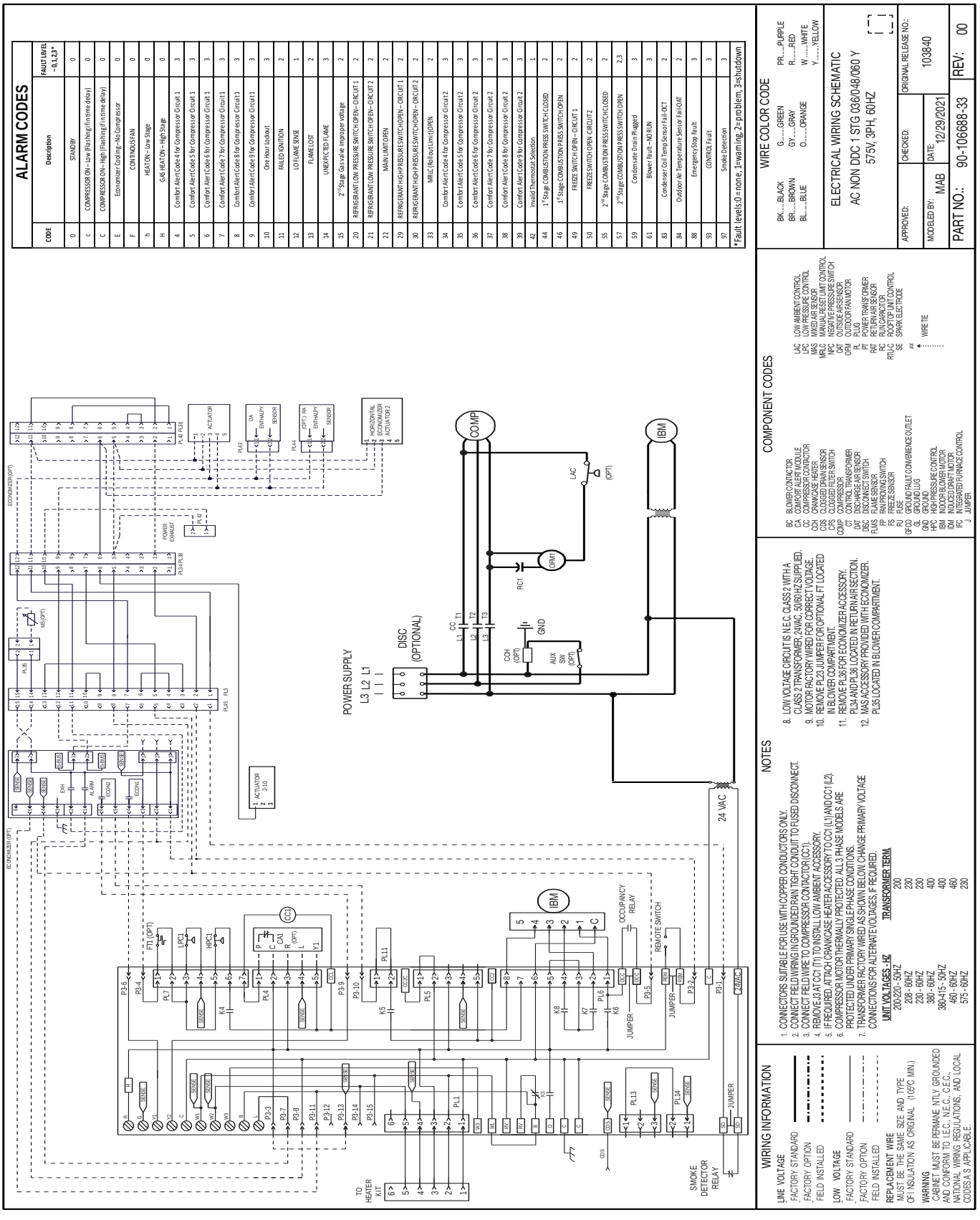


Appendix G. Wiring Diagrams & Schematics (Cont.)

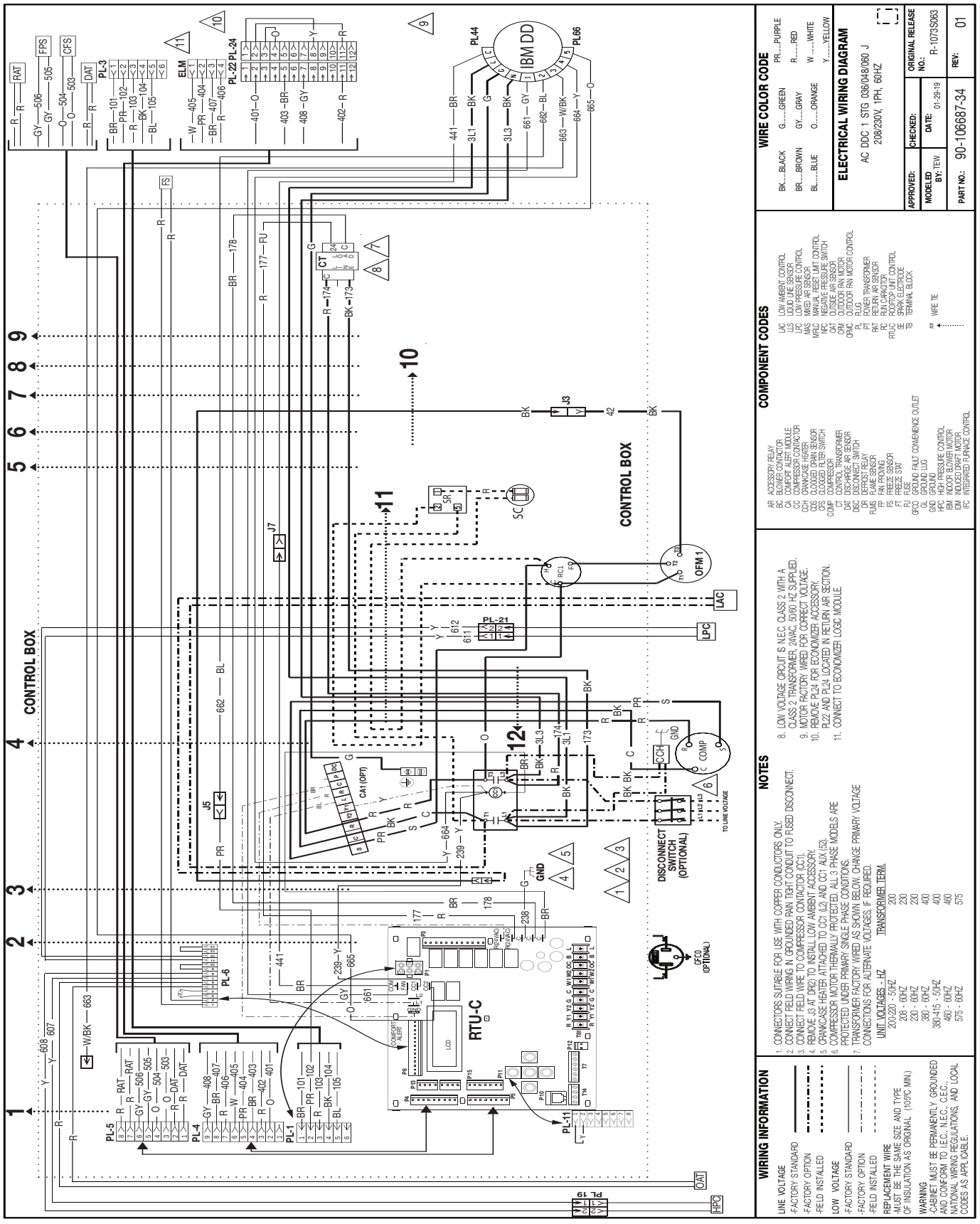


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)

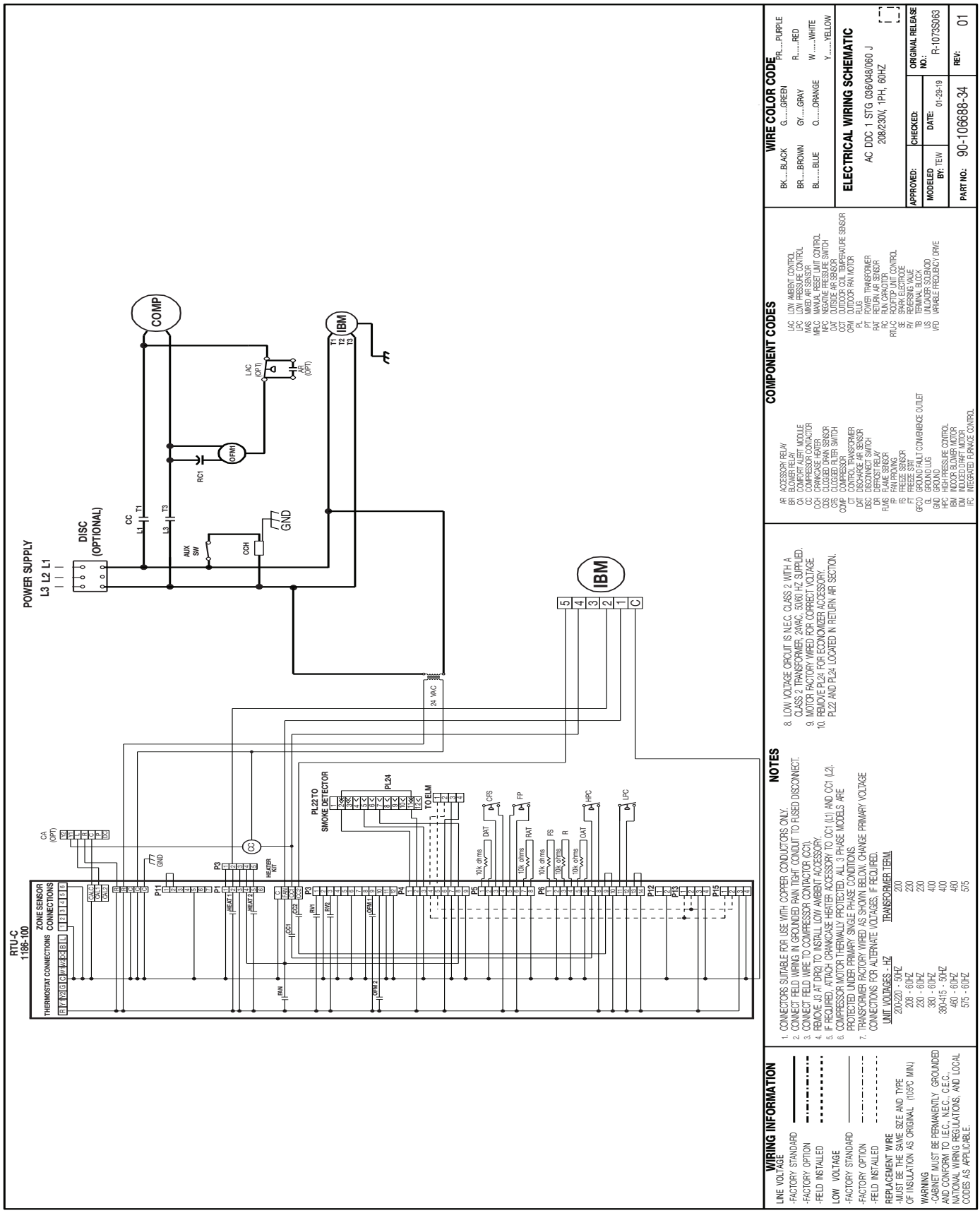


Appendix G. Wiring Diagrams & Schematics (Cont.)

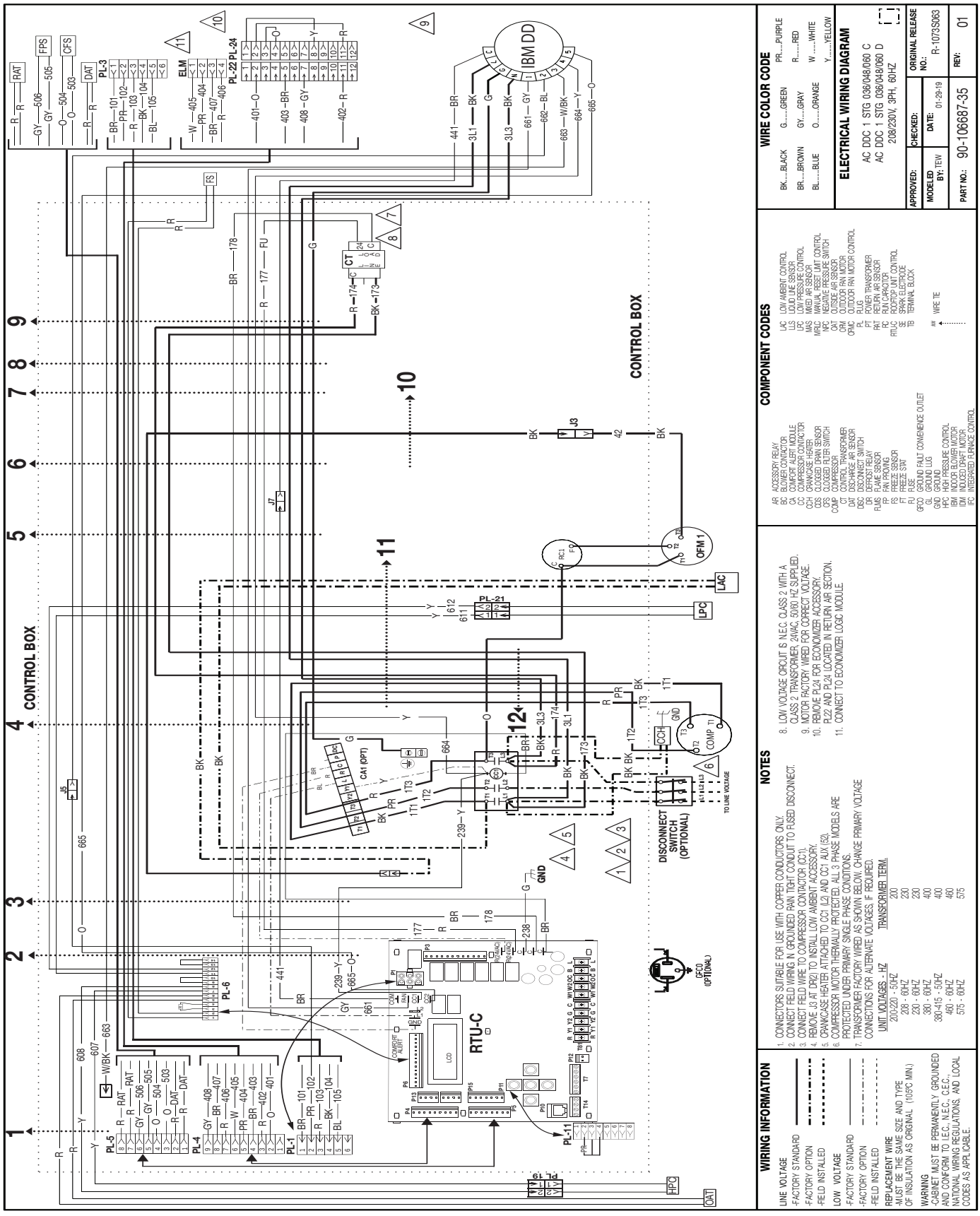


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)

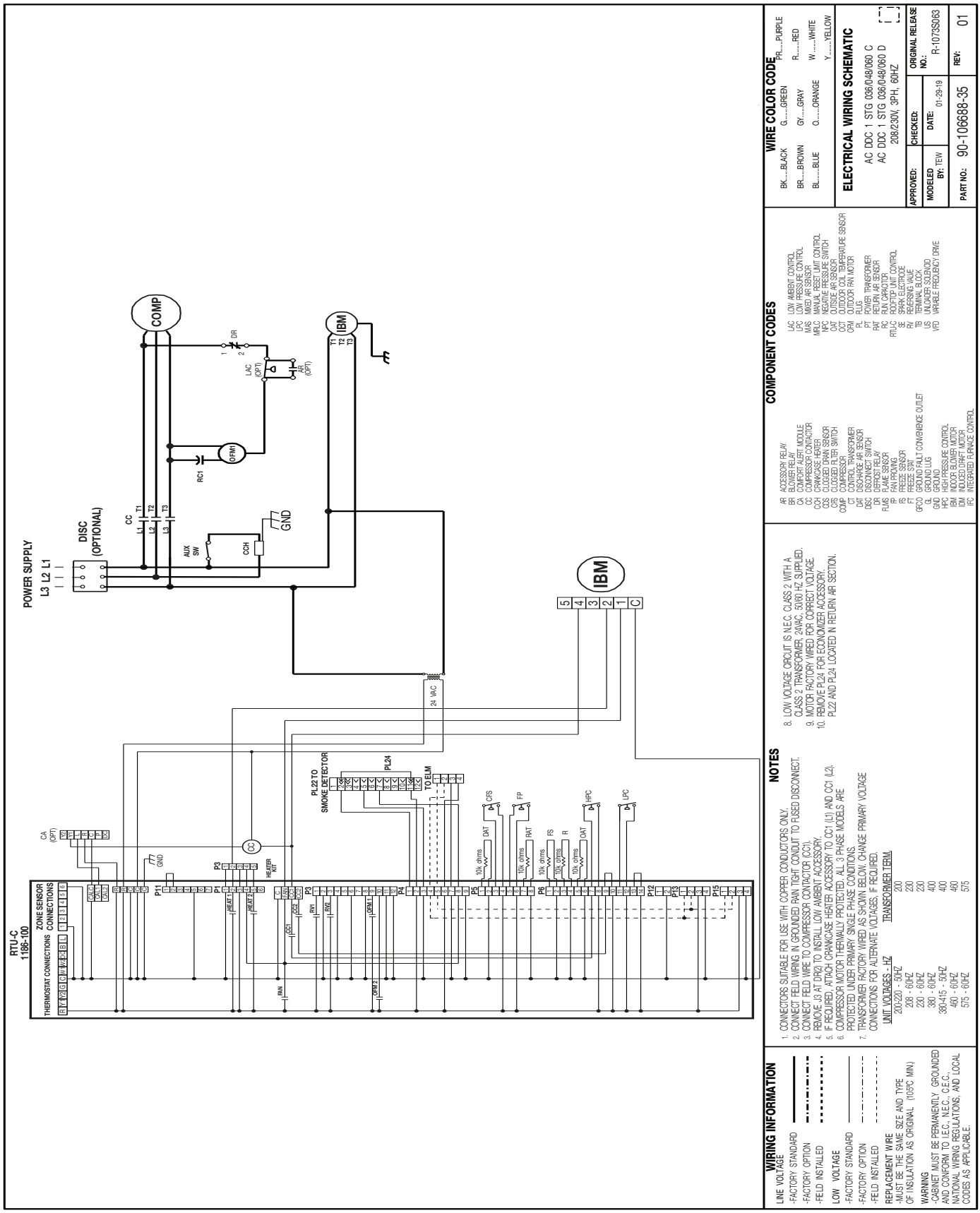


Appendix G. Wiring Diagrams & Schematics (Cont.)



P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)



WIRING INFORMATION

LINE VOLTAGE
-FACTORY STANDARD
-FACTORY OPTION
-FELD INSTALLED

LOW VOLTAGE
-FACTORY STANDARD
-FACTORY OPTION
-FELD INSTALLED

REPLACEMENT WIRE
-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105°C MIN.)

WARNING
-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., O.E.C., NATIONAL WIRING REGULATIONS, AND LOCAL CODES AS APPLICABLE.

NOTES

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. CONNECT FELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
3. CONNECT FELD WIRE TO COMPRESSOR CONTACTOR (CC1).
4. REMOVE J3 AT DR(2) TO INSTALL LOW AMBIENT ACCESSORY.
5. IF REQUIRED, ATTACH CRANKCASE HEATER ACCESSORY TO CC1 (L1) AND CC1 (L2).
6. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
7. TRANSFORMER FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTIONS FOR ALTERNATE VOLTAGES, IF REQUIRED.

UNIT VOLTAGES - HZ	TRANSFORMER TERM.
200/220 - 50HZ	200
208 - 60HZ	230
230 - 60HZ	230
380/415 - 50HZ	400
460 - 60HZ	460
575 - 60HZ	575

8. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24VAC, 50/60 HZ, SUPPLIED.
9. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
10. REMOVE PL24 FOR ECONOMIZER ACCESSORY. PL22 AND PL24 LOCATED IN RETURN AIR SECTION.

COMPONENT CODES

AR	ACCESSORY RELAY
BR	BLOWER RELAY
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CDS	CLOGGED DRAIN SENSOR
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DISC	DISCONNECT SWITCH
DR	DEFROST RELAY
FLMS	FLAME SENSOR
FP	FAN PROVING
FS	FREEZE STAT
GFCI	GROUND FAULT CONVENIENCE OUTLET
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR
IDM	INDUCED DRAFT MOTOR
IFC	INTEGRATED FURNACE CONTROL
LAC	LOW AMBIENT CONTROL
LPC	LOW PRESSURE CONTROL
MAS	MIXED AIR SENSOR
MRLC	MANUAL RESET LIMIT CONTROL
NPC	NEGATIVE PRESSURE SWITCH
OAT	OUTSIDE AIR SENSOR
OCT	OUTDOOR COIL TEMPERATURE SENSOR
OFM	OUTDOOR FAN MOTOR
PL	PLUG
PT	POWER TRANSFORMER
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
SE	SPARK ELECTRODE
TB	TERMINAL BLOCK
UI	UNLOADER SOLENOID
VFD	VARIABLE FREQUENCY DRIVE

WIRE COLOR CODE

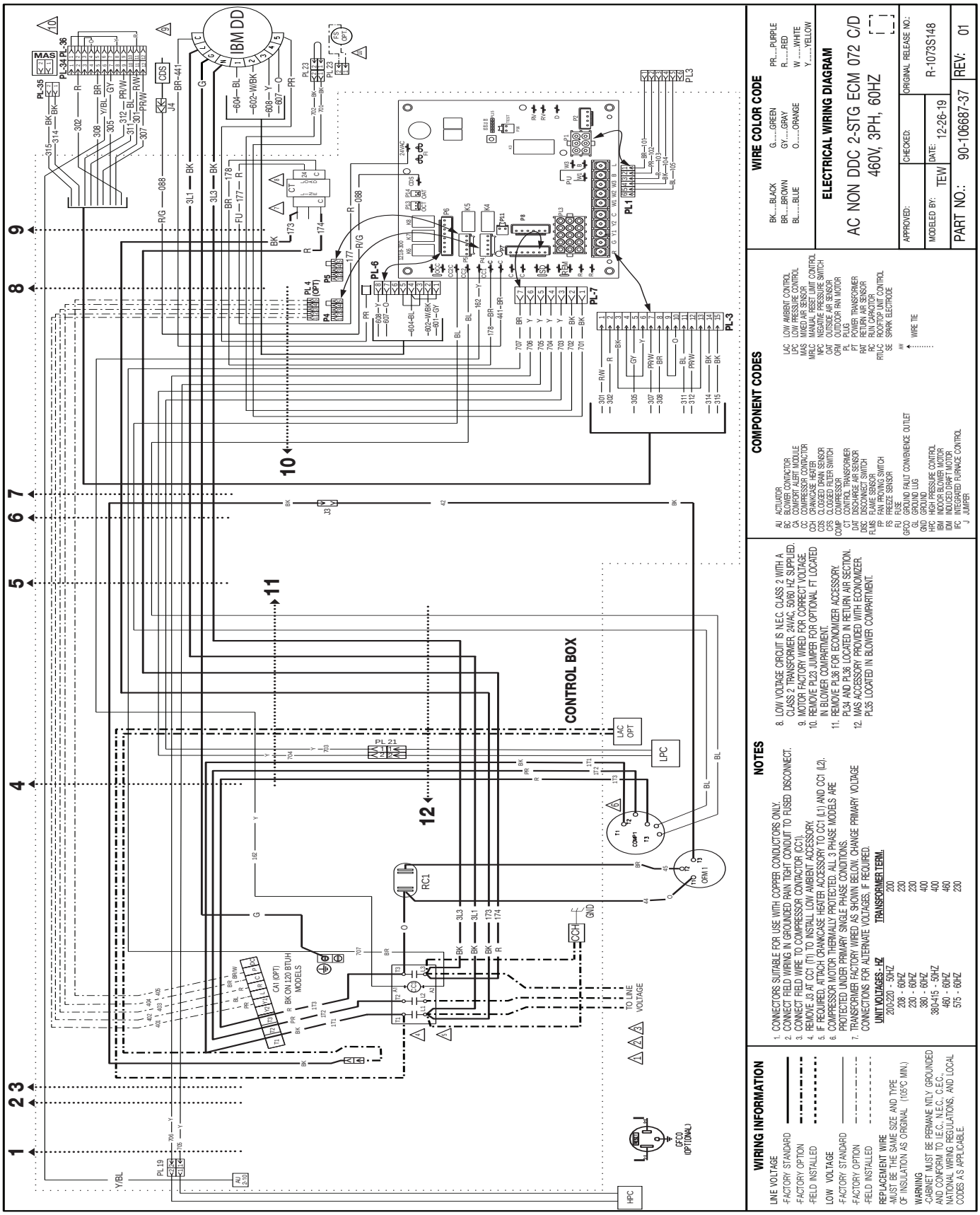
BK....BLACK	G.....GREEN	PR....PURPLE	
BR....BROWN	GY.....GRAY	R.....RED	
BL.....BLUE	O.....ORANGE	W .....WHITE	
		Y.....YELLOW	

ELECTRICAL WIRING SCHEMATIC

AC DDC 1 STG 036/048/060 C
AC DDC 1 STG 036/048/060 D
208/230V, 3PH, 60HZ

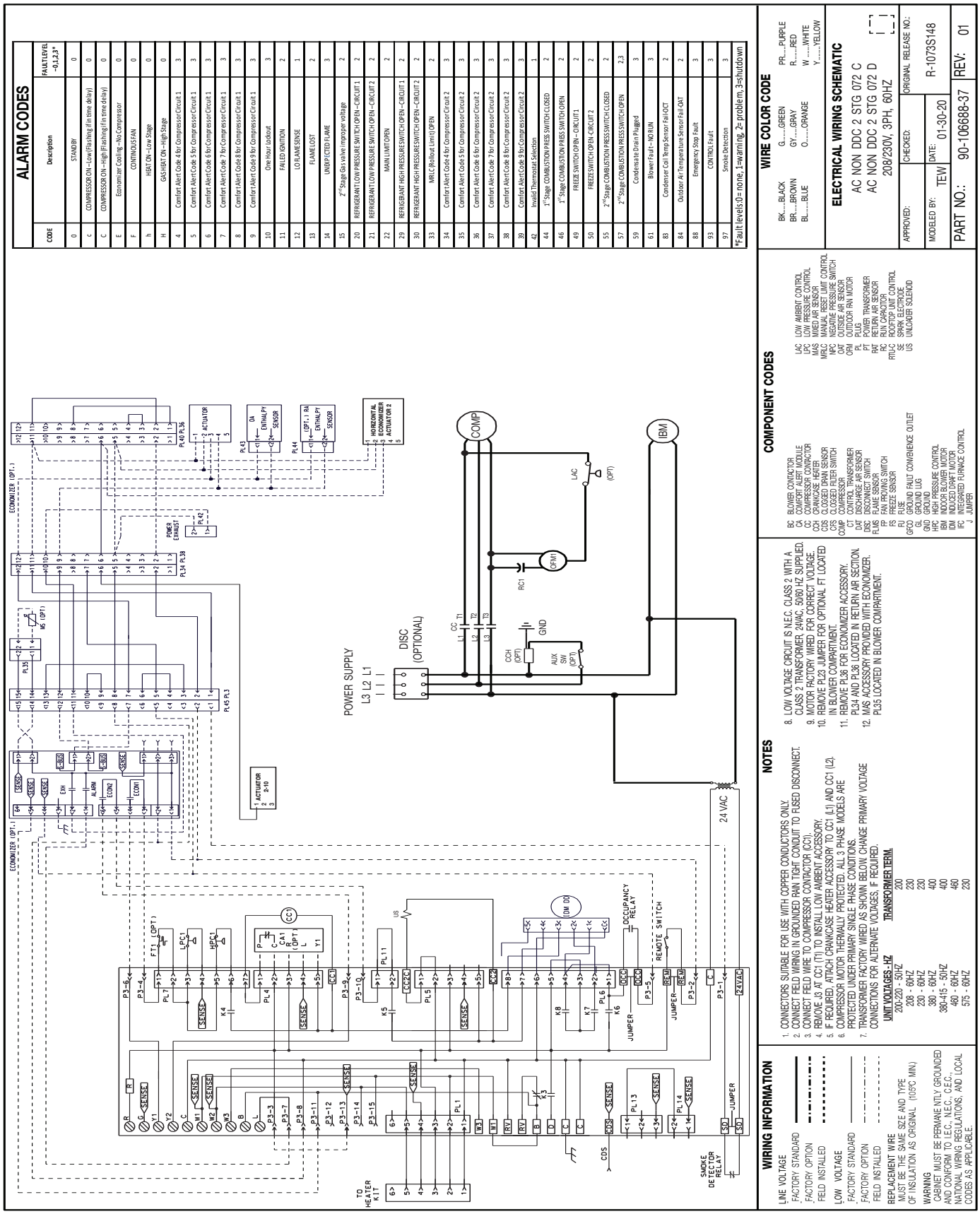
APPROVED:	CHECKED:	ORIGINAL RELEASE NO.:
MODELED BY: TEW	DATE: 01-29-19	R-1072S063
PART NO.: 90-106688-35		REV: 01

Appendix G. Wiring Diagrams & Schematics (Cont.)

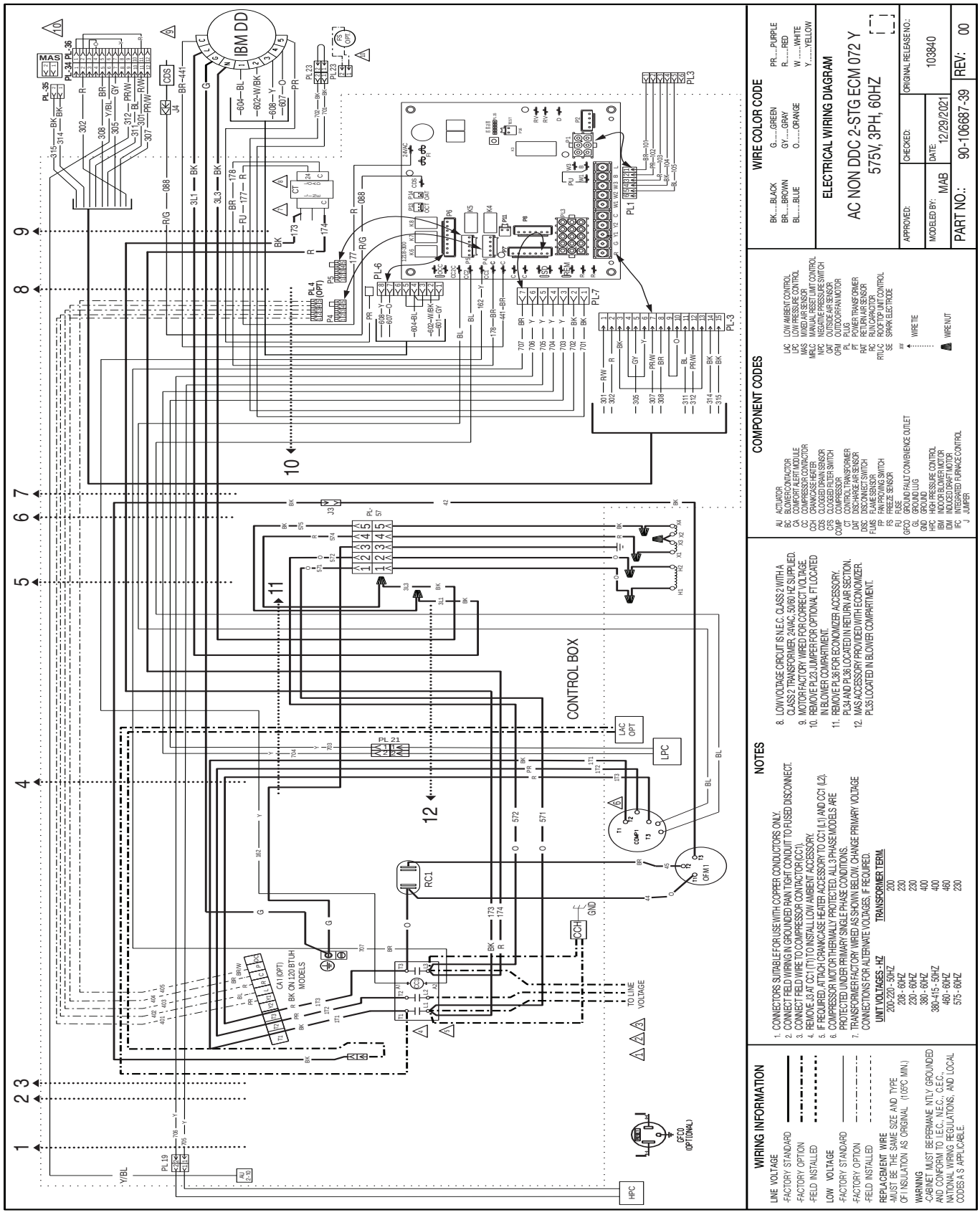


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)

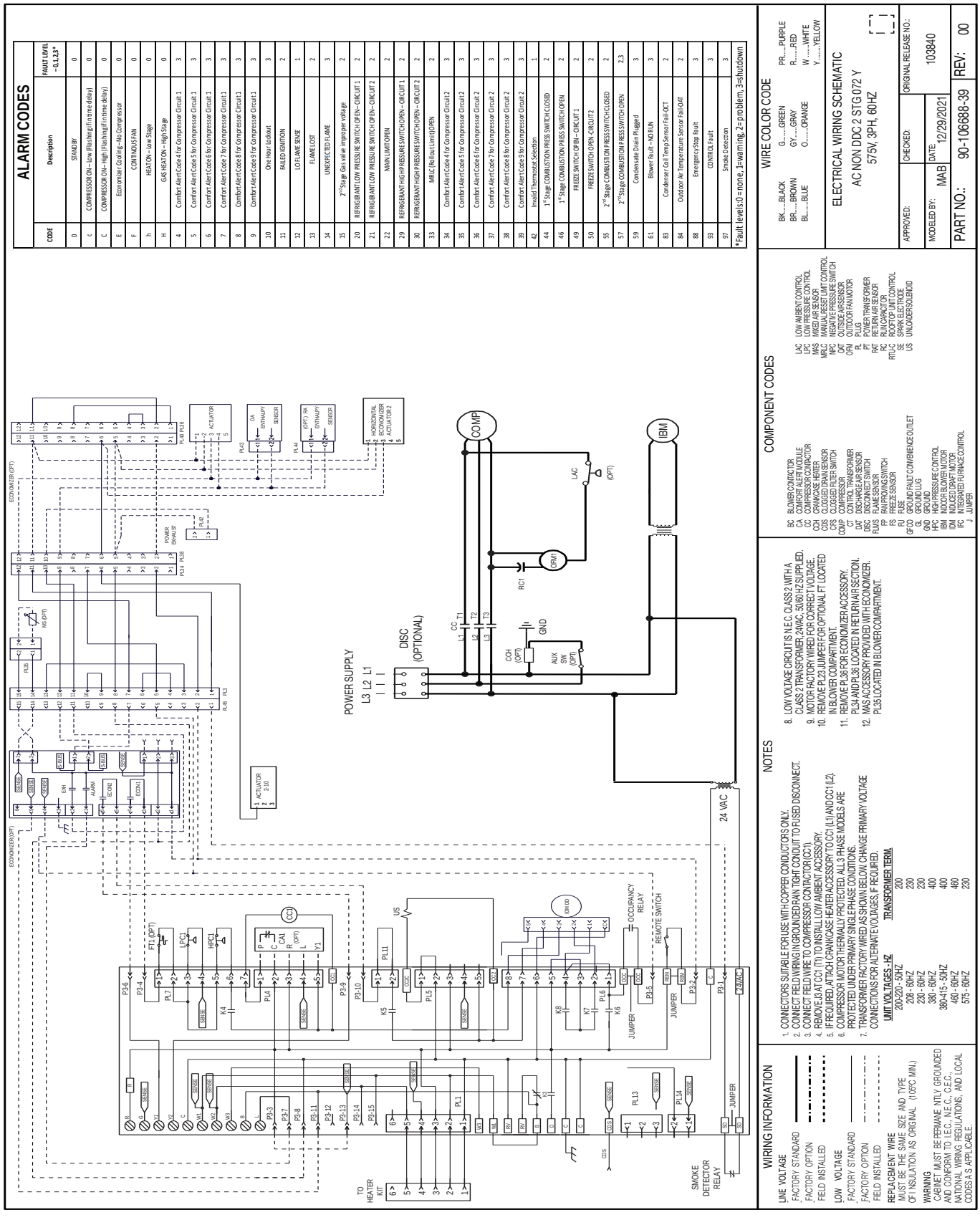


Appendix G. Wiring Diagrams & Schematics (Cont.)

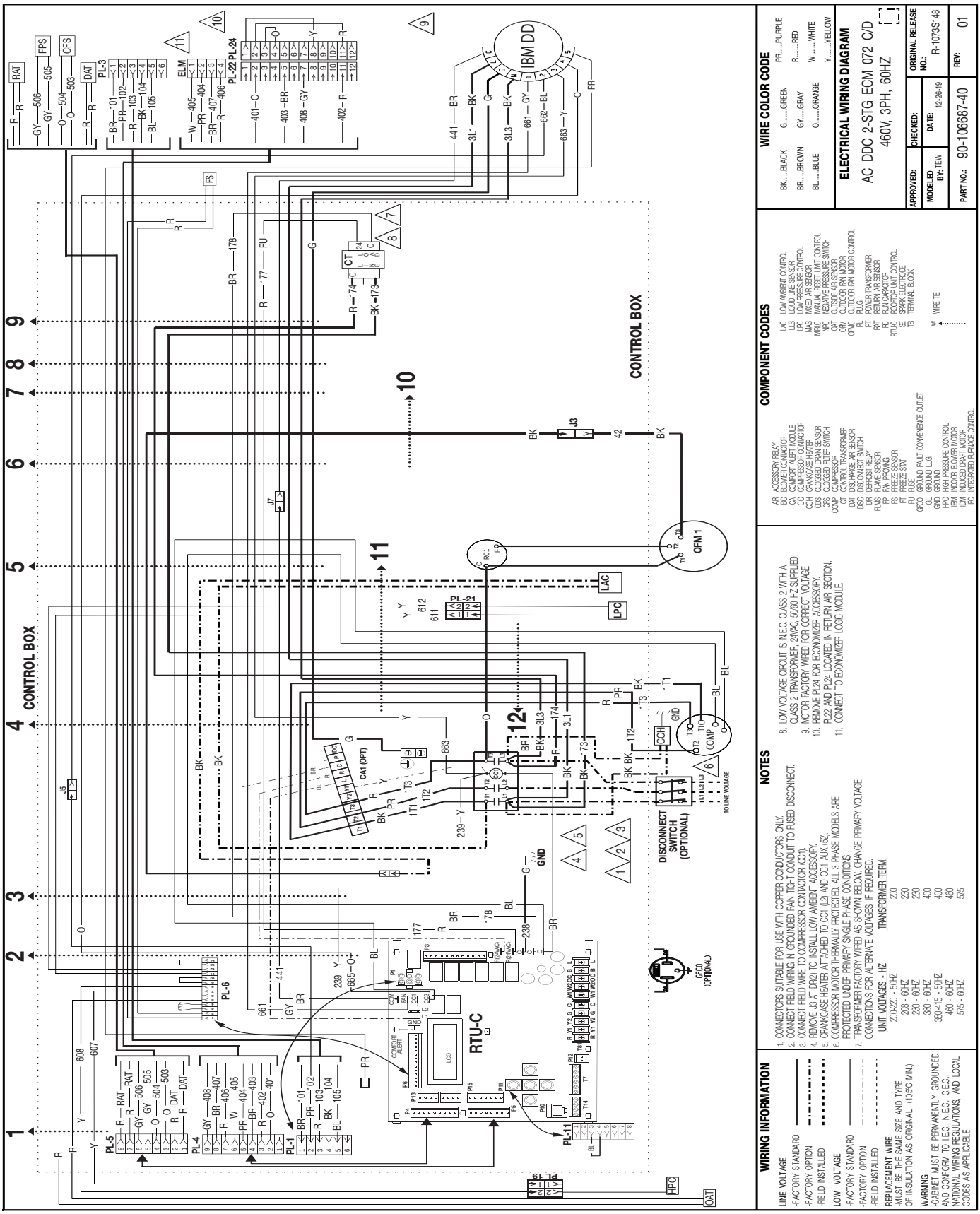


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)

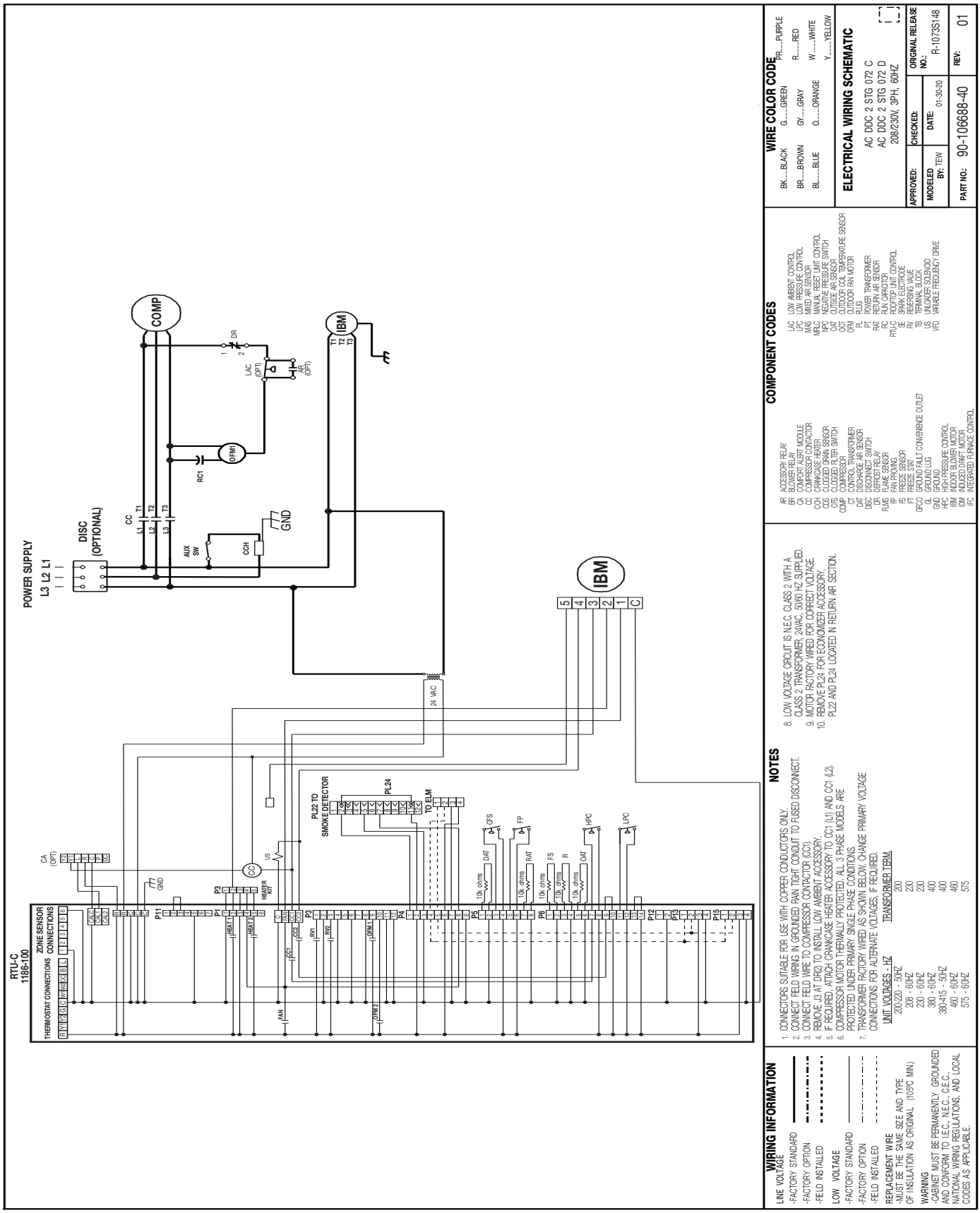


Appendix G. Wiring Diagrams & Schematics (Cont.)

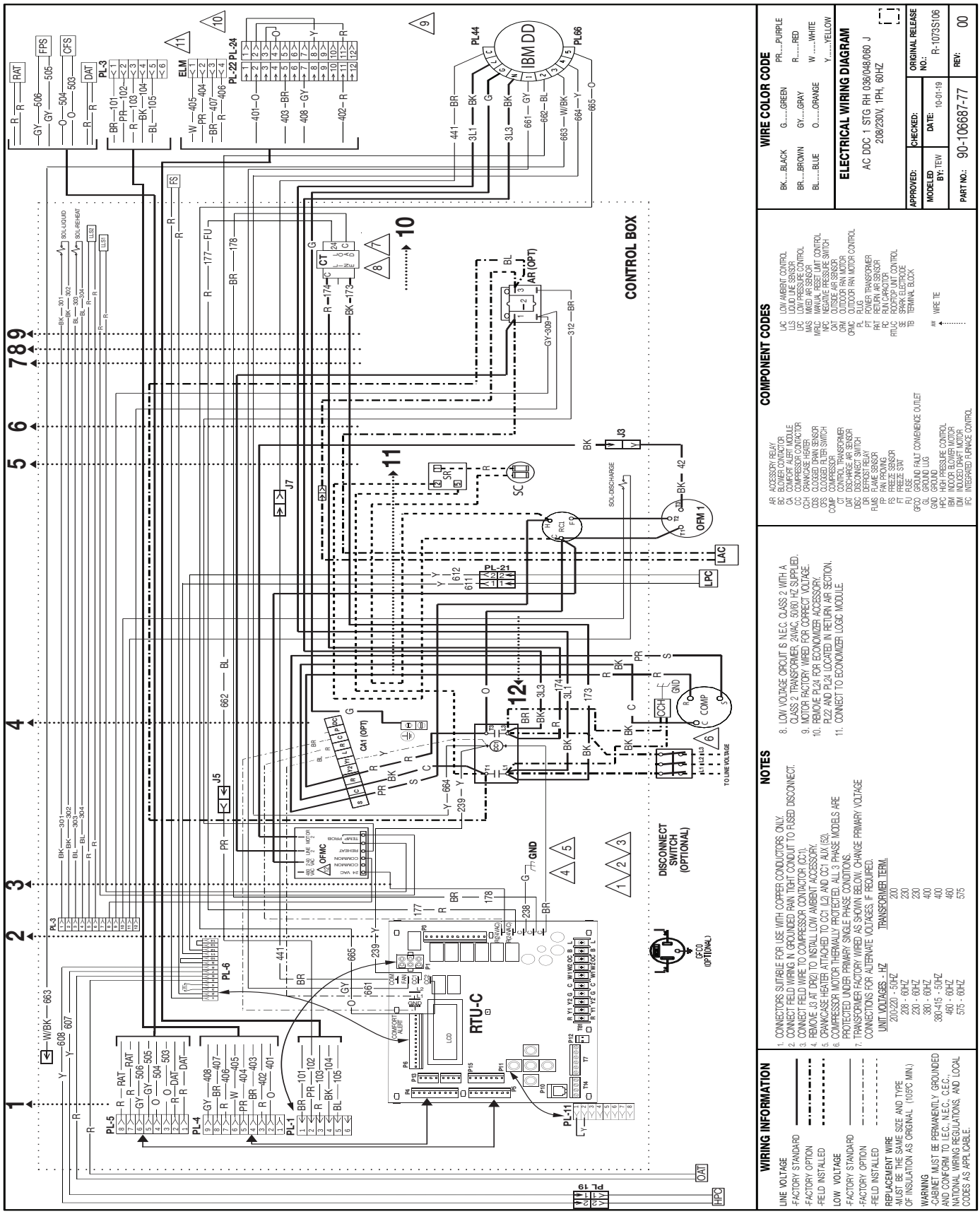


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



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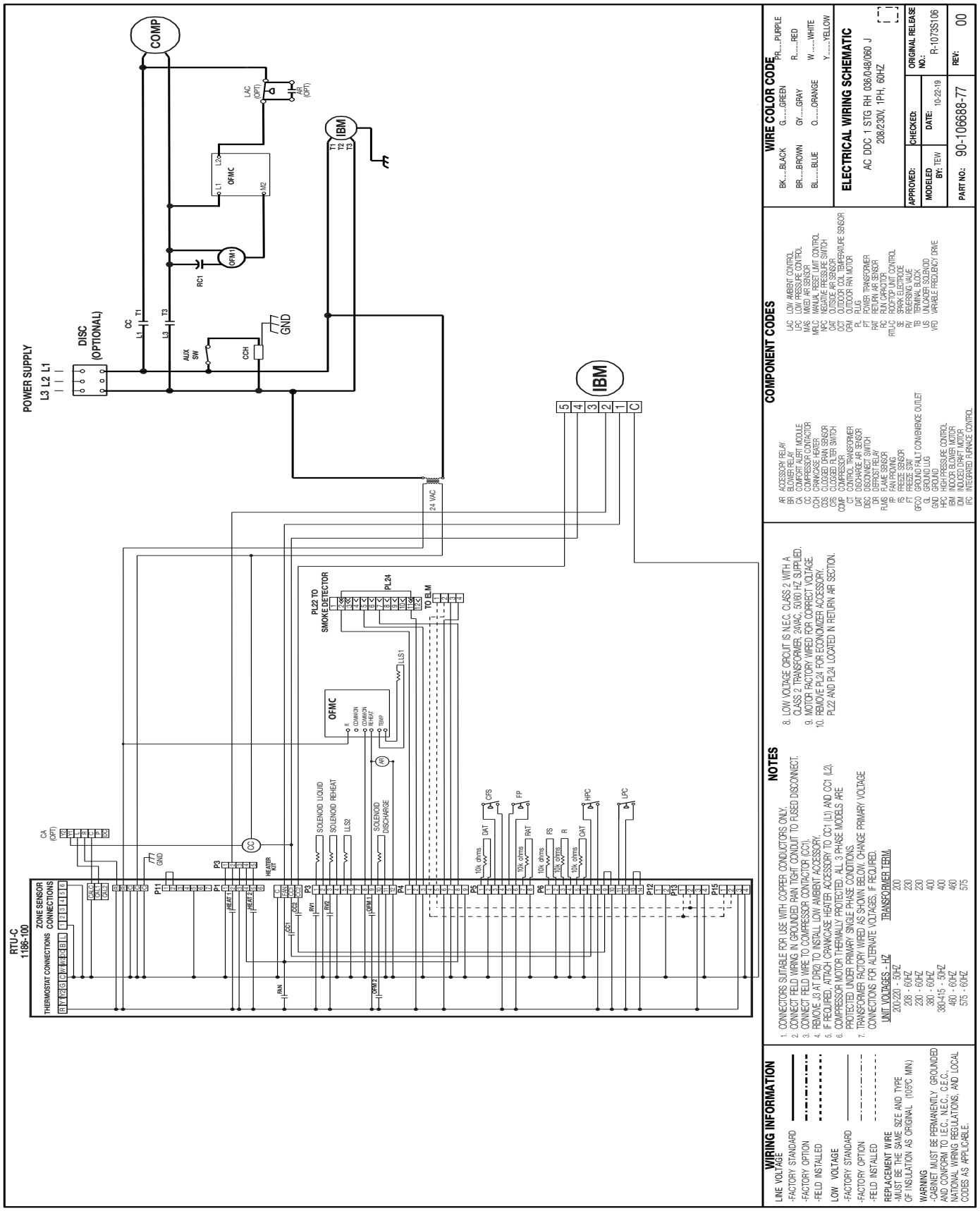
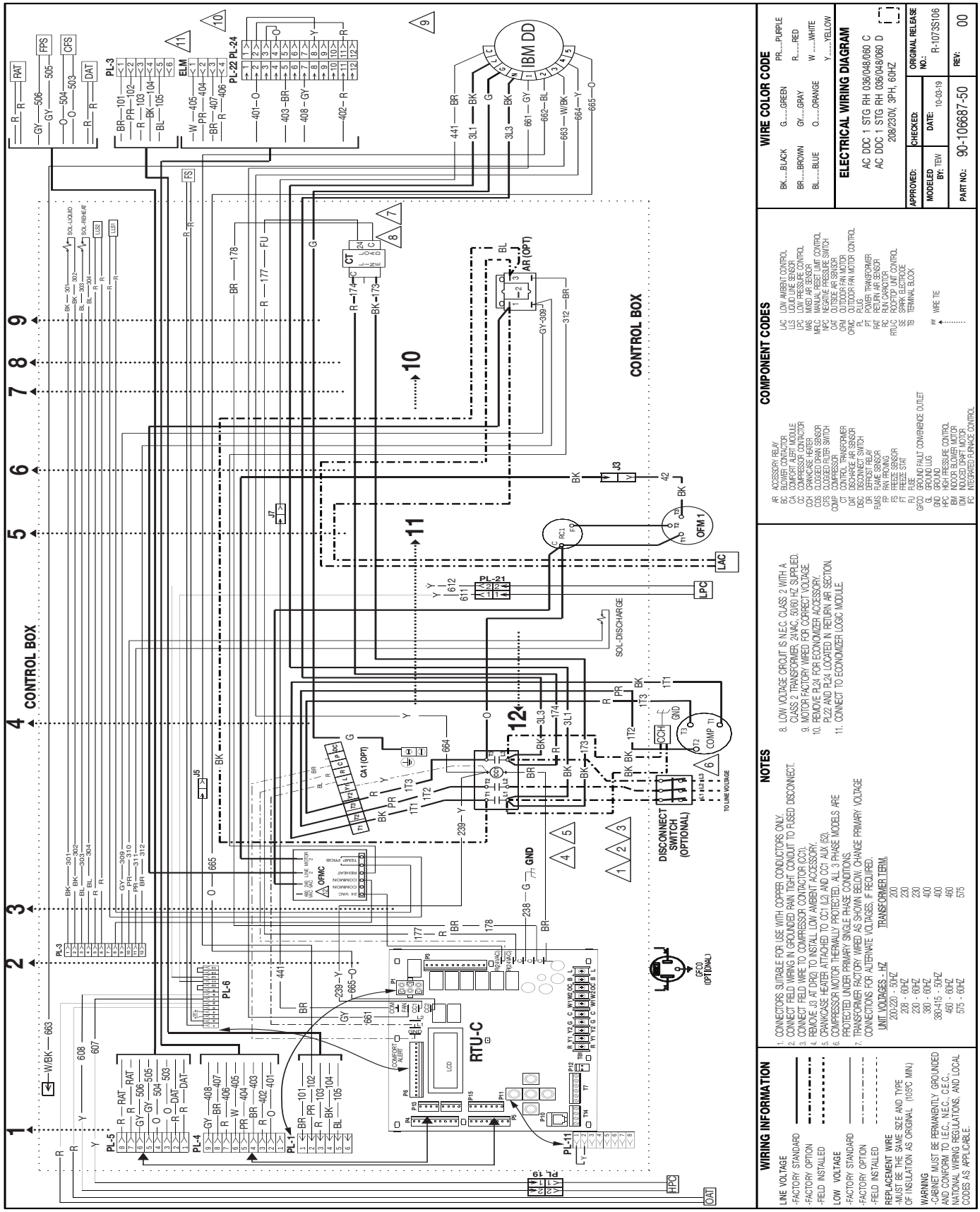
Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



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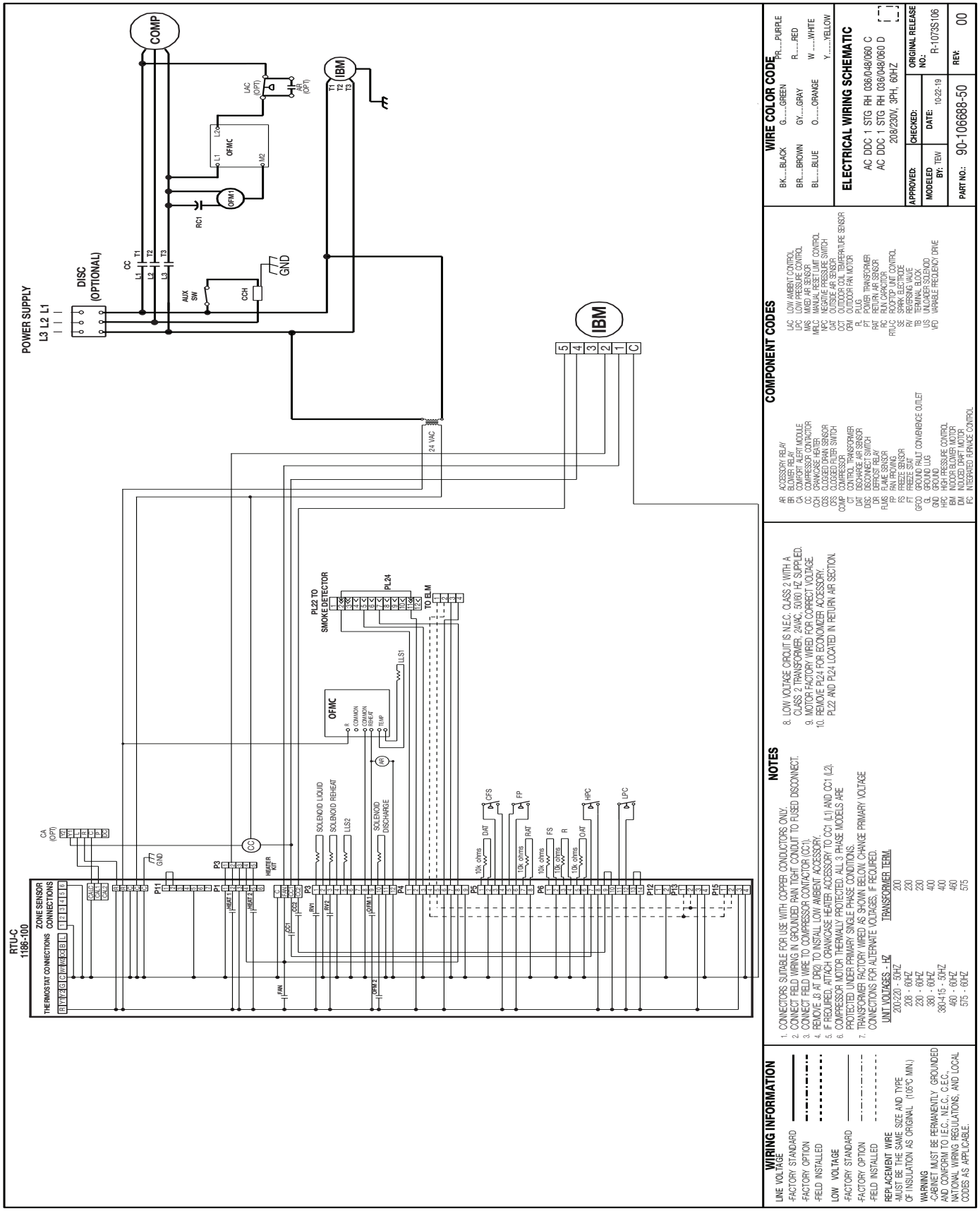
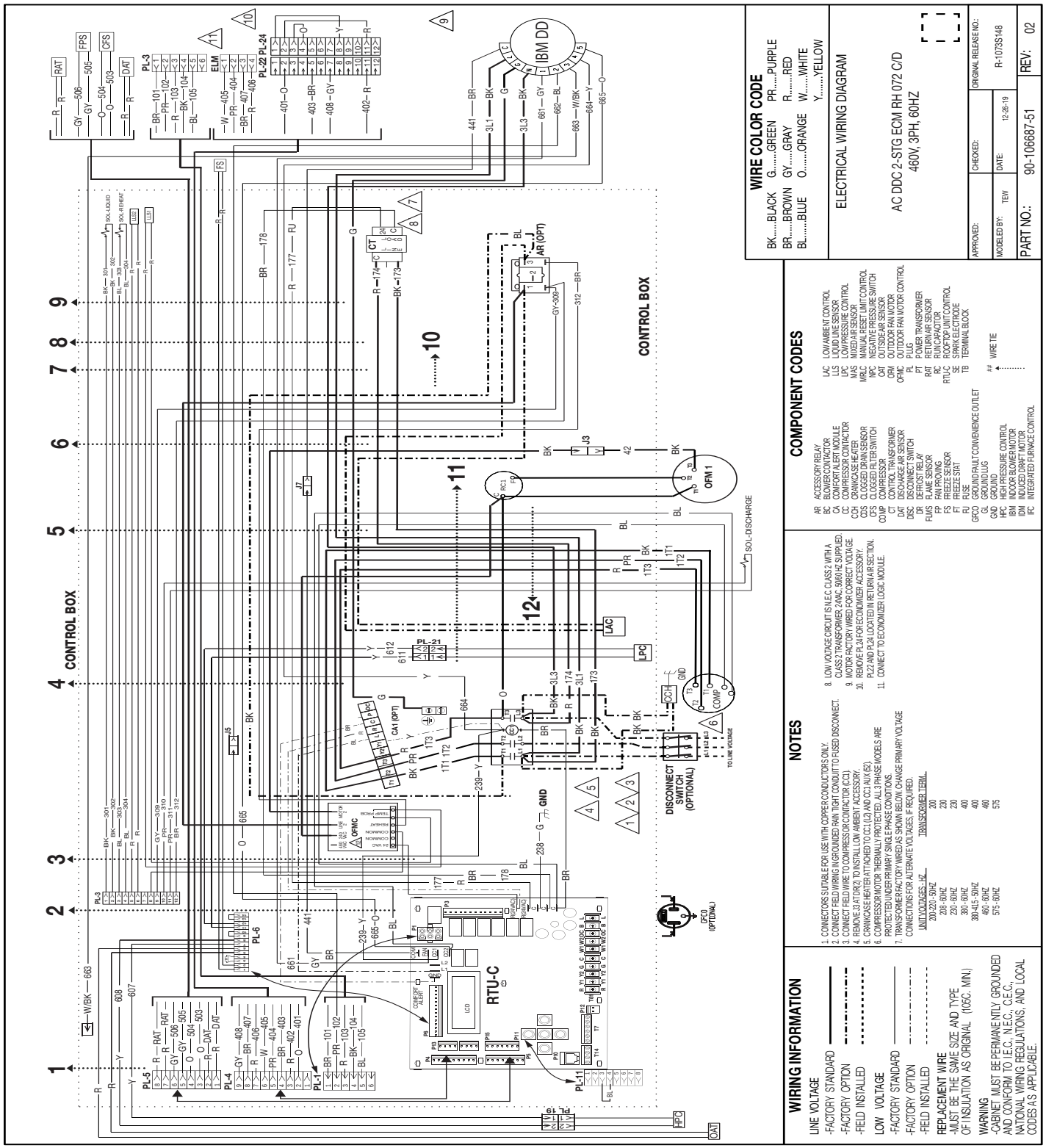
Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



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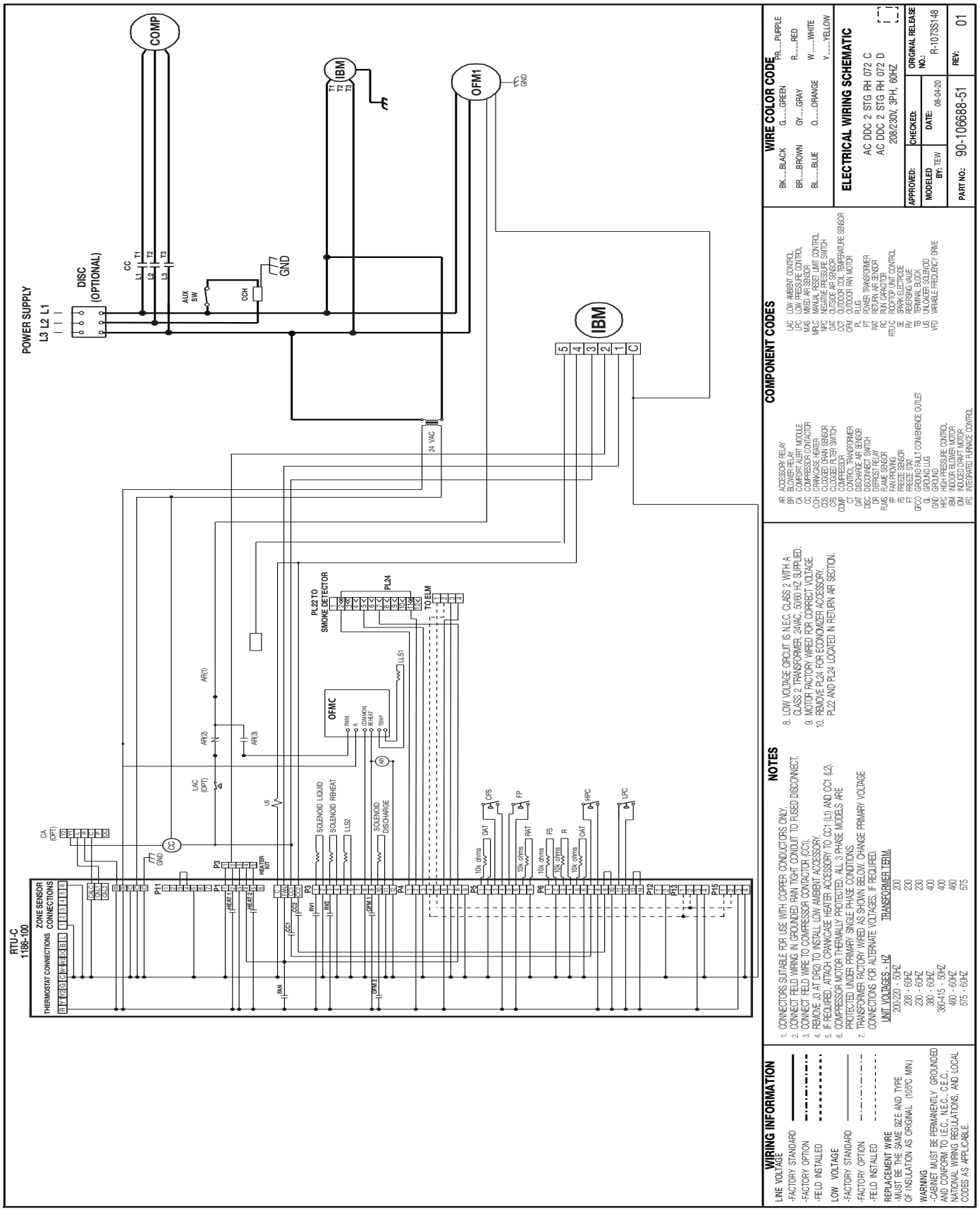
Appendix G. Wiring Diagrams & Schematics (Cont.)



WIRING INFORMATION

LINE VOLTAGE
-FACTORY STANDARD ——————
-FACTORY OPTION - - - - - -
-FELD INSTALLED - - - - - -

LOW VOLTAGE
-FACTORY STANDARD ——————
-FACTORY OPTION - - - - - -
-FELD INSTALLED - - - - - -

REPLACEMENT WIRE
-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105°C MIN.)

WARNING
-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., O.E.C., NATIONAL WIRING REGULATIONS, AND LOCAL CODES AS APPLICABLE.

NOTES

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. CONNECT FELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
3. CONNECT FELD WIRE TO COMPRESSOR CONTACTOR (CC1).
4. REMOVE J3 AT DP(2) TO INSTALL LOW AMBIENT ACCESSORY.
5. IF REQUIRED, ATTACH CRANKCASE HEATER ACCESSORY TO CC1 (L1) AND CC1 (L2).
6. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
7. TRANSFORMER FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTIONS FOR ALTERNATE VOLTAGES, IF REQUIRED.

UNIT VOLTAGES - HZ	TRANSFORMER TERM.
200/220 - 50HZ	200
208 - 60HZ	230
220 - 60HZ	230
380/415 - 50HZ	400
460 - 60HZ	460
575 - 60HZ	575

8. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24VAC, 50/60 HZ, SUPPLIED.
9. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
10. REMOVE PL24 FOR ECONOMIZER ACCESSORY. PL22 AND PL24 LOCATED IN RETURN AIR SECTION.

COMPONENT CODES

AR	ACCESSORY RELAY
BR	BLOWER RELAY
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CDS	CLOGGED DRAIN SENSOR
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DISC	DISCONNECT SWITCH
DR	DEFROST RELAY
FLMS	FLAME SENSOR
FP	FAN PROVING
FS	FREEZE SENSOR
GFCI	GROUND FAULT CONVENIENCE OUTLET
GL	GROUND LUG
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR
IDM	INDUCED DRAFT MOTOR
IFC	INTEGRATED FURNACE CONTROL
LAC	LOW AMBIENT CONTROL
LPC	LOW PRESSURE CONTROL
MAS	MIXED AIR SENSOR
MRLC	MANUAL RESET LIMIT CONTROL
NPC	NEGATIVE PRESSURE SWITCH
OAT	OUTSIDE AIR SENSOR
OCT	OUTDOOR COIL TEMPERATURE SENSOR
OFM	OUTDOOR FAN MOTOR
PL	PLUG
PT	POWER TRANSFORMER
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
SE	SPARK ELECTRODE
TB	TERMINAL BLOCK
TM	TERMINAL
US	UNLOADER SOLENOID
VFD	VARIABLE FREQUENCY DRIVE

WIRE COLOR CODE

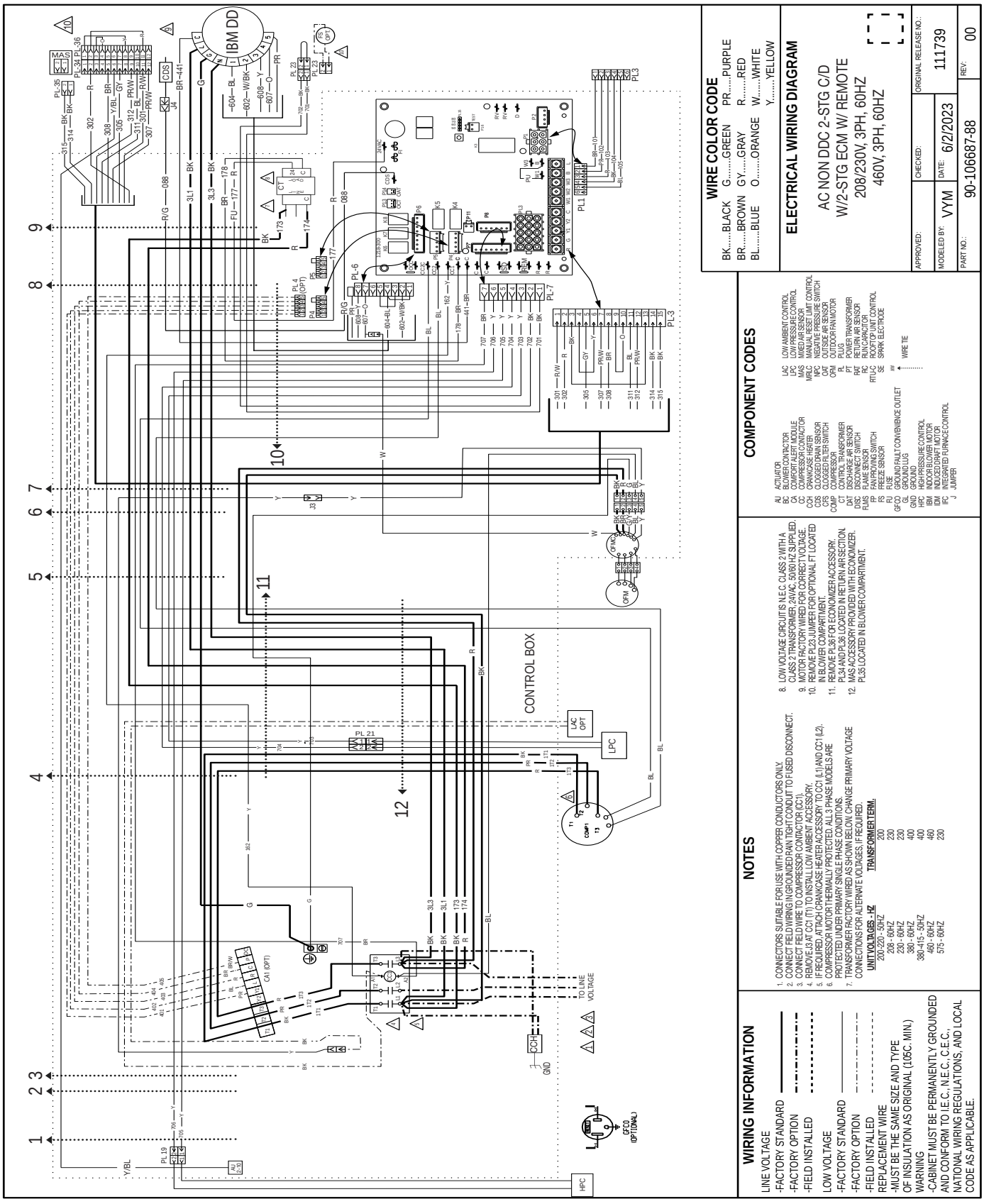
BK....BLACK	G.....GREEN	PR....PURPLE	
BR....BROWN	GY.....GRAY	R.....RED	
BL.....BLUE	O.....ORANGE	W .....WHITE	
		Y.....YELLOW	

ELECTRICAL WIRING SCHEMATIC

AC DDC 2 STG RH 072 C
AC DDC 2 STG RH 072 D
208/230V, 3PH, 60HZ

APPROVED:	CHECKED:	ORIGINAL RELEASE NO.:
MODELED BY: TEW	DATE: 08-04-20	R-1073S148
PART NO.: 90-106688-51		REV: 01

Appendix G. Wiring Diagrams & Schematics (Cont.)



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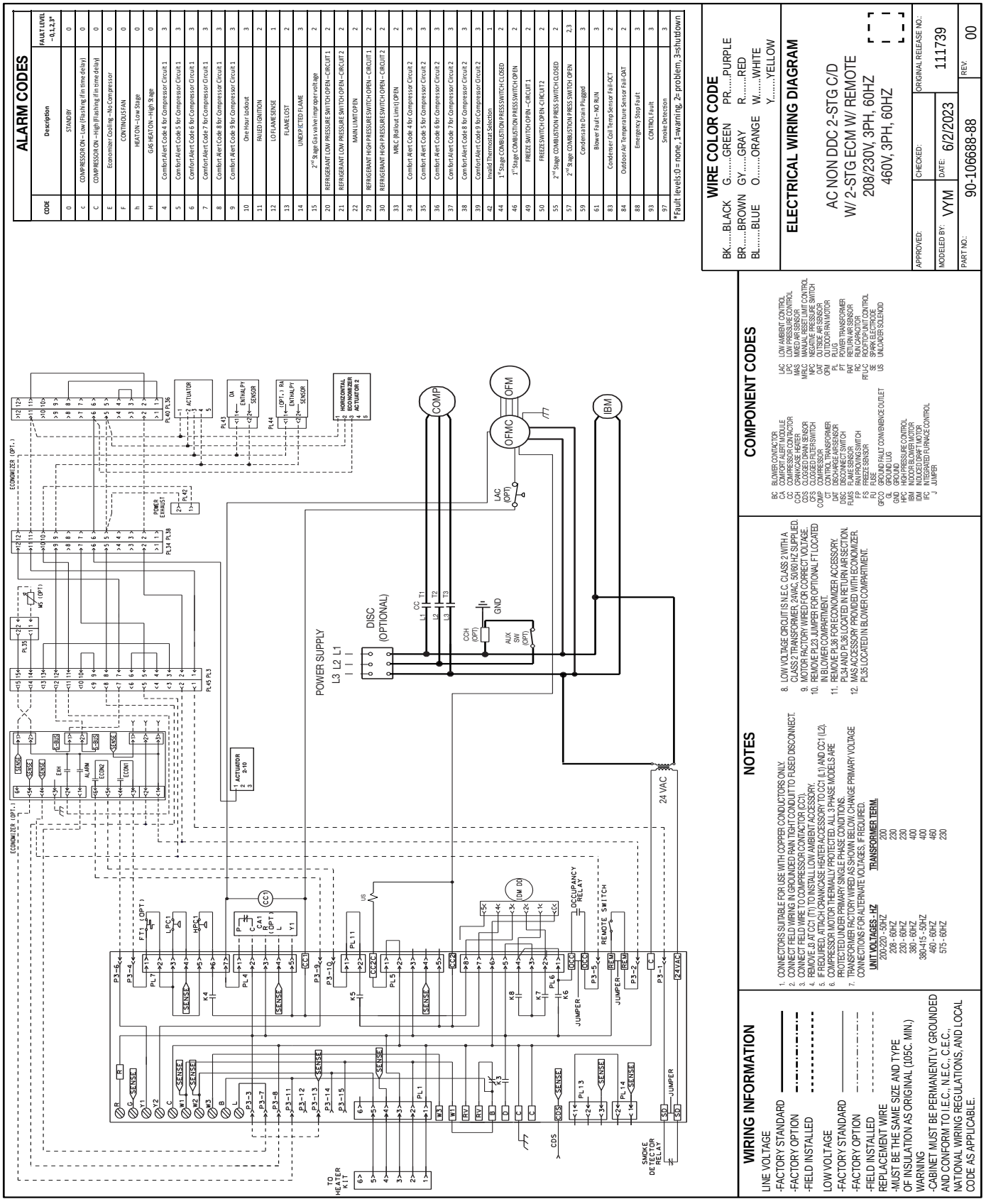
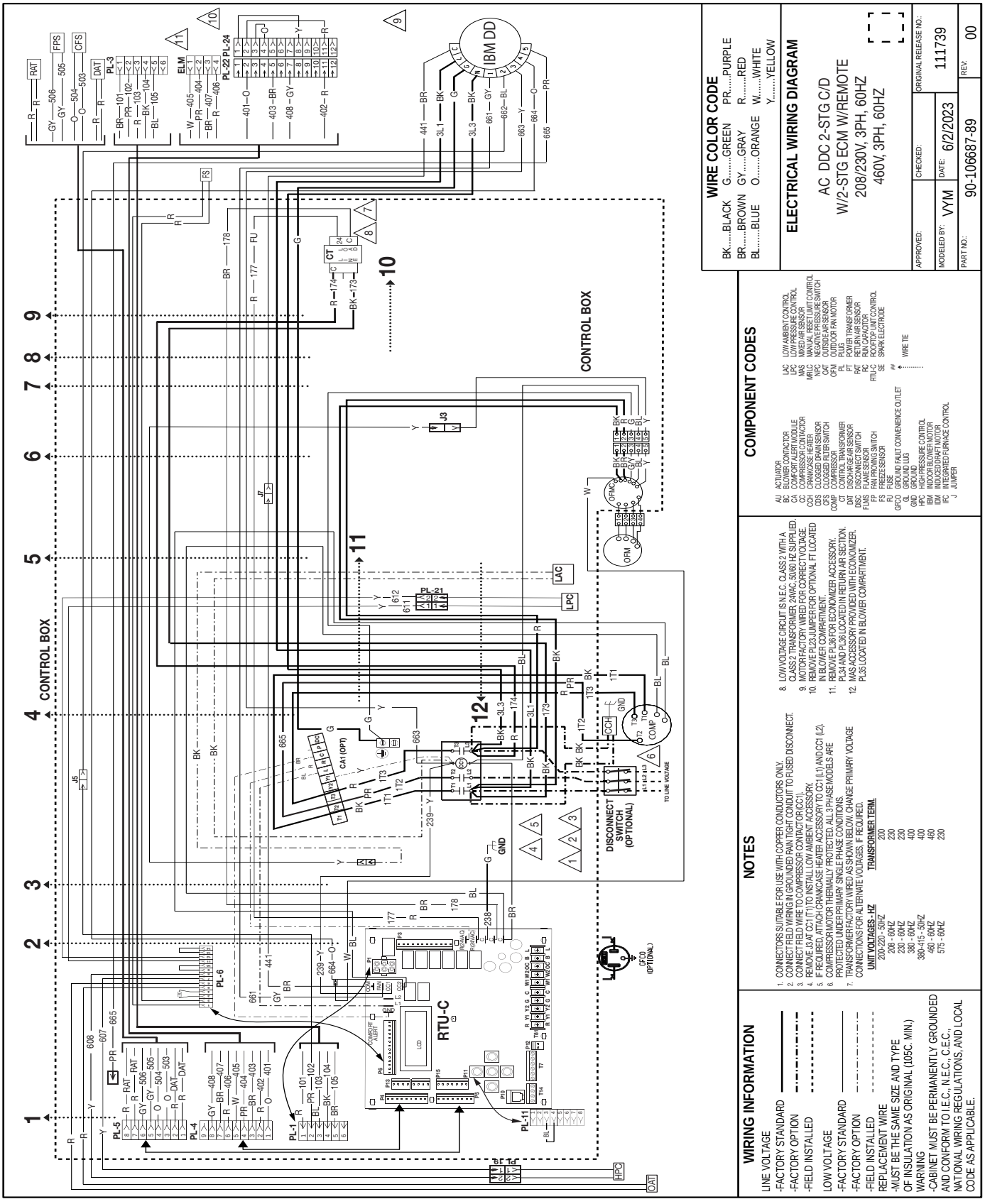
Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



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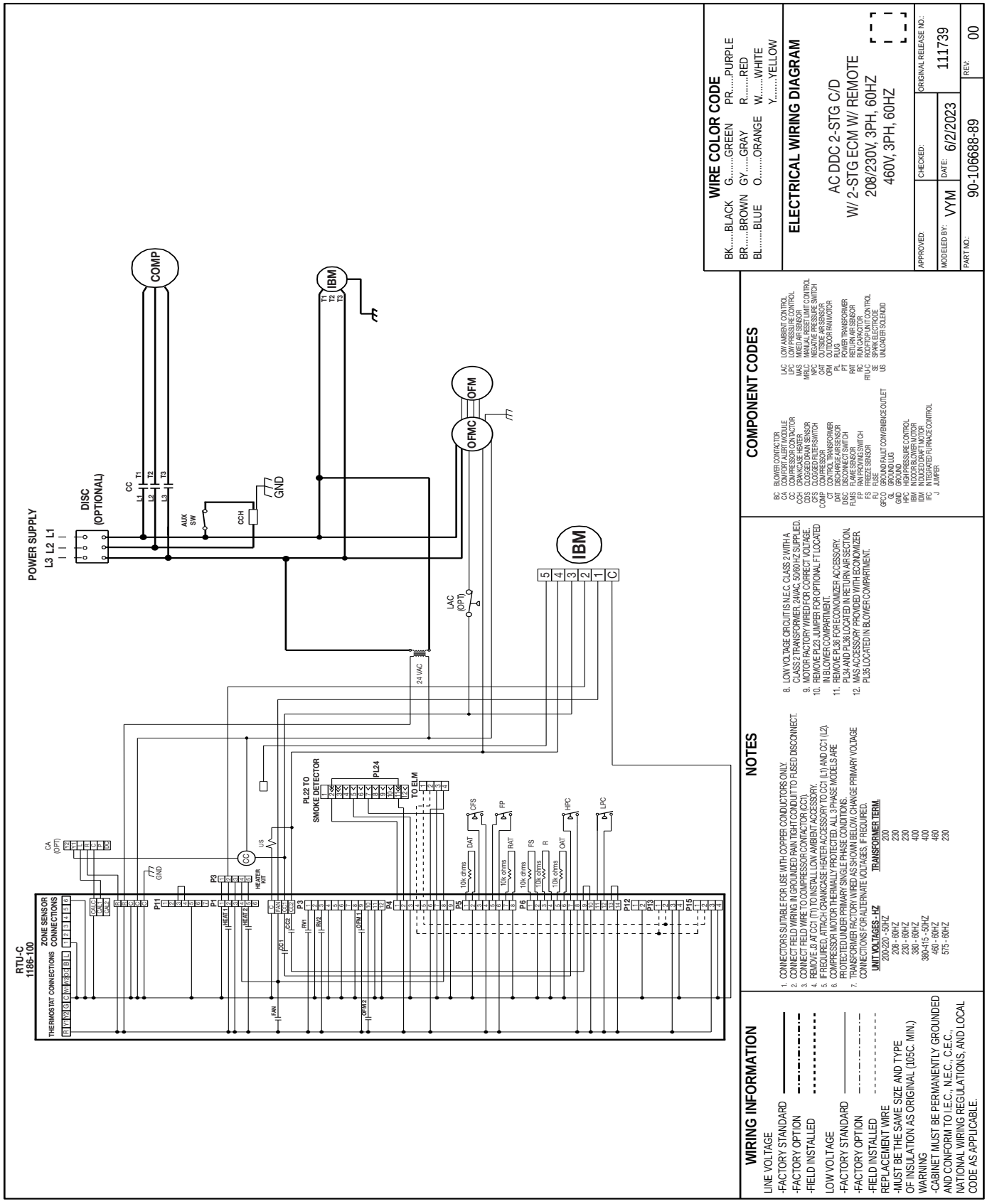
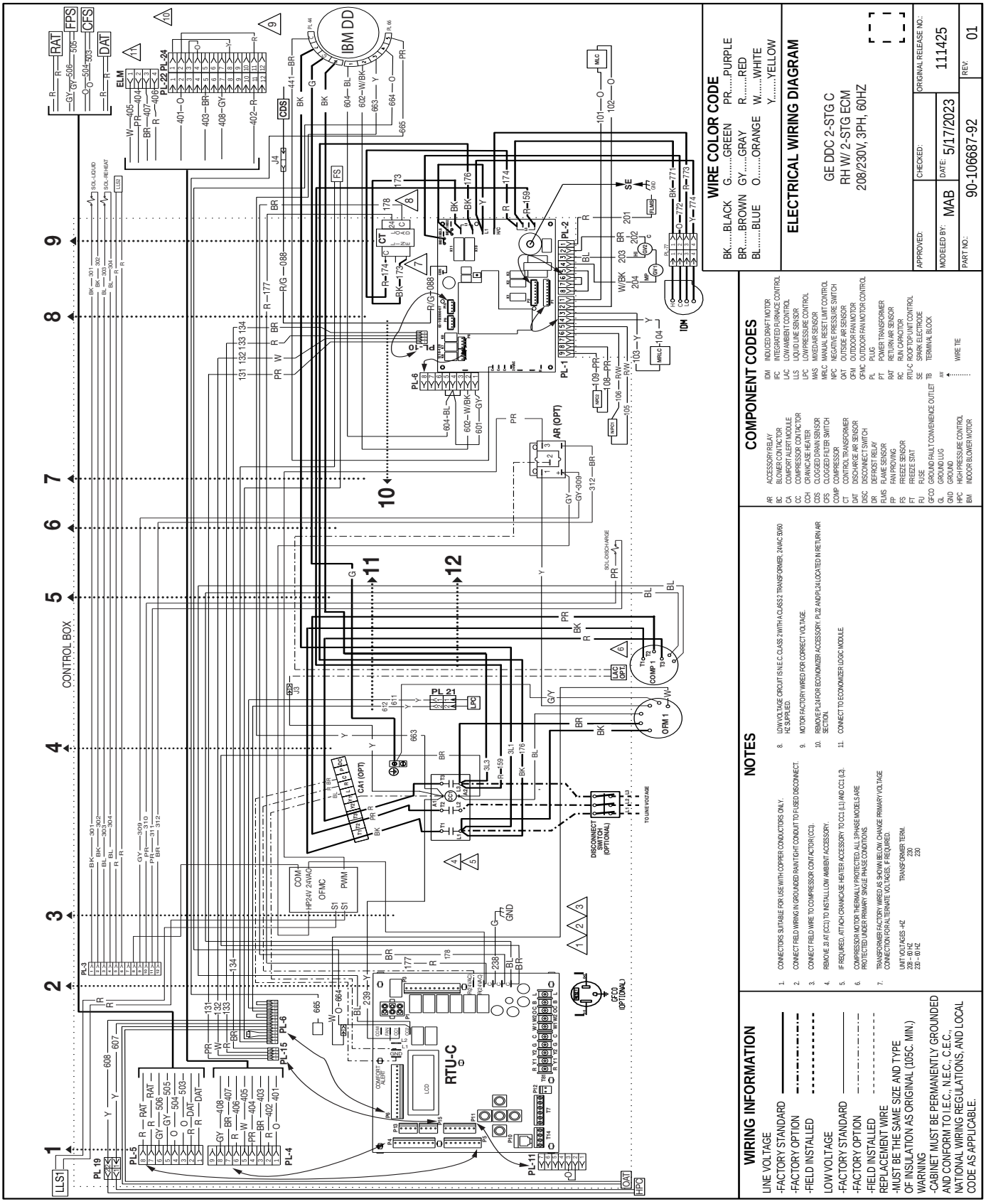
Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



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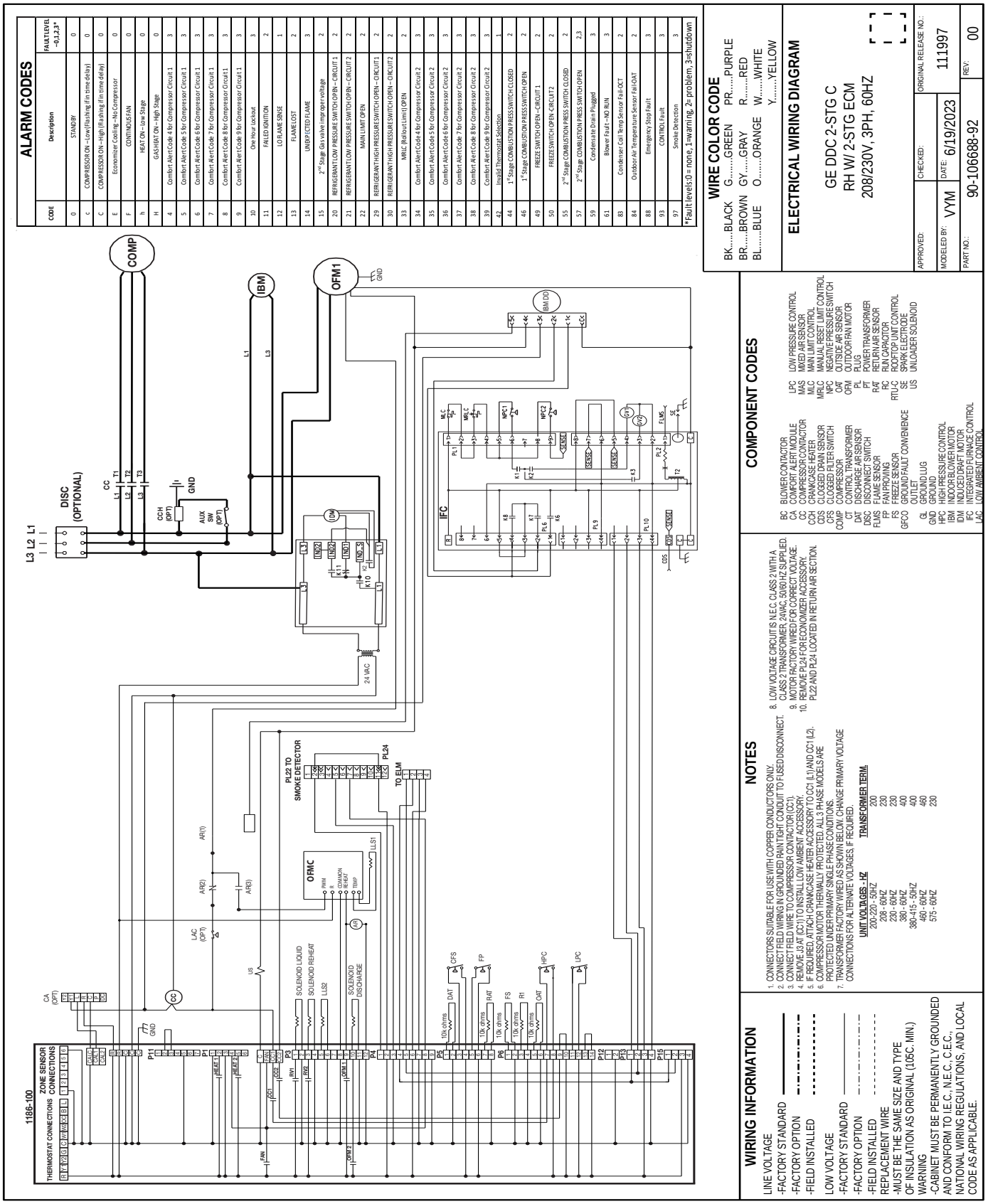
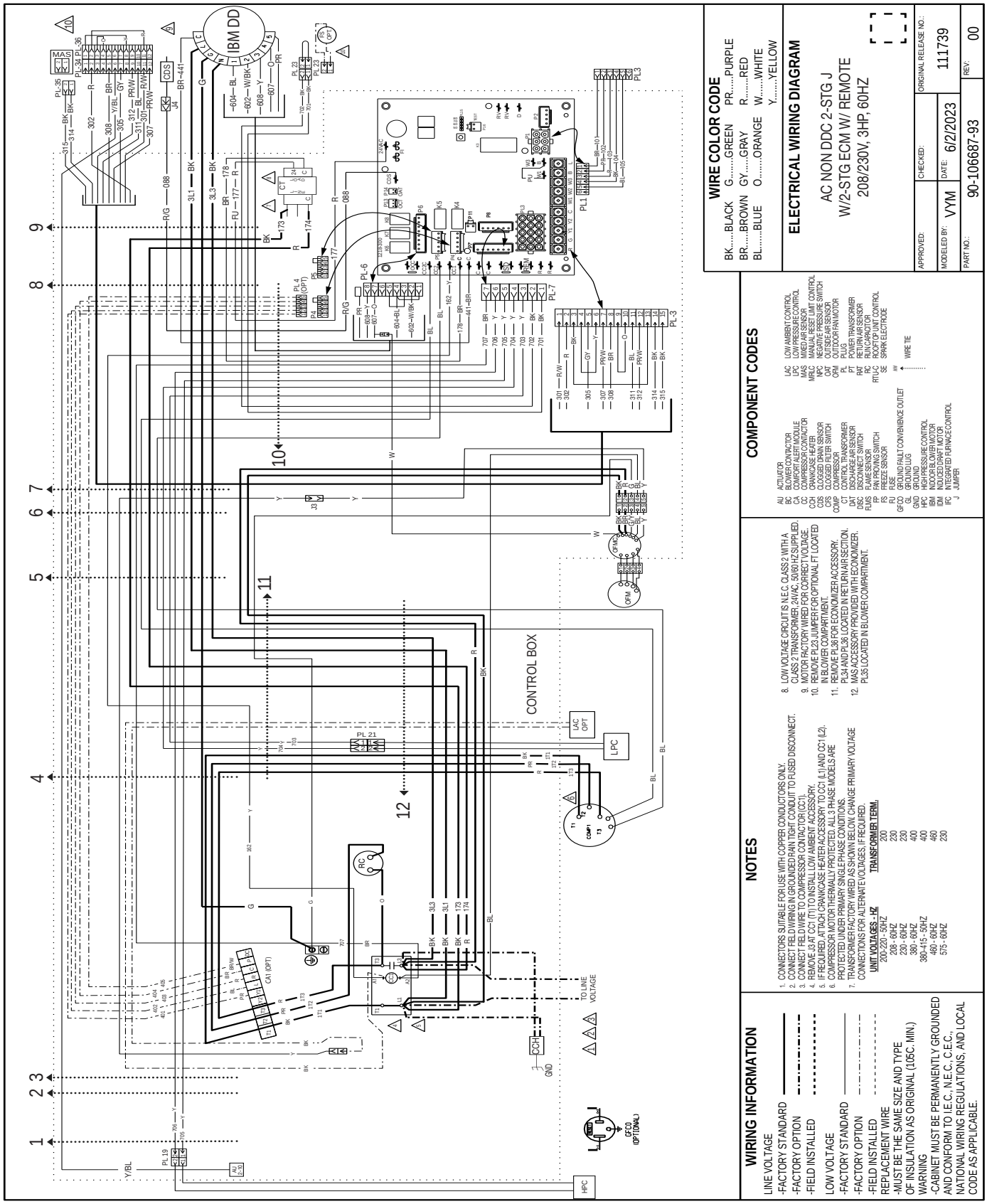
Appendix G. Wiring Diagrams & Schematics (Cont.)



Appendix G. Wiring Diagrams & Schematics (Cont.)



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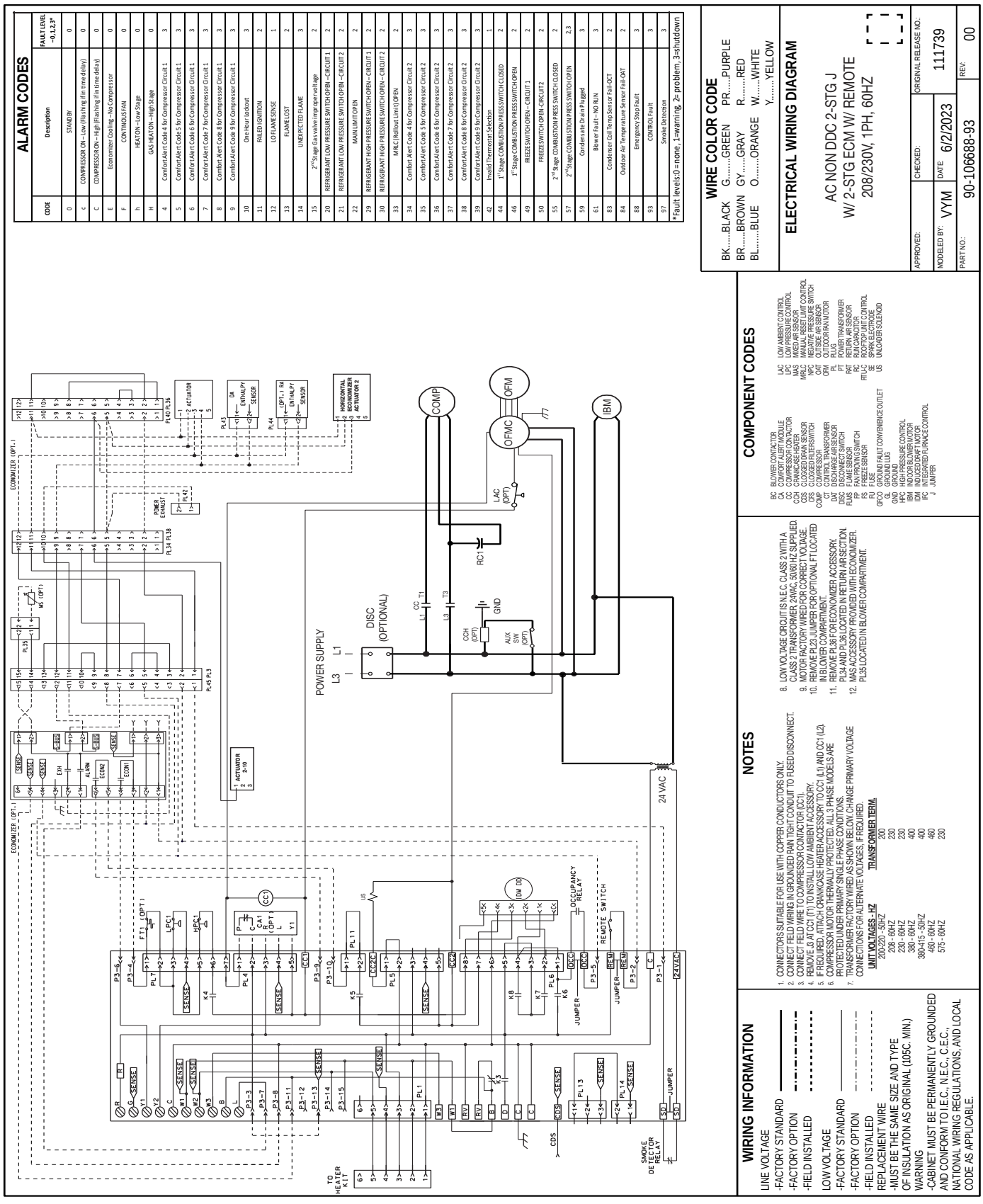

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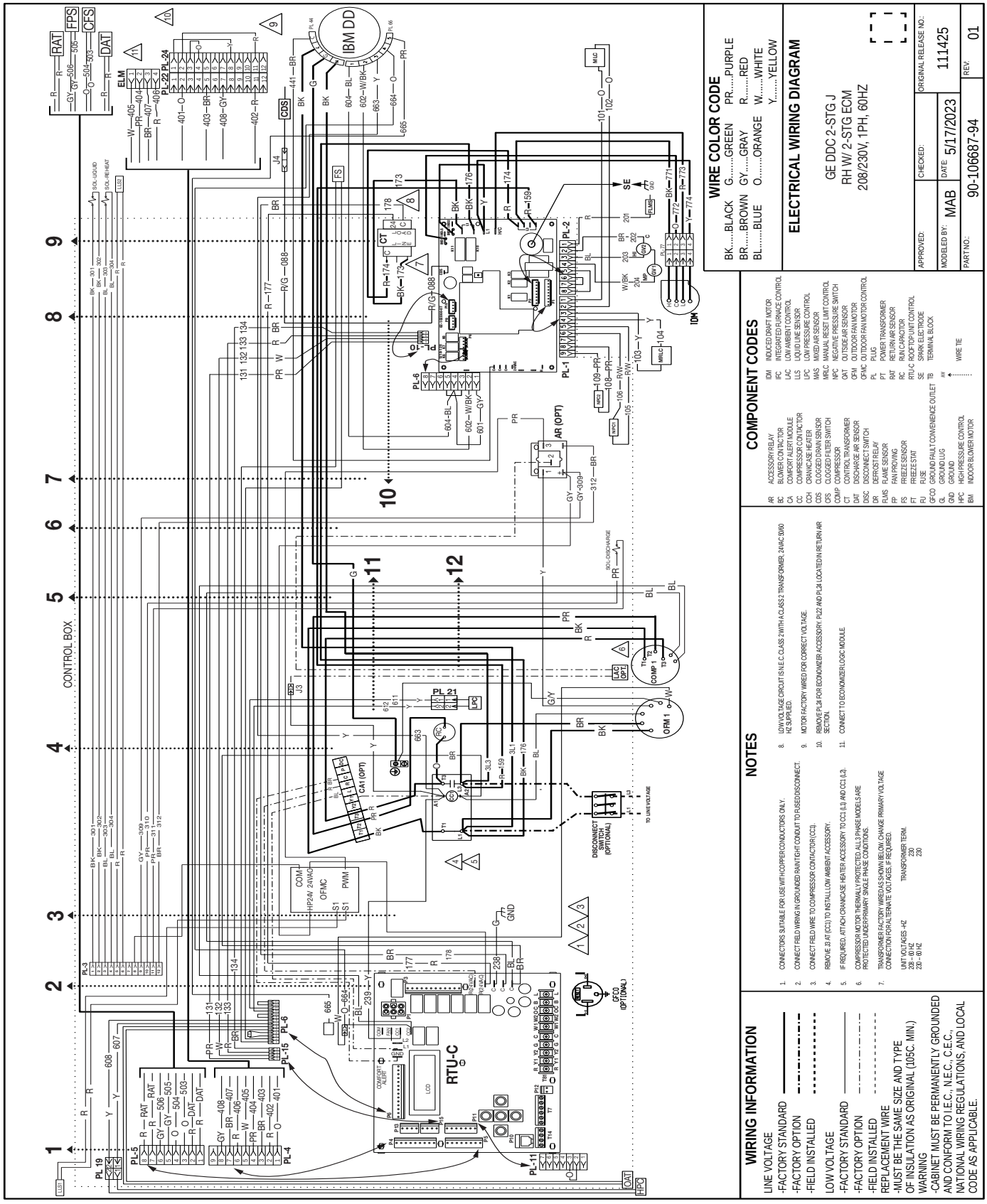

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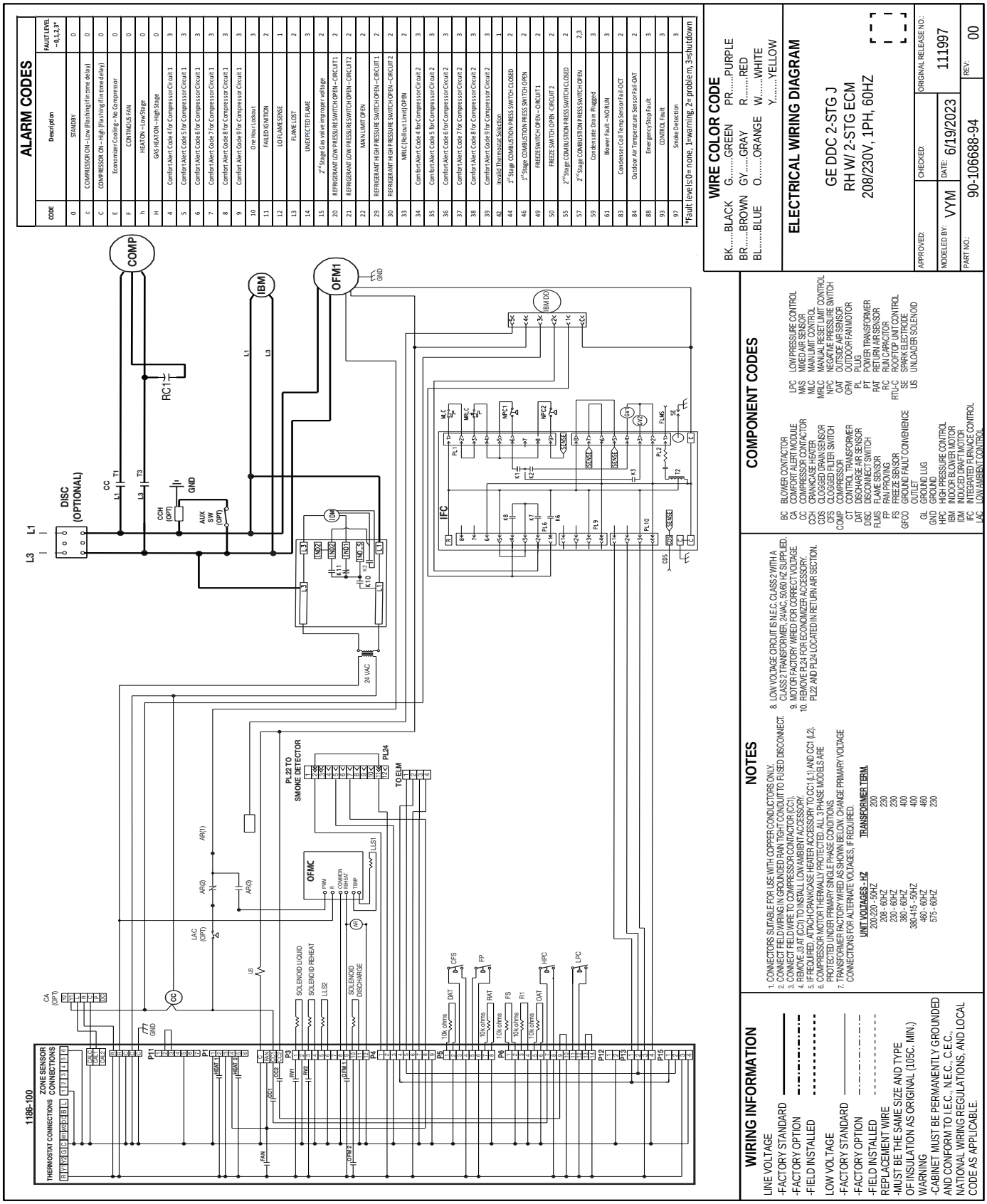

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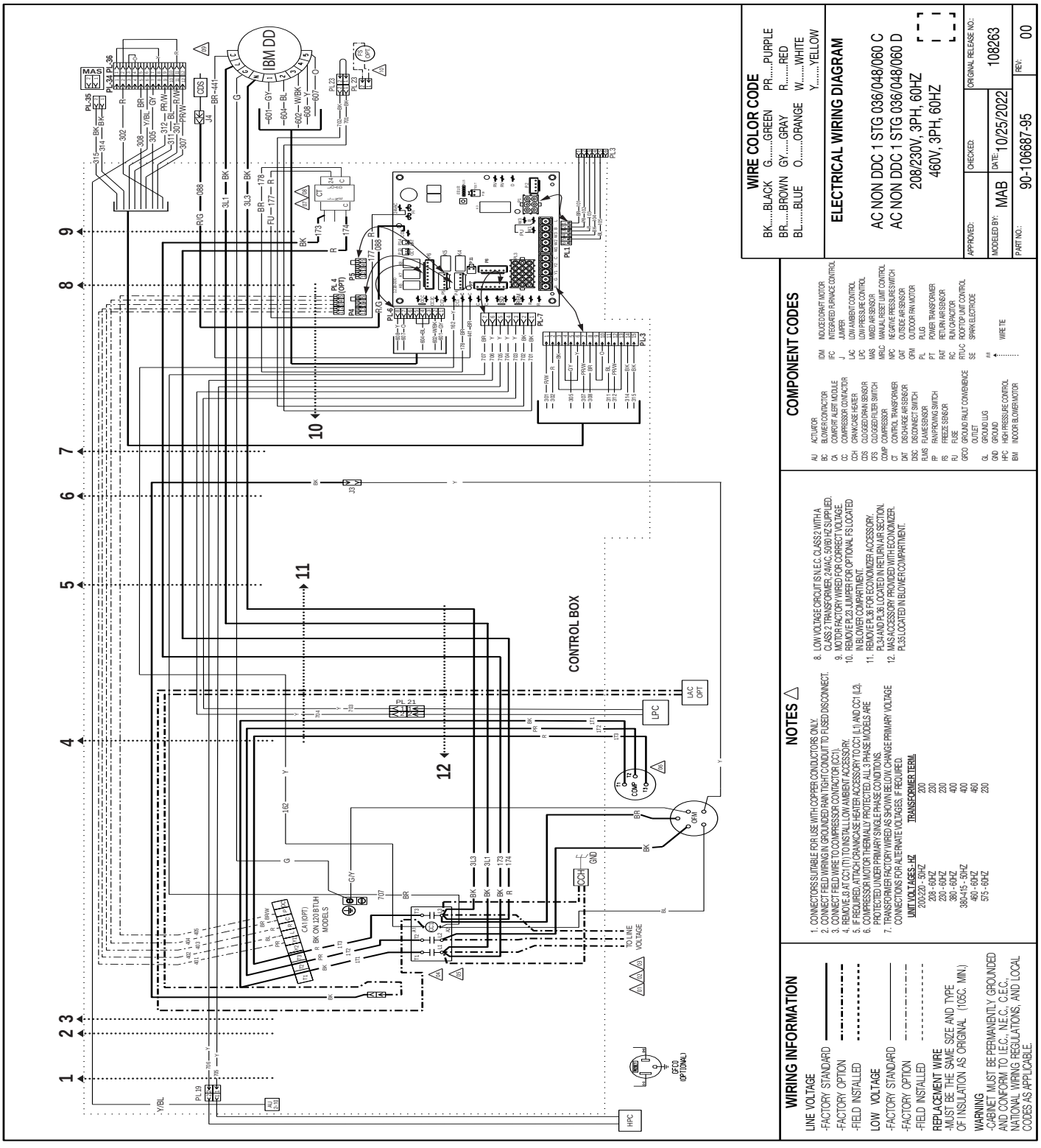

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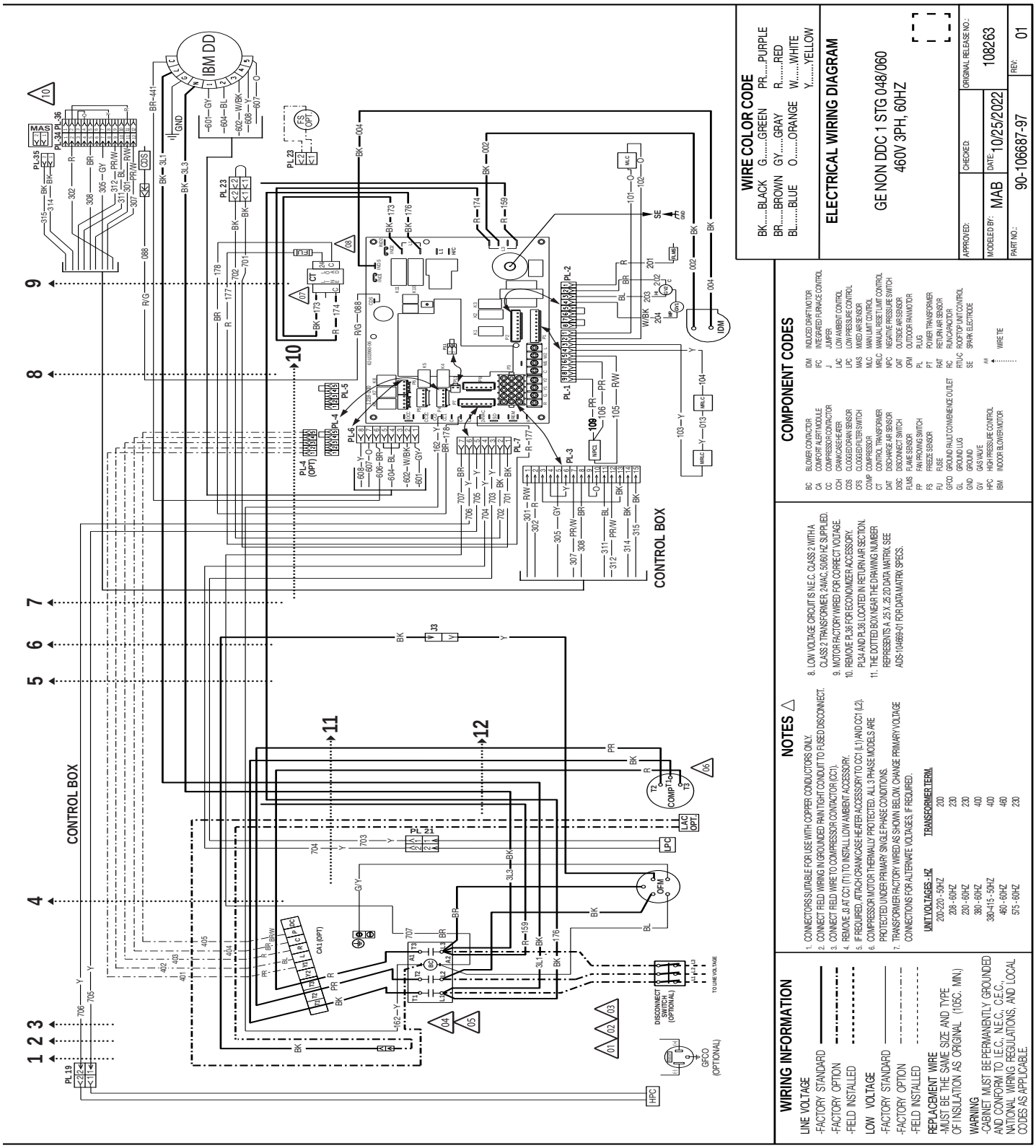

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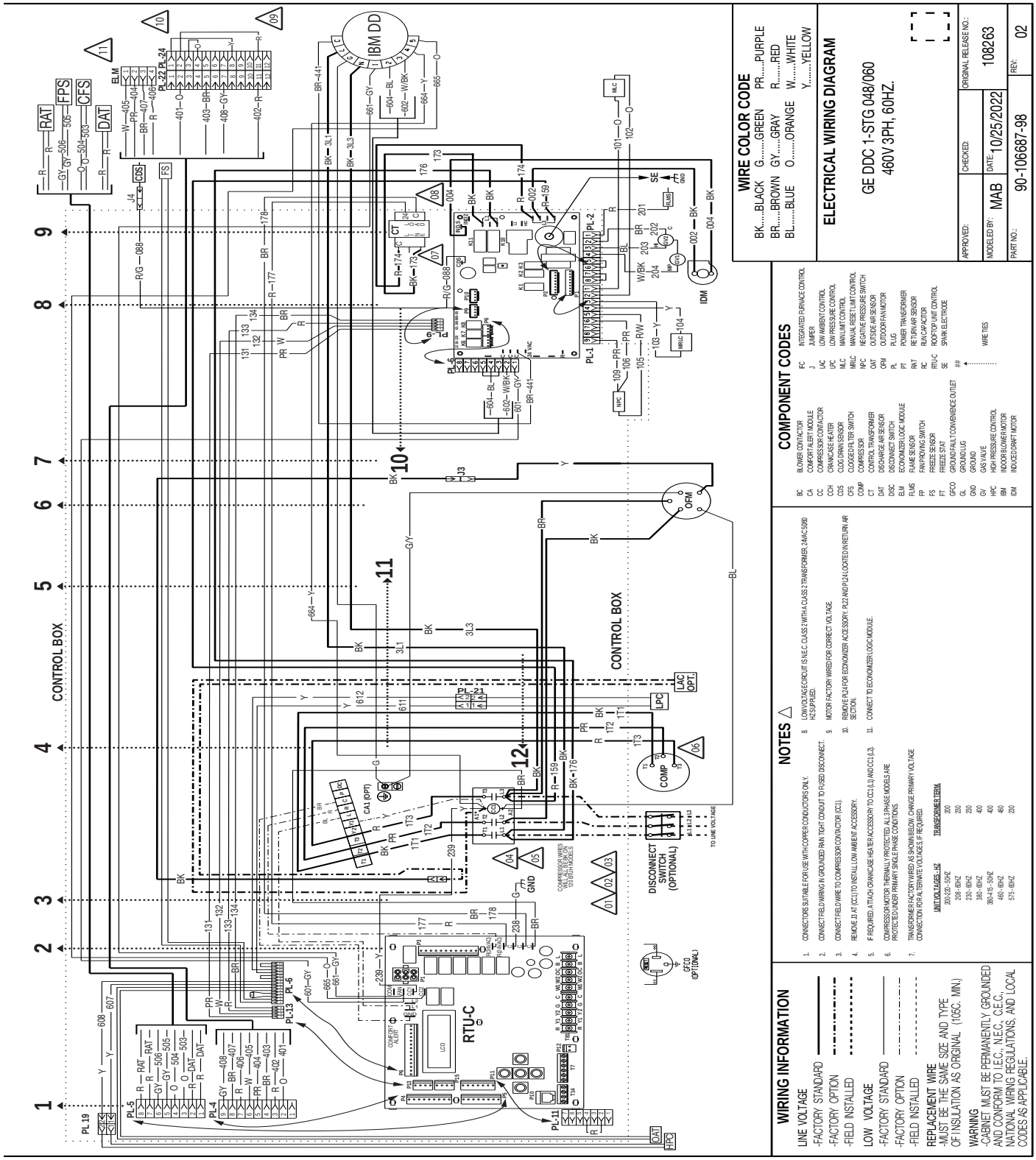

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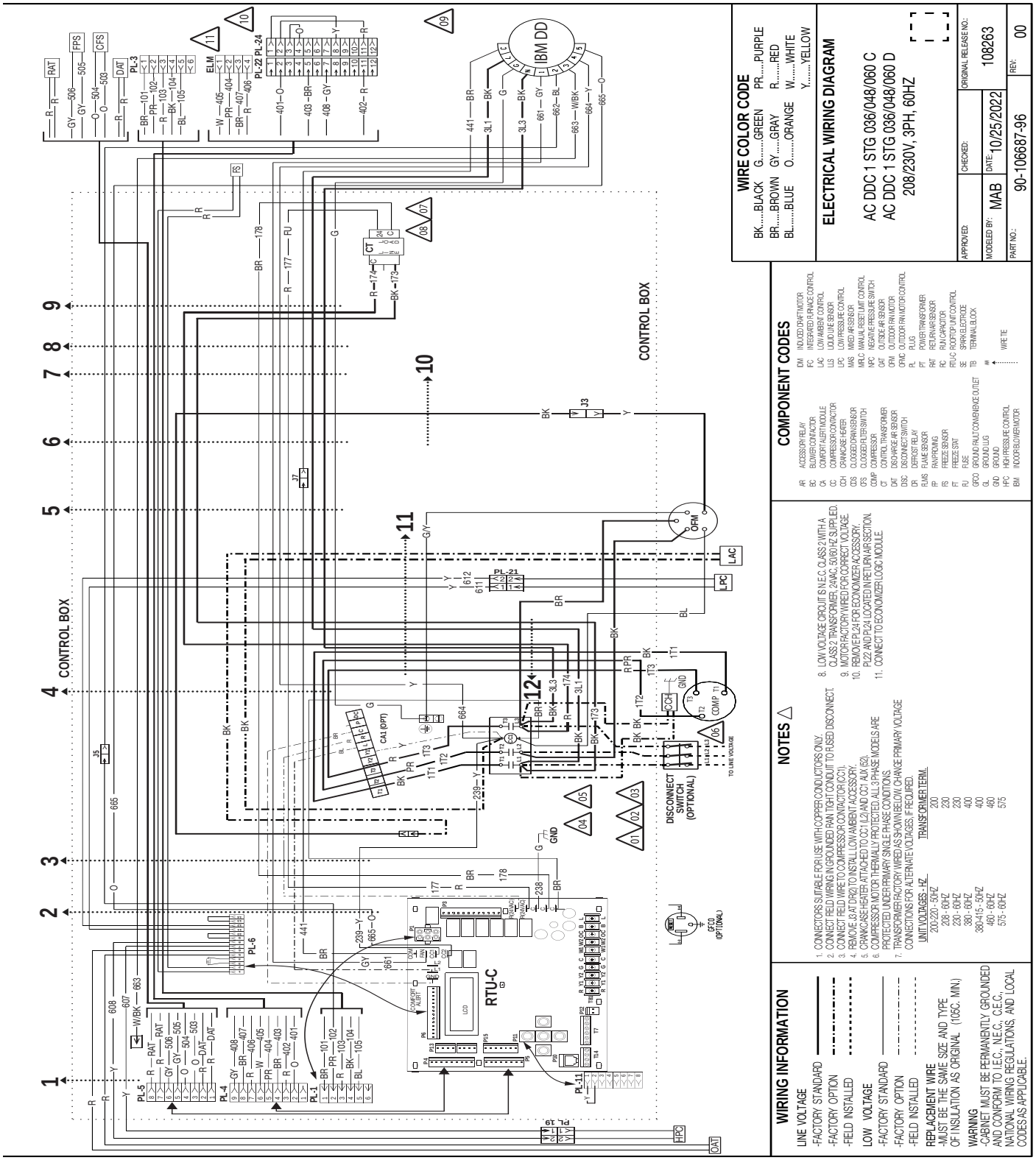

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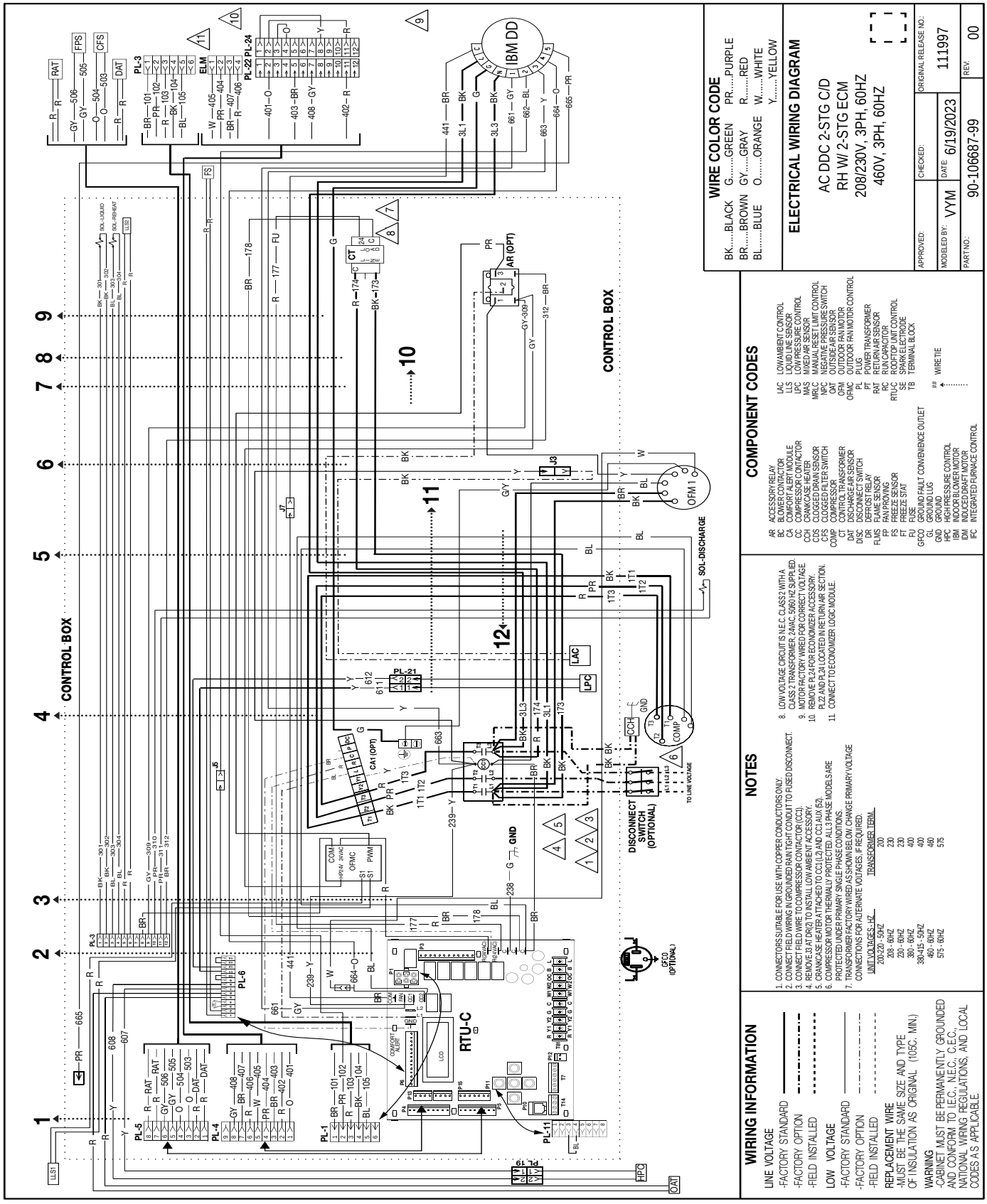

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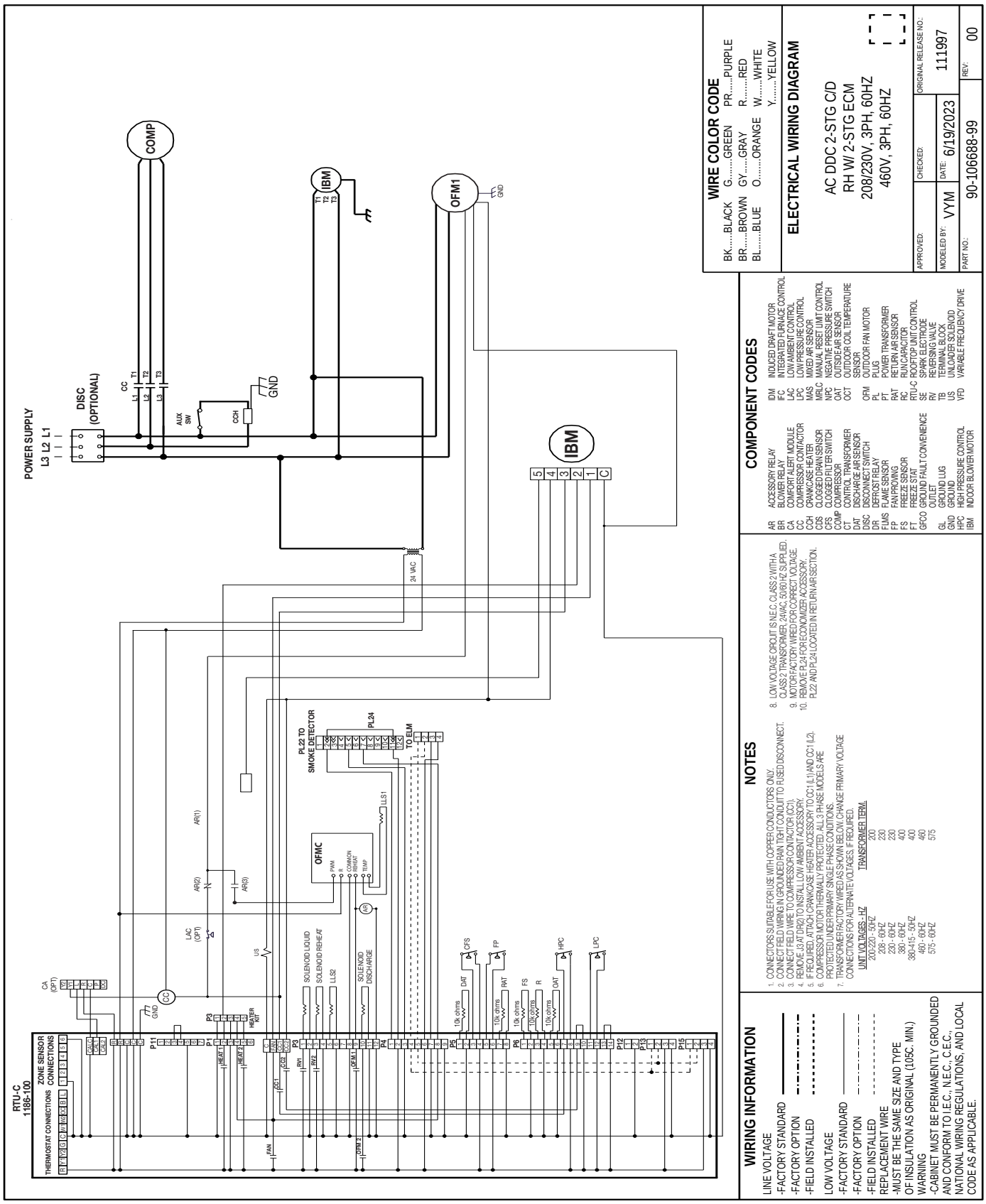

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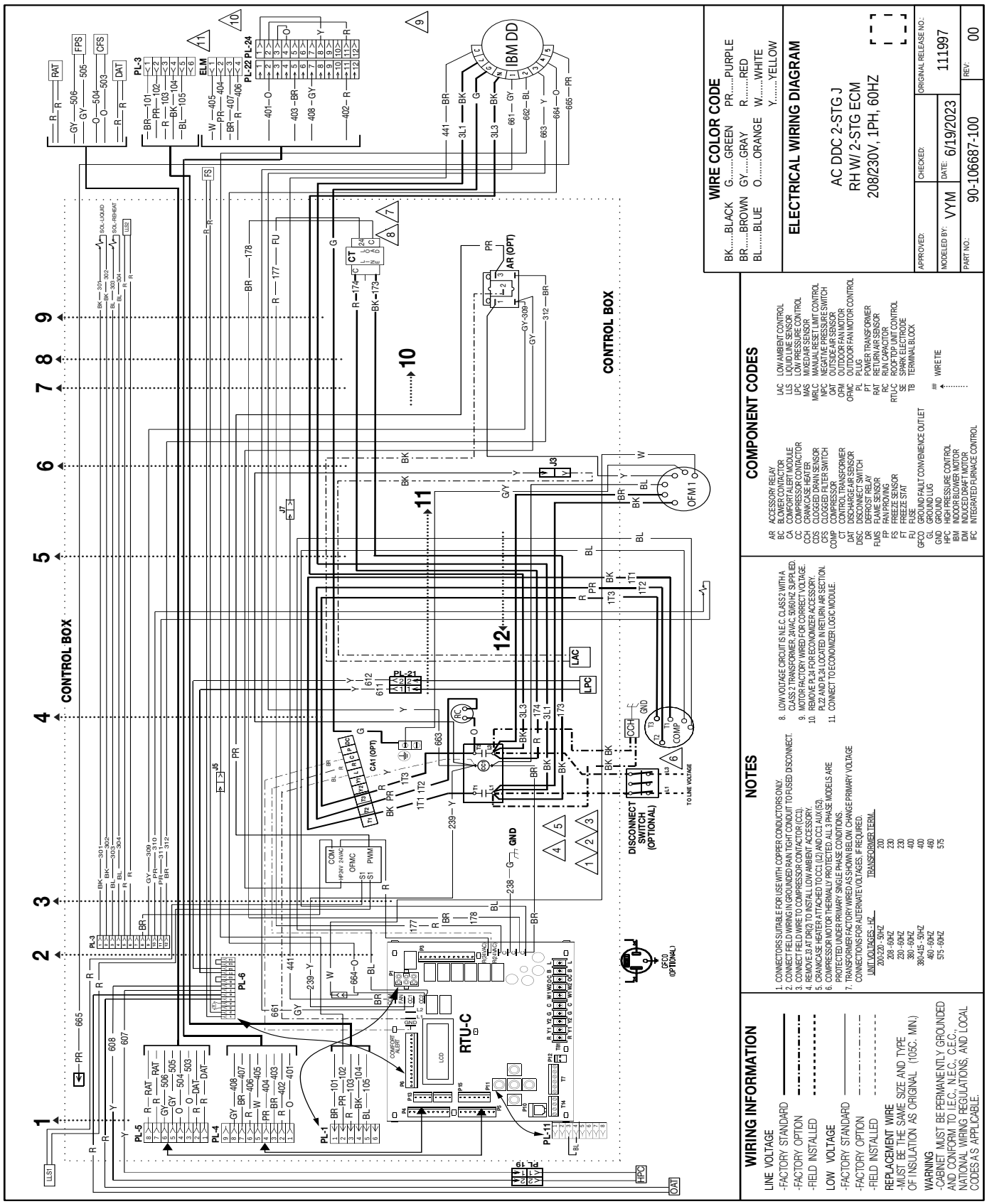

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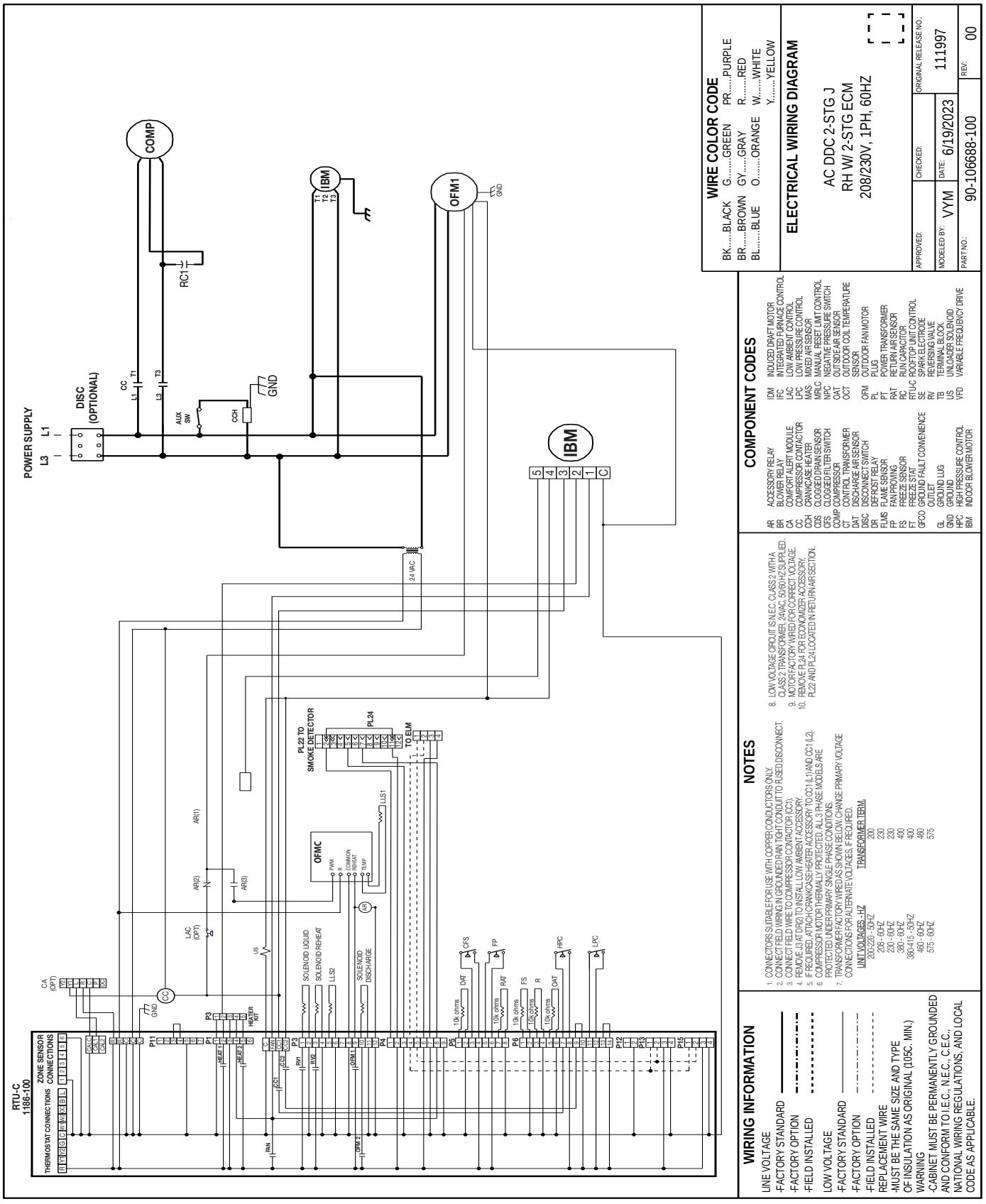
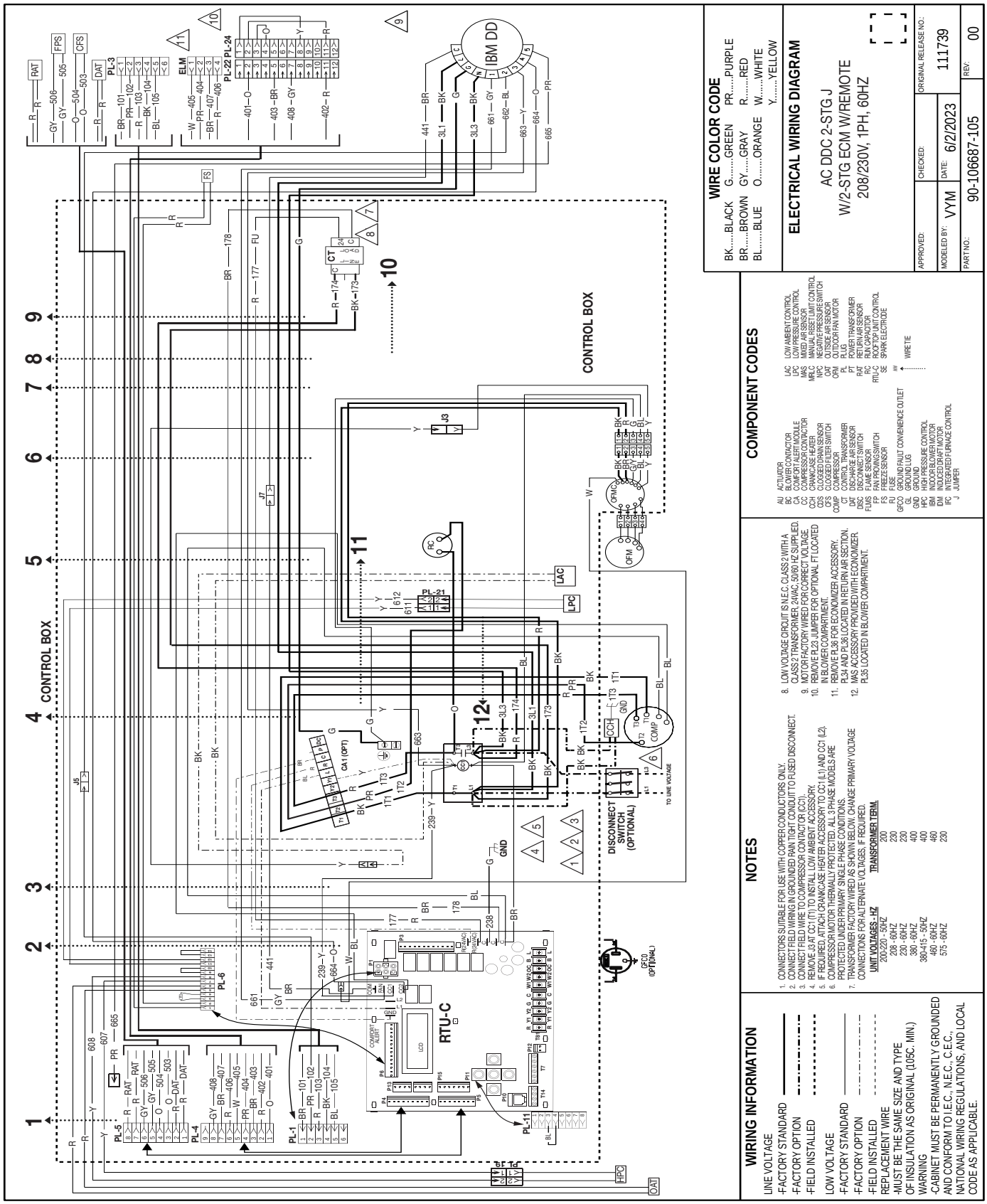


Appendix G. Wiring Diagrams & Schematics (Cont.)



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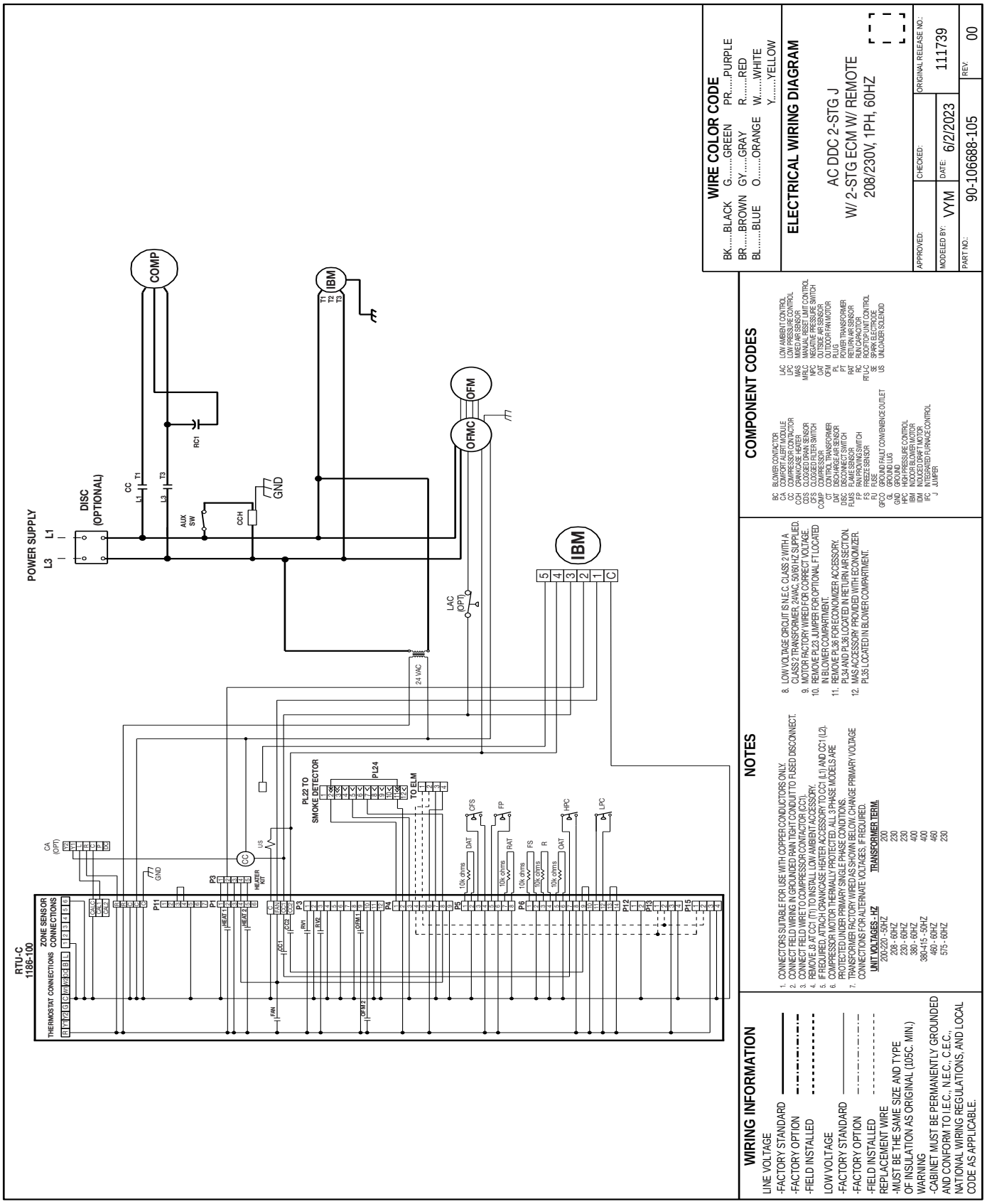

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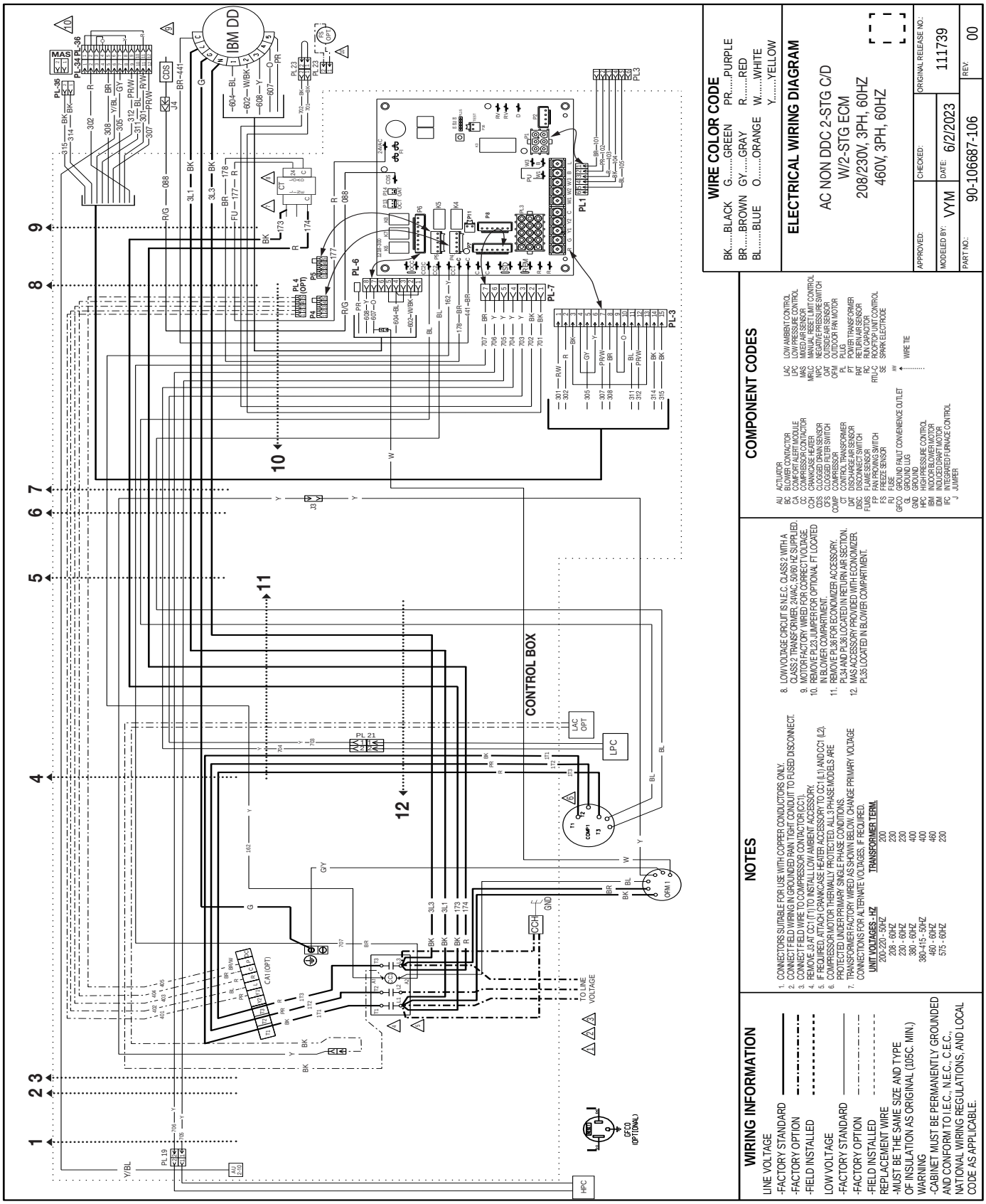

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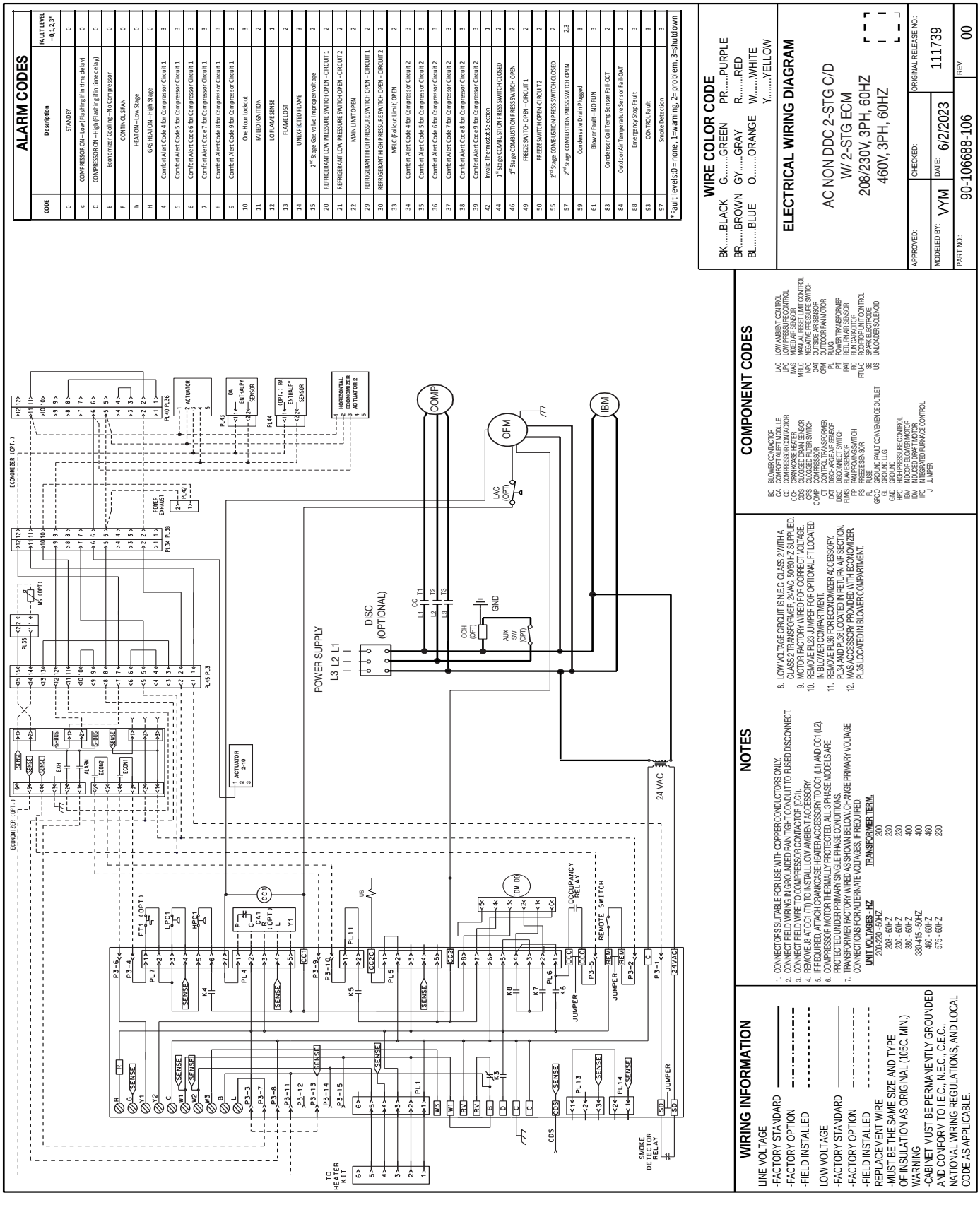

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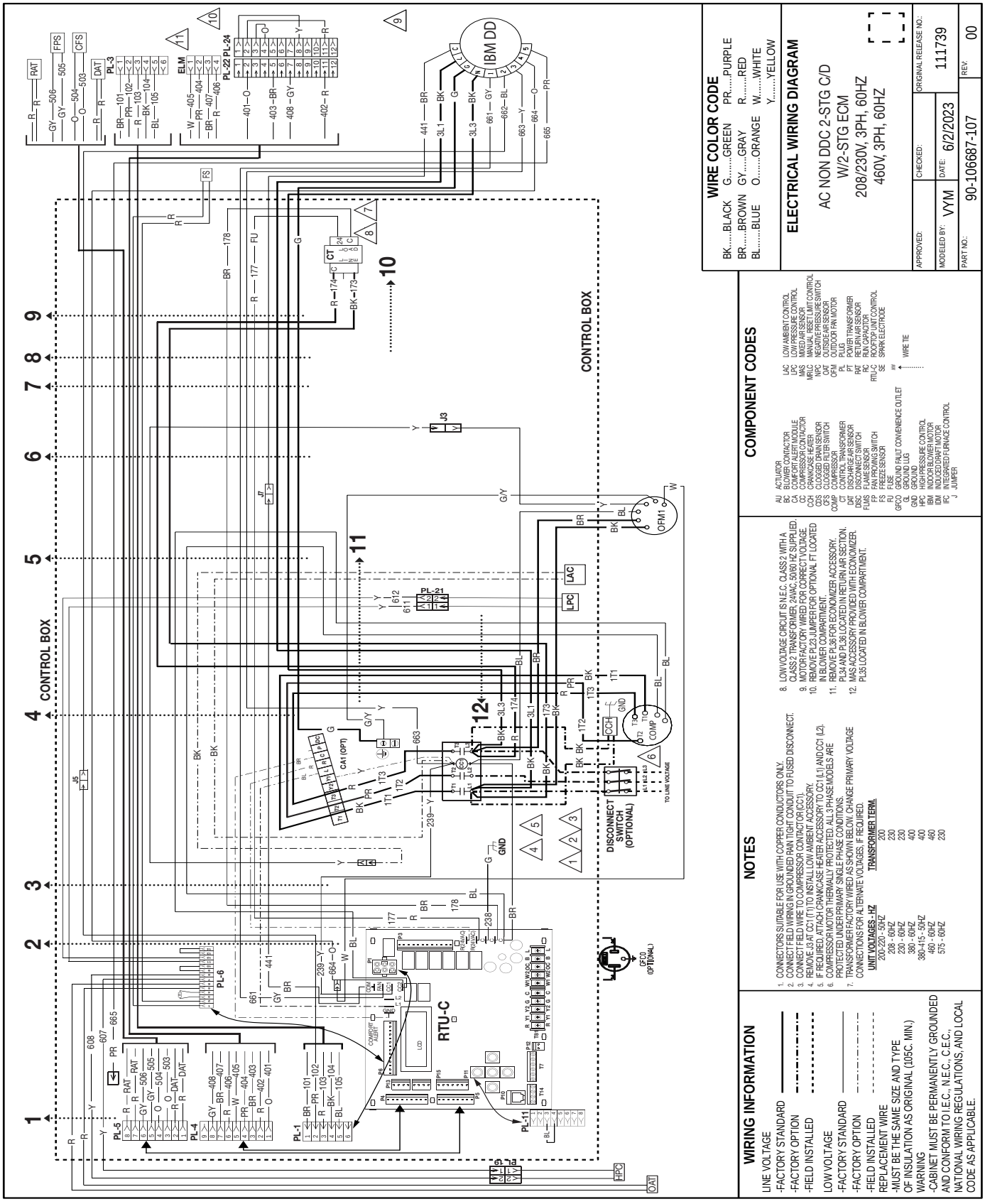

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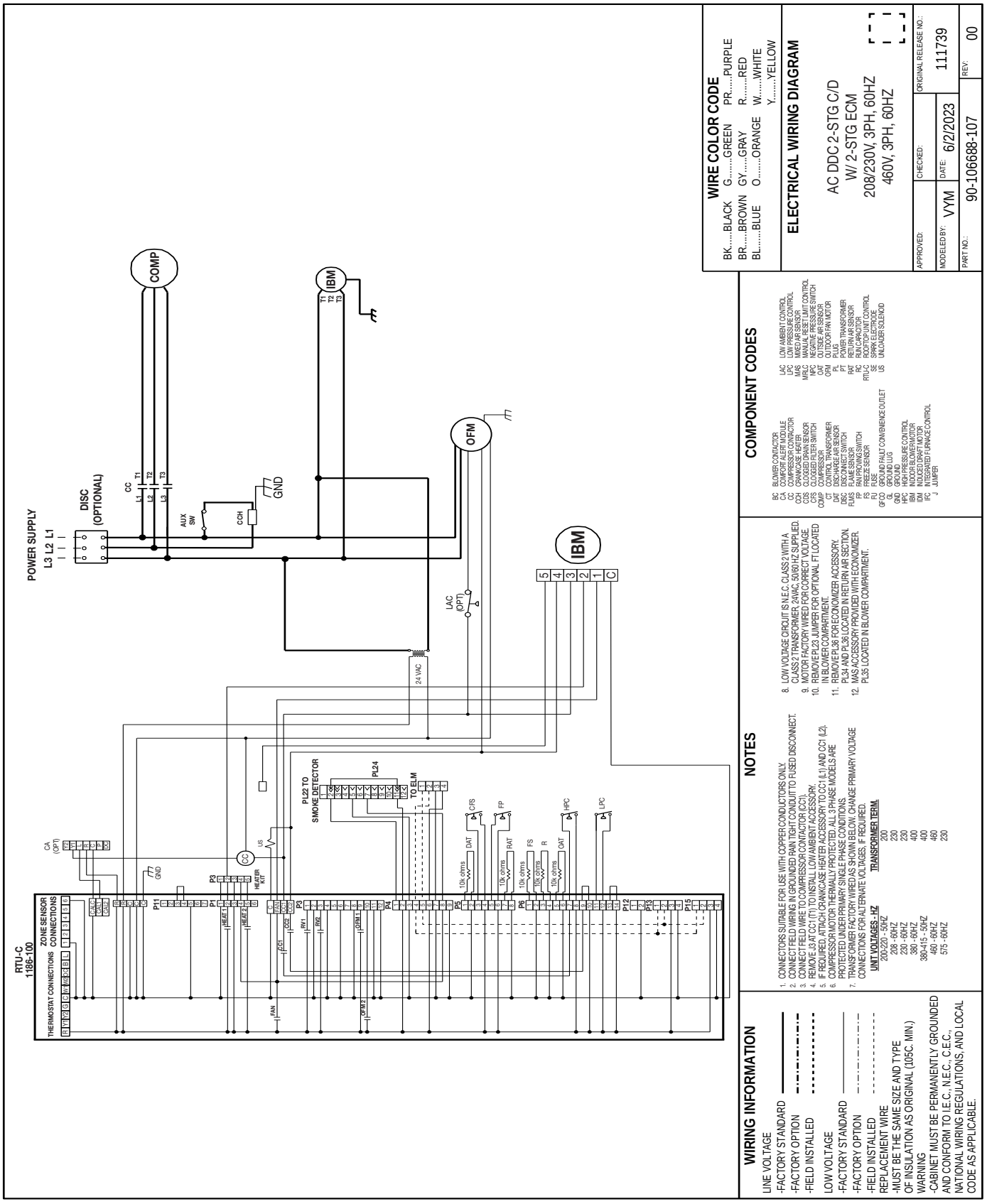

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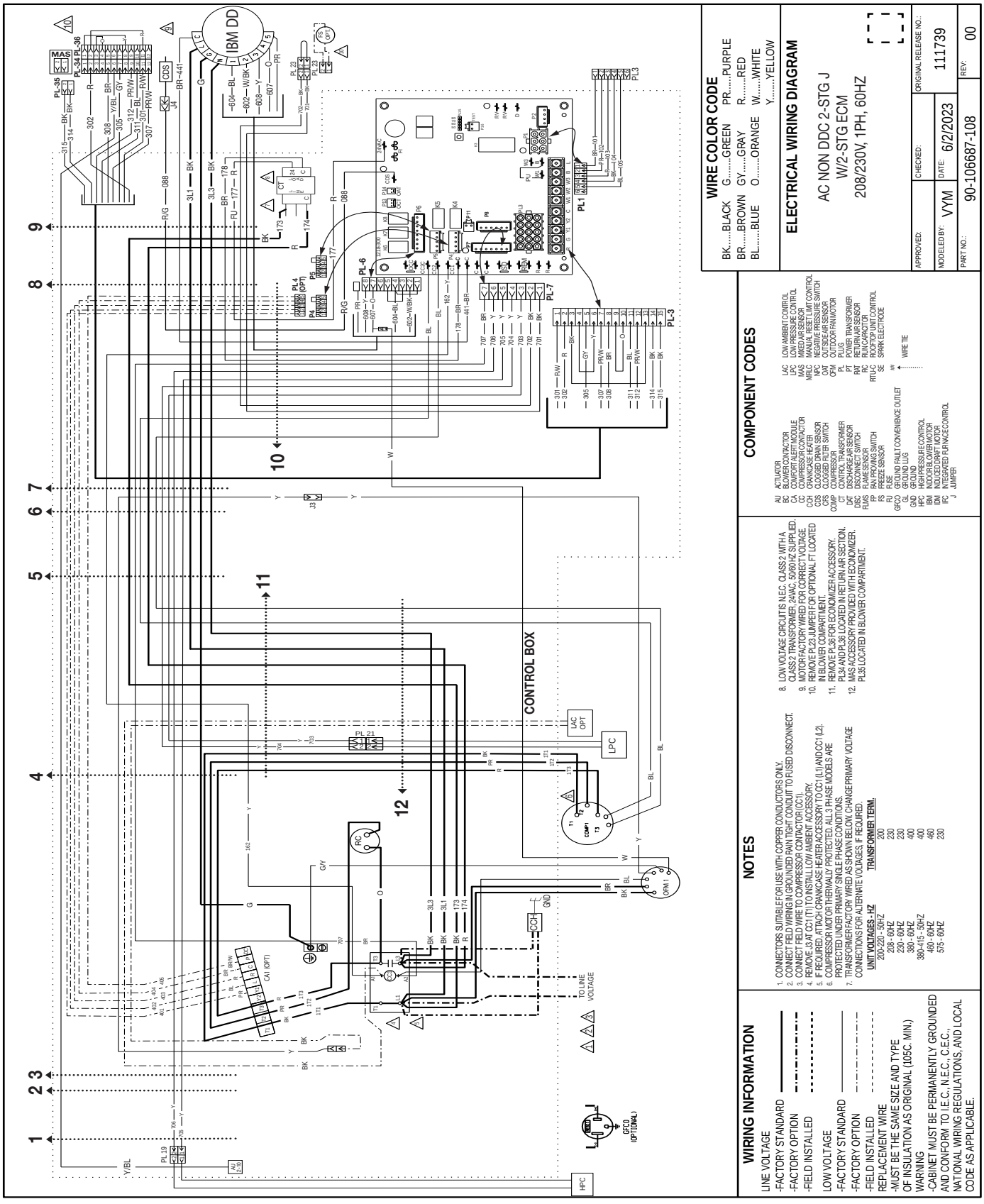

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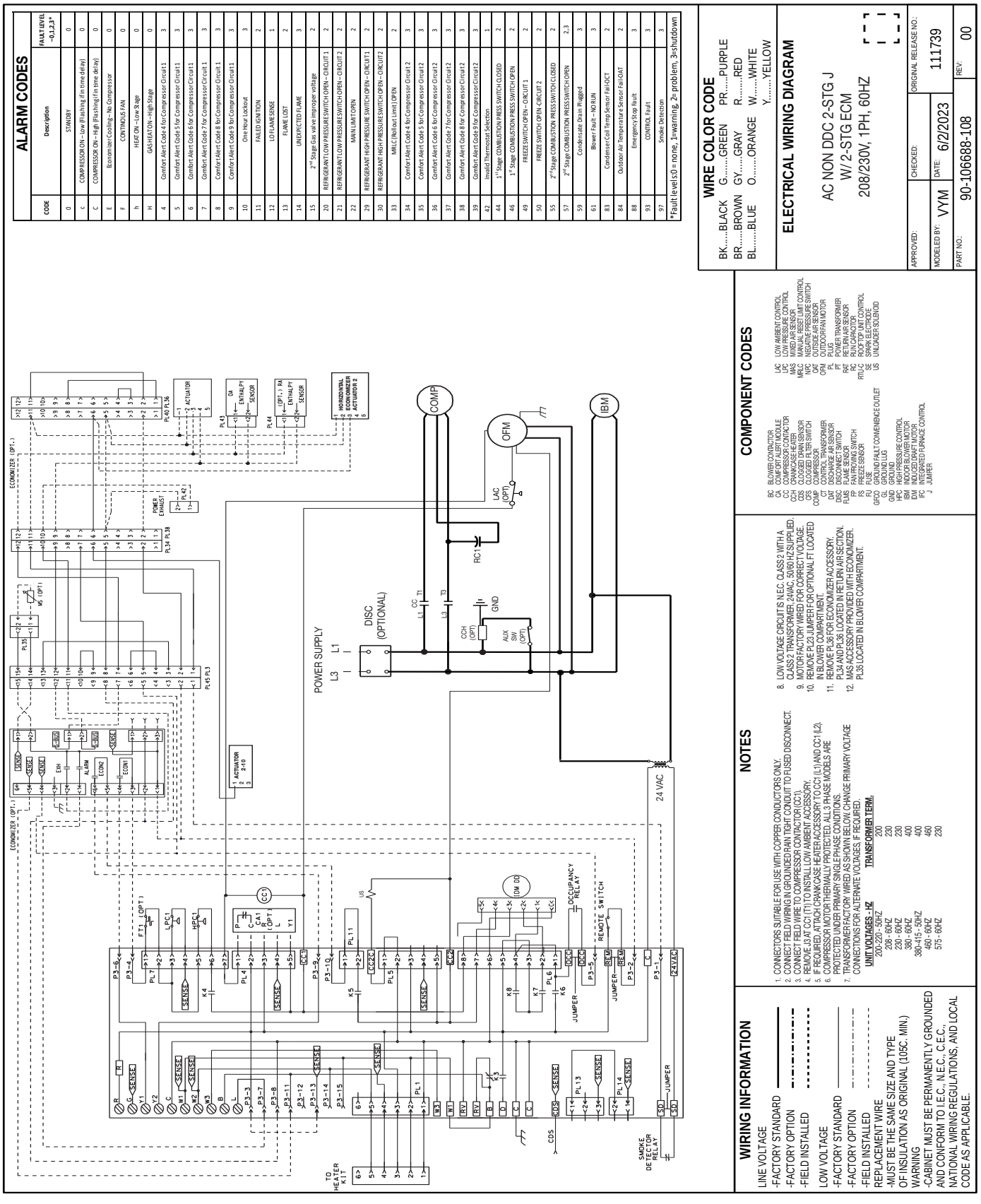
Appendix G. Wiring Diagrams & Schematics (Cont.)



ALARM CODES		
CODE	Description	FAULT LEVEL -0,1,2,3 *
0	STANDBY	0
C	COMPRESSOR ON – low (Flashing if in time delay)	0
C	COMPRESSOR ON – High (Flashing if in time delay)	0
E	Economizer Cooling – No Compressor	0
F	CONTINOUS FAN	0
h	HEAT ON – Low Stage	0
H	GAS HEAT ON – High Stage	0
4	Comfort Alert Code 4 for Compressor Circuit 1	3
5	Comfort Alert Code 5 for Compressor Circuit 1	3
6	Comfort Alert Code 6 for Compressor Circuit 1	3
7	Comfort Alert Code 7 for Compressor Circuit 1	3
8	Comfort Alert Code 8 for Compressor Circuit 1	3
9	Comfort Alert Code 9 for Compressor Circuit 1	3
10	One Hour Lockout	3
11	FAILED IGNITION	2
12	LO FLAME SENSE	1
13	FLAME LOST	2
14	UNEXPECTED FLAME	3
15	2nd Stage Gas valve improper voltage	2
20	REFRIGERANT LOW PRESSURE SWITCH OPEN – CIRCUIT 1	2
21	REFRIGERANT LOW PRESSURE SWITCH OPEN – CIRCUIT 2	2
22	MAIN LIMIT OPEN	2
29	REFRIGERANT HIGH PRESSURE SWITCH OPEN – CIRCUIT 1	2
30	REFRIGERANT HIGH PRESSURE SWITCH OPEN – CIRCUIT 2	2
33	MRLC (Rollout Limit) OPEN	2
34	Comfort Alert Code 4 for Compressor Circuit 2	3
35	Comfort Alert Code 5 for Compressor Circuit 2	3
36	Comfort Alert Code 6 for Compressor Circuit 2	3
37	Comfort Alert Code 7 for Compressor Circuit 2	3
38	Comfort Alert Code 8 for Compressor Circuit 2	3
39	Comfort Alert Code 9 for Compressor Circuit 2	3
42	Invalid Thermostat Selection	1
44	1st Stage COMBUSTION PRESS SWITCH CLOSED	2
46	1st Stage COMBUSTION PRESS SWITCH OPEN	2
49	FREEZE SWITCH OPEN – CIRCUIT 1	2
50	FREEZE SWITCH OPEN -CIRCUIT 2	2
55	2nd Stage COMBUSTION PRESS SWITCH CLOSED	2
57	2nd Stage COMBUSTION PRESS SWITCH OPEN	2,3
59	Condensate Drain Plugged	3
61	Blower Fault – NO RUN	3
83	Condenser Coil Temp Sensor Fail OCT	2
84	Outdoor Air Temperature Sensor Fail OAT	2
88	Emergency Stop Fault	3
93	CONTROL Fault	3
97	Smoke Detection	3

*Fault level s:0 = none, 1=warning, 2= problem, 3=shutdown

WIRE COLOR CODE

BK.....BLACK G.....GREEN PR.....PURPLE
BR.....BROWN GY.....GRAY R.....RED
BL.....BLUE O.....ORANGE W.....WHITE
Y.....YELLOW

ELECTRICAL WIRING DIAGRAM

AC NON DDC 2-STG J
W/ 2-STG ECM
208/230V, 1PH, 60HZ

APPROVED:	CHECKED:	ORIGINAL RELEASE NO.:
MODELED BY: VYM	DATE: 6/2/2023	111739
PART NO.: 90-106688-108		REV: 00

COMPONENT CODES

BC	BLOWER CONTACTOR	LAC	LOW AMBIENT CONTROL
CA	COMFORT ALERT MODULE	LPC	LOW PRESSURE CONTROL
CC	COMPRESSOR CONTACTOR	MAS	MIXED AIR SENSOR
CCH	CRANKCASE HEATER	MRLC	MANUAL RESET LIMIT CONTROL
CCH	CRANKCASE HEATER SENSOR	NPC	NEGATIVE PRESSURE SWITCH
CFS	CLOGGED FILTER SWITCH	OAT	OUTSIDE AIR SENSOR
COMP	COMPRESSOR	OFM	OUTDOOR FAN MOTOR
CT	CONTROL TRANSFORMER	PL	PLUG
DISC	DISCONNECT SWITCH	PT	POWER TRANSFORMER
DSC	DISCHARGE AIR SENSOR	RAT	RETURN AIR SENSOR
FLMS	FLAME SENSOR	RC	RUN CAPACITOR
FP	FAN PROVING SWITCH	RTCC	ROOM TEMPERATURE CONTROL
FS	FREEZE SENSOR	SPARK	SPARK ELECTRODE
FU	FUSE	US	UNLOADER SOLENOID
GFCO	GROUND FAULT CONVENIENCE OUTLET		
GL	GROUND LUG		
GND	GROUND		
HPC	HIGH PRESSURE CONTROL		
IBM	INDOOR BLOWER MOTOR		
IDM	INDUCED DRAFT MOTOR		
IFC	INTEGRATED FURNACE CONTROL		
J	JUMPER		

NOTES

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. CONNECT FIELD WIRING IN GROUNDED PAN TIGHT CONDUIT TO FUSED DISCONNECT.
3. CONNECT FIELD WIRE TO COMPRESSOR CONTACTOR (CC1).
4. REMOVE J3 AT CC1 (T1) TO INSTALL LOW AMBIENT ACCESSORY.
5. IF REQUIRED, ATTACH CRANKCASE HEATER ACCESSORY TO CC1 (L1) AND CC1 (L2).
6. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
7. TRANSFORMER-FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTIONS FOR ALTERNATE VOLTAGES, IF REQUIRED.

UNIT VOLTAGES - HZ	TRANSFORMER TERM.
200-220 - 50HZ	200
208 - 60HZ	230
230 - 60HZ	230
380 - 60HZ	400
380-415 - 50HZ	400
460 - 60HZ	460
575 - 60HZ	230

8. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER. 24 VAC, 50/60 HZ SUPPLIED.
9. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
10. REMOVE PL23 JUMPER FOR OPTIONAL FT LOCATED IN BLOWER COMPARTMENT.
11. REMOVE PL36 FOR ECONOMIZER ACCESSORY. PL34 AND PL36 LOCATED IN RETURN AIR SECTION.
12. MAS ACCESSORY PROVIDED WITH ECONOMIZER. PL35 LOCATED IN BLOWER COMPARTMENT.

WIRING INFORMATION

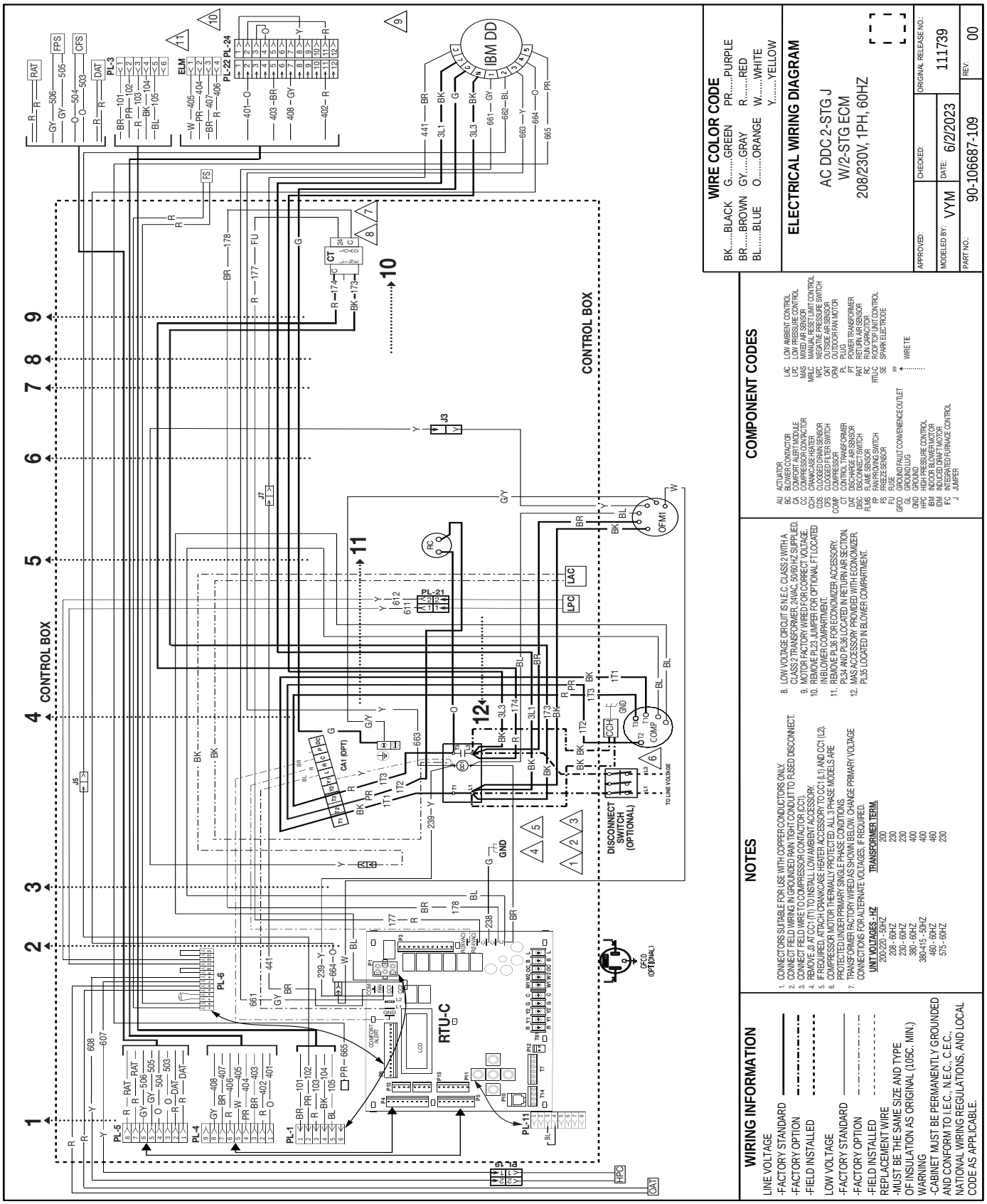
LINE VOLTAGE
-FACTORY STANDARD ——————
-FACTORY OPTION -.-.-.-.-.-
-FIELD INSTALLED - - - - - -

LOW VOLTAGE
-FACTORY STANDARD ——————
-FACTORY OPTION -.-.-.-.-.-
-FIELD INSTALLED - - - - - -

REPLACEMENT WIRE
-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105C. MIN.)

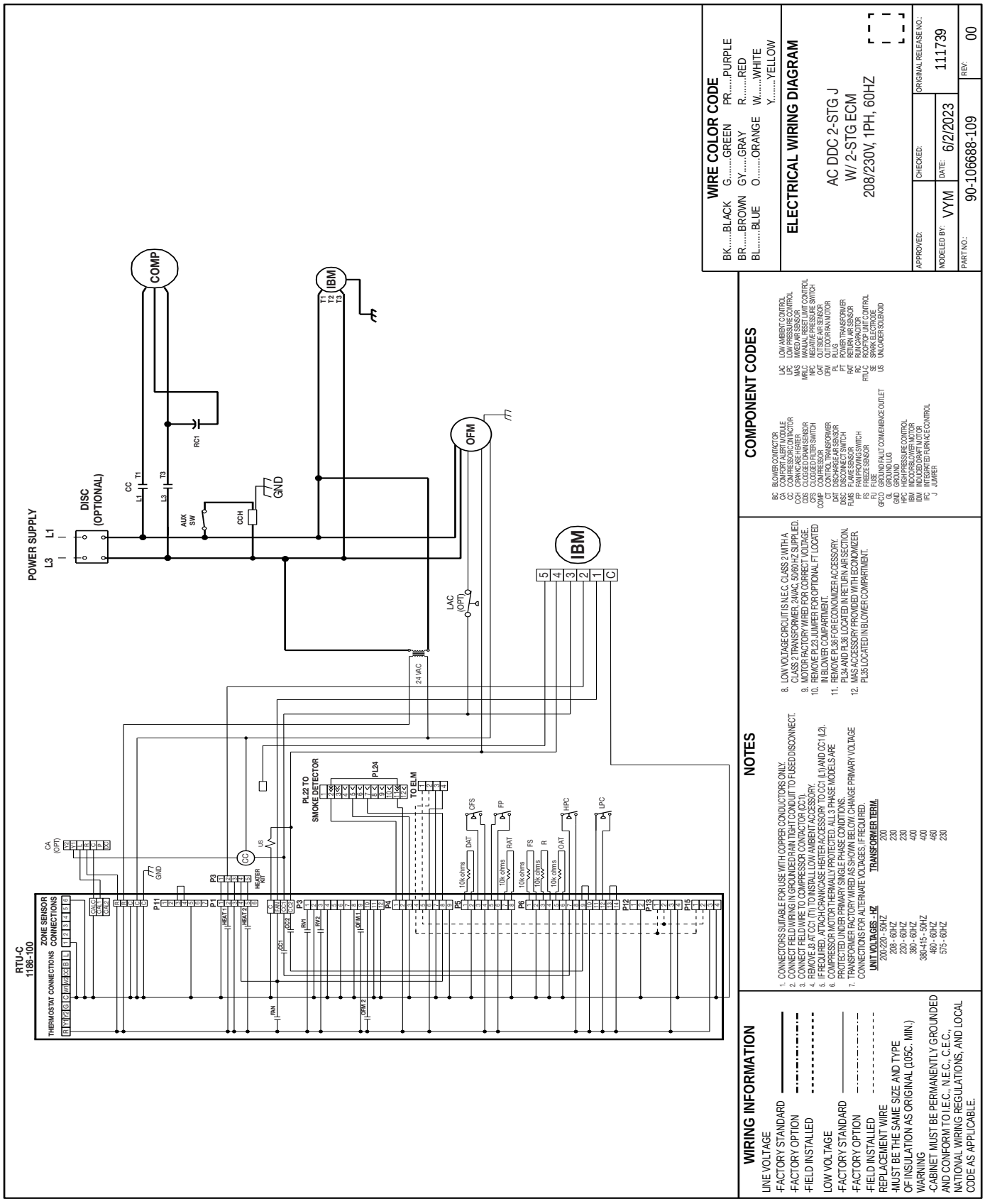
WARNING
-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., NATIONAL WIRING REGULATIONS, AND LOCAL CODE AS APPLICABLE.

Appendix G. Wiring Diagrams & Schematics (Cont.)

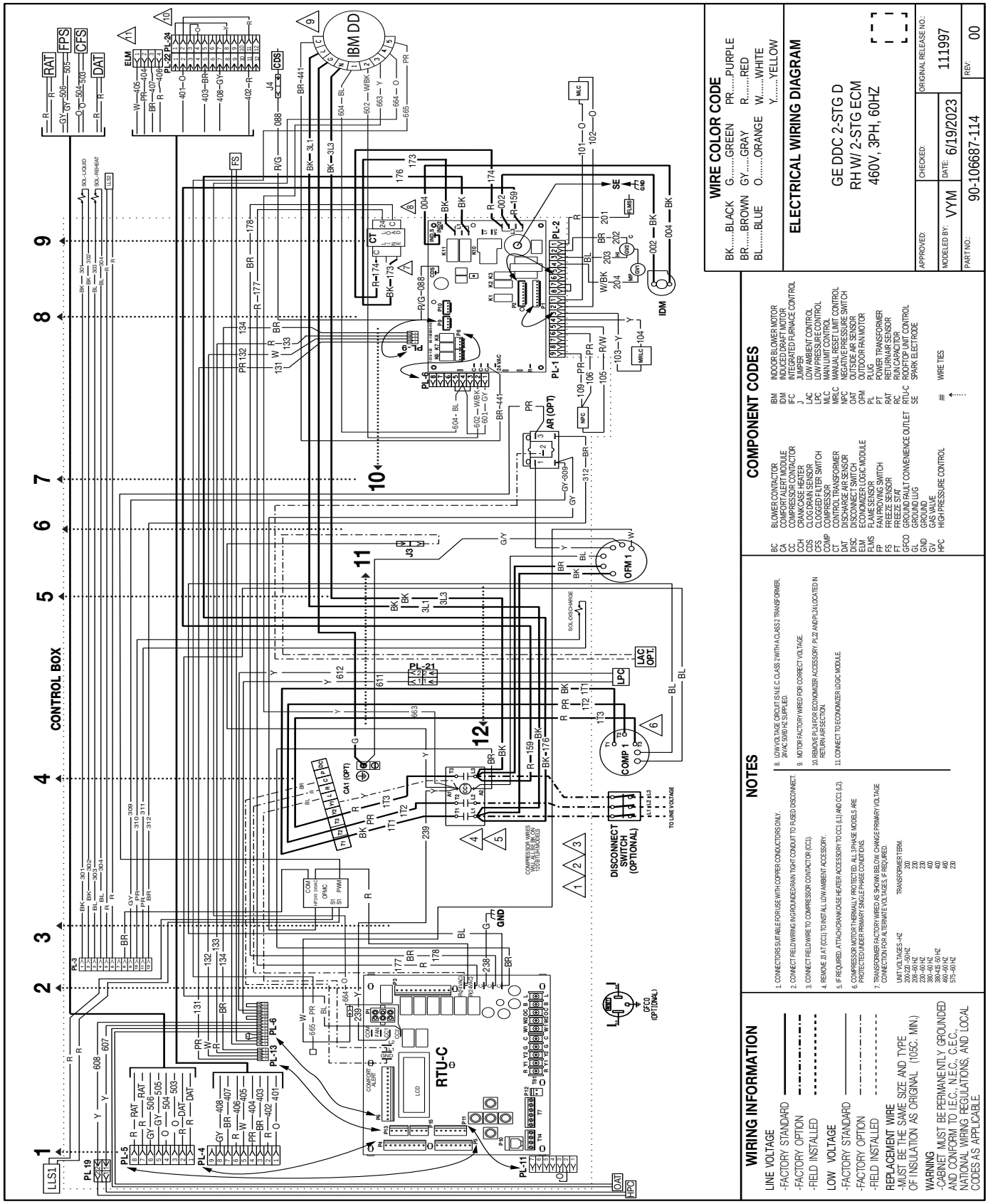


P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)

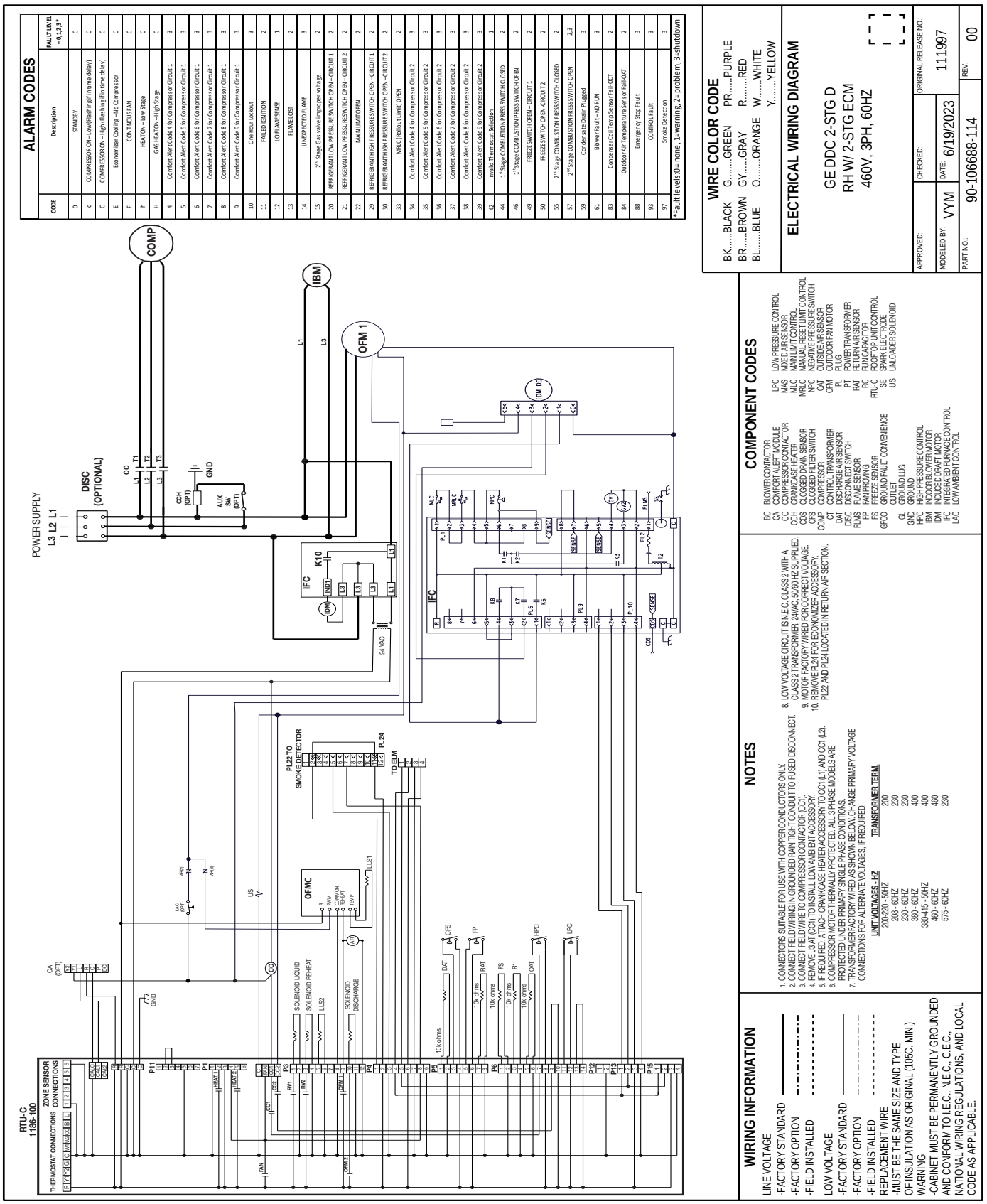


Appendix G. Wiring Diagrams & Schematics (Cont.)



P. APPENDICES

Appendix G. Wiring Diagrams & Schematics (Cont.)



J. Unit Tie-Down

ENGINEERING EXPRESS
160 SW 12TH AVE SUITE 106, DEERFIELD BEACH, FL 33442
(954) 354-0660 | ENGINEERINGEXPRESS.COM

Technical Evaluation Report

DIVISION: 23 08 00–COMMISSIONING OF HVAC

FL 26981.1
THIS DOCUMENT CONTAINS (5) PAGES

EVALUATION SUBJECT: RHEEM PACKAGED UNITS 17-4893

REPORT HOLDER:
RHEEM MANUFACTURING COMPANY, INC.
1100 ABERNATHY ROAD SUITE 1400
ATLANTA, GA, USA
770-351-3000 | RHEEM.COM

SCOPE OF EVALUATION (compliance with the following codes):

THIS IS A STRUCTURAL (WIND) PERFORMANCE EVALUATION ONLY. NO ELECTRICAL OR TEMPERATURE PERFORMANCE RATINGS OR CERTIFICATIONS ARE OFFERED OR IMPLIED HEREIN.

This Product Evaluation Report is being issued in accordance with the requirements of the **Florida Building Code Sixth Edition (2017)** per FBC Section 104.11, FMC 301.15, FBC Building Ch. 16, ASCE-7-10, FBC Existing Building sections 707.1, 707.2, FBC Building 1522.2, FBC Residential M1202.1, M1301.1, & FS 471.025. The product noted on this report has been tested and evaluated as summarized herein.

SUBSTANTIATING DATA:

• Product Evaluation Documents Test Reports
Substantiating documentation has been submitted to provide this TER and is summarized in the sections below.
Test Report: 0320.01-18 (American Test Lab of South FL)

• Structural Engineering Calculations
Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

- Maximum allowable uplift, sliding, & overturning moment for ground and roof applications
- Maximum unit anchorage to steel curb

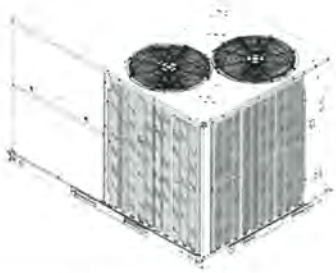
NOTE: No 33% increase in allowable stress has been used in the design of this product.

INSTALLATION:
The product(s) listed above shall be installed in strict compliance with this product evaluation & manufacturer-provided model specifications.
The product components shall be of the material specified in the manufacturer-provided product specifications. All screws must be installed in accordance with the applicable provisions & anchor manufacturer's published installation instructions.

LIMITATIONS & CONDITIONS OF USE:
Use of this product shall be in strict accordance with this product evaluation as noted herein. The supporting host structure shall be designed to resist all superimposed loads as determined by others on a site-specific basis as may be required by the Authority Having Jurisdiction. Host structure conditions which are not accounted for in this product's respective anchor schedule shall be designed for on a site-specific basis by a registered professional engineer. No evaluation is offered for the host supporting structure by use of this document; Adjustment factors noted herein and the applicable codes must be considered, where applicable.
All supporting components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times.

OPTIONS:
This evaluation is valid for models shown in the last page

FINISH:
Baked Enamel



NOTE: GRAPHICAL DEPICTIONS IN THIS REPORT ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY DIFFER IN APPEARANCE

UNIT CASING MATERIAL:
20ga galv. sheet steel ASTM A653 Type B.
Removable Top & side covers secured with #10 Sheet metal Hex Head Screws
Knockouts provided for utility & control connections.

INSTALLATION:
Shall follow manufacturer specifications as well as information provided herein

STRUCTURAL PERFORMANCE:
Models referenced herein are subject to the following design limitations:
ASCE-710 Exposure Categories C & D (HVHZ)
Maximum Mean Roof Height (MRH) = 400ft
Up to and including 175mph (Vult) for the following Design Pressures:

Maximum Rated Wind Pressure:

200psf Lateral 133psf Uplift (ASD)

Site specific wind analysis may produce alternate limitations provided maximum rated wind pressure is not exceeded.

For more information and deviations to this evaluation visit ecalc.io/197799 or scan the QR code
ECALC.IO/197799

FRANK L. BENNARDO ★ PROFESSIONAL ENGINEER ★ STATE OF FLORIDA

Engineer Signature & Seal:
LICENSE NO. PE0046549
February 12, 2020

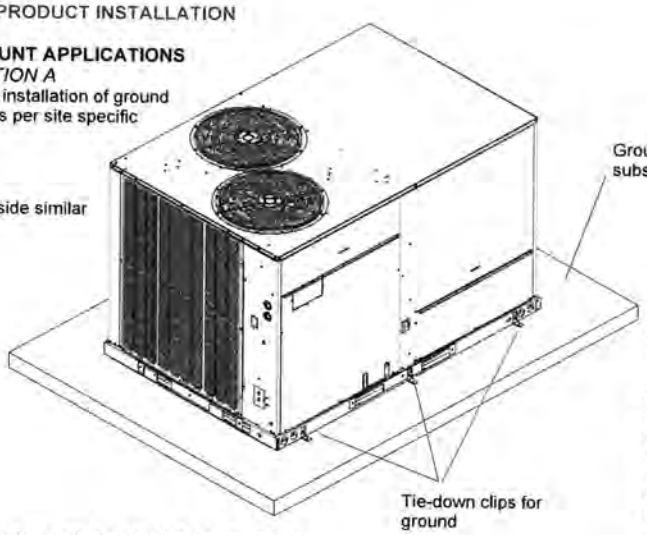
Frank L. Bennardo, P.E., SECB
ENGINEERING EXPRESS®
PE #0046549 CA #9885

P. APPENDICES

J. Unit Tie-Down

SECTION 2 PRODUCT INSTALLATION

GROUND MOUNT APPLICATIONS
CONFIGURATION A
Note: Design & installation of ground host is by others per site specific conditions



TIE-DOWN CLIP
(GROUND APPLICATION)

Miami Tech CUTD 1" wide ASTM A653 galvanized steel 0.07" thick of varying length (FL19731.2) or *equivalent* for all cabinets tied down to a ground structure; fasten clip to structure using anchor from Anchor Schedule A to Host Structure Table and (3) #12 SAE Gr 2 self-drilling screw to fasten clip to unit base rail. Install in unit with quantities shown ((3) per side). Locate clips at 8.5" min away from the appropriate corner using three clips per side and three clips opposite side in the same configuration.

ANCHOR SCHEDULE TO HOST STRUCTURE

Pressure Lateral (Uplift) (psf)	Concrete	Steel Curb With Clip	Steel Curb Screw
Ground	A	-	-
Up to 81 (64)	-	-	C
Up to 200 (133)	-	B	-

A. – 5/16" ELCO ULTRACON Anchor embedded 2" in 3,515 psi concrete. 3 1/8" from edge minimum & 5" spacing minimum. NOA No. 17-1227.22

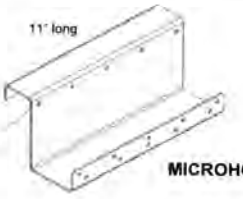
B. – #12 TEK Screws. (14) screws per clip. (5) top front side, (4) top back side and (5) bottom front side.

C. – 3/8" SAE Grade 5 Self-Drilling Screw at 6" O.C. (15) per long side and (10) per short side.

STEEL CURB
(ROOF APPLICATION)

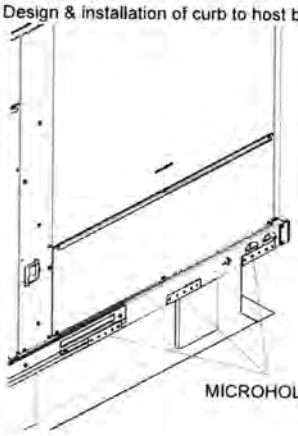
Steel curb to be a minimum of 16ga ASTM A653 steel

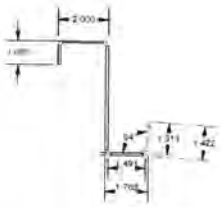
Curb Clip to be 14ga ASTM A653 steel min (Microhold)



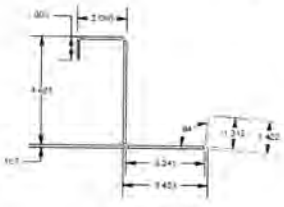
MICROHOLDS

CURB MOUNT APPLICATIONS
CONFIGURATION B
Note: Design & installation of curb to host by others per site specific conditions





Curb Clip A



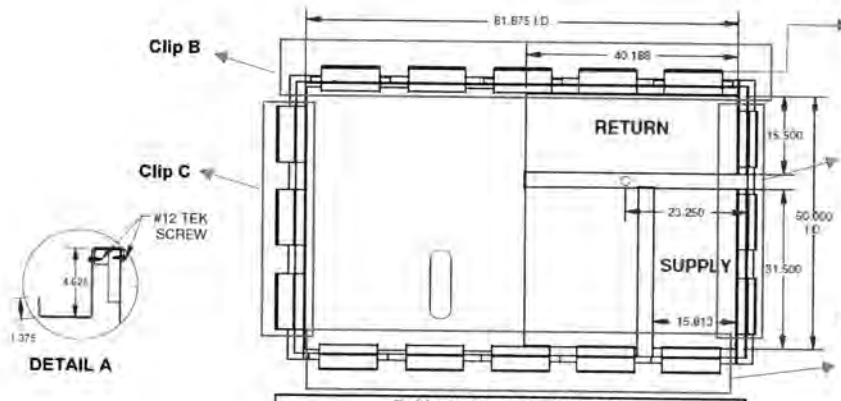
Curb Clip C

Curb Clip B

IN ALL CONDITIONS IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO ENSURE THE HOST STRUCTURE IS CAPABLE OF WITHSTANDING FORCES BY SITE-SPECIFIC DESIGN. NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS OFFERED BY RHEEM MANUFACTURING COMPANY, OR ENGINEERING EXPRESS AS TO THE INTEGRITY OF THE HOST STRUCTURE TO CARRY LOADS INCURRED BY THIS UNIT.

J. Unit Tie-Down

CURB CLIP LOCATION



DETAIL A:
Applies for all clips and anchors type B

RGEDZR – 150 Clip Configuration:
(5) clips to each long side, 3" away from corners, spaced at 5.22".

(3) clips to each short side, 3" away from corners. Spaced at 5.50"

See note (3) page (4)

Table 1: Clip Curb Schedule

Unit Model			Number of Clips (Pcs)
(-)GEC - 036	(-)ACC - 036	(-)HPC - 036	4 LS - 2 SS
(-)GEC - 048	(-)ACC - 048	(-)HPC - 048	4 LS - 2 SS
(-)GEC - 060	(-)ACC - 060	(-)HPC - 060	4 LS - 2 SS
(-)GEC - 072	(-)ACC - 072	(-)HPC - 072	4 LS - 2 SS
(-)GED - 090	(-)ACD - 090	(-)HPD - 090	5 LS - 3 SS
(-)GED - 102	(-)ACD - 102	(-)HPD - 102	5 LS - 3 SS
(-)GED - 120	(-)ACD - 120	(-)HPD - 120	5 LS - 3 SS
(-)GED - 150	(-)ACD - 150		5 LS - 3 SS

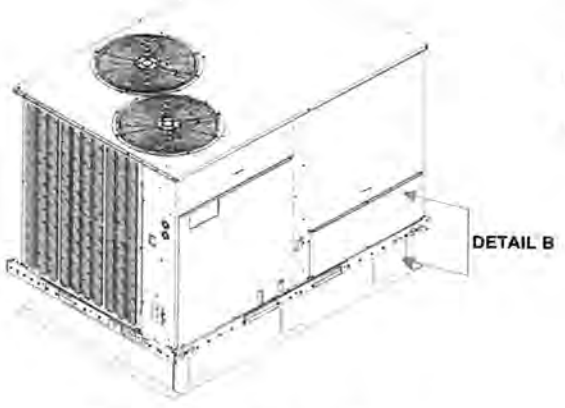
#Clip Designation (5 LS= 5 clips each Long Side; 3 SS= 3 clips each Short Side) equally spaced

Unit Model Note: '(-)' designates equivalent trade brands with similar cabinetry and may vary depending on brand

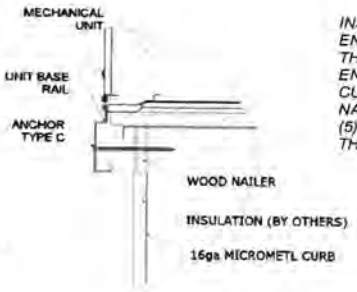
See pressures on page (2) for alternative anchor limitations

ALTERNATIVE ANCHORAGE TO CURB

STEEL CURB WITH SCREW
CONFIGURATION C



Mechanical Unit Curb Mounted



INSTALLER TO ENSURE THAT THREADED PORTION ENGAGES STEEL CURB BEYOND WOOD NAILER WITH MINIMUM (5) PITCHES PAST THE THREAD PLANE

DETAIL B

P. APPENDICES

J. Unit Tie-Down

SECTION 3 MODELS SUMMARY, DIMENSION & NOTES

TABLE 2: Qualified Tested Unit Construction Metal Cabinetry				
Unit Model	Operating Dimensions w/ screw heads			Operating Weight (lbs)
	Width (in)	Length (in)	Height (in)	
RGEDZR - 150	59 1/2	90 1/10	59 7/10	1070

TESTED UNIT LIMITATIONS

1. The unit model listed above was tested and designed as worst-case configurations of model units listed in *Evaluation Model Series Matrix*, remaining unit models are certified by this approval as long as they have identical construction as those listed above and are of equal or lesser dimensions (length, width, height).
2. Dimensions shown are measured from outermost points of unit, including screw heads.
3. Curb clips shall be as close as possible from the shown locations; installers shall verify any interference between clip attachment and internal components of the unit and move clip within the tolerance allowed.

REQUIRED WIND PRESSURES

Design pressures calculated for use with these units shall be determined by others on a job-specific basis in accordance with the governing code. Site specific load requirements for wind load shall be determined in accordance with ASCE 7 and the codes referenced herein by separate engineering certification and shall be less or equal to design pressures capacity values listed herein for any assembly as shown.

TEST REPORTS UTILIZED

Design and certification of the unit cabinetry is approved through *American Test Lab of South Florida*
Report #: 0320.01-18
Tested according ASTM E330-05 and TAS 202-94.

TABLE 3: Evaluation Model Sereis Matrix (Unit Construction Metal Cabinetry)				
Unit Model	Operating Dimensions w/ screw heads			Operating Weight (lbs)
	Width (in)	Length (in)	Height (in)	
(-)ACC - 036	46 3/4	78 3/8	41 3/8	453
(-)ACC - 048	46 3/4	78 3/8	41 3/8	477
(-)ACC - 060	46 3/4	78 3/8	41 3/8	482
(-)ACC - 072	46 3/4	78 3/8	41 3/8	689
(-)ACD - 090	59 15/32	89 5/16	49 1/4	722
(-)ACD - 102	59 15/32	89 5/16	49 1/4	748
(-)ACD - 120	59 15/32	89 5/16	49 1/4	777
(-)ACD - 150	59 1/2	90 1/10	59 7/10	946

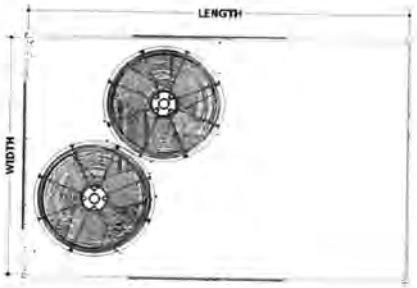
TABLE 3.1: Evaluation Model Sereis Matrix (Unit Construction Metal Cabinetry)				
Unit Model	Operating Dimensions w/ screw heads			Operating Weight (lbs)
	Width (in)	Length (in)	Height (in)	
(-)GEC - 036	46 3/4	78 3/8	41 3/8	453
(-)GEC - 048	46 3/4	78 3/8	41 3/8	477
(-)GEC - 060	46 3/4	78 3/8	41 3/8	482
(-)GEC - 072	46 3/4	78 3/8	41 3/8	689
(-)GED - 090	59 15/32	89 5/16	49 1/4	846
(-)GED - 102	59 15/32	89 5/16	49 1/4	872
(-)GED - 120	59 15/32	89 5/16	49 1/4	901

TABLE 3.2: Evaluation Model Series Matrix (Unit Construction Metal Cabinetry)				
Unit Model	Operating Dimensions w/ screw heads			Operating Weight (lbs)
	Width (in)	Length (in)	Height (in)	
(-)HPC - 036	78 3/8	46 3/4	41 3/8	528
(-)HPC - 048	78 3/8	46 3/4	41 3/8	551
(-)HPC - 060	78 3/8	46 3/4	41 3/8	553
(-)HPC - 072	78 3/8	46 3/4	41 3/8	553
(-)HPD - 090	89 5/16	59 1/2	49 1/4	786
(-)HPD - 102	89 5/16	59 1/2	49 1/4	822
(-)HPD - 120	89 5/16	59 1/2	59 7/10	874

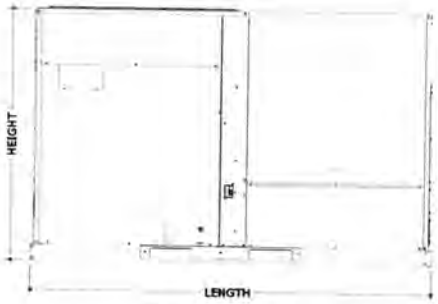
Unit Model Note: '(-)' designates equivalent trade brands with similar cabinetry and may vary depending on brand

J. Unit Tie-Down

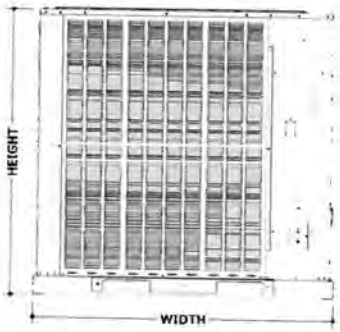
UNIT VIEWS & ELEVATIONS



TOP VIEW



ELEVATION VIEW



SIDE VIEW

Note: RGEDZR-150 illustration selected for dimensional purposes

R. INFORMATION FOR THE OWNER

R.1. Information for the Owner: Maintenance and service

For routine maintenance, general diagnostics for cooling and heating, and other generalized information regarding filter changing, cleaning the condensate pan, cleaning the coils, and general inspections, refer to the included User's Information Manual for the owner.

Manufacturer Part number: 92-106692-01

R.2. Product Model and Serial Number

The product model and serial number are both located on the rating plate found on the supply/ return panel of the unit. Refer to section ***B.1. Model Number*** for the breakdown of each character in the model number.

S. INSTALLATION CHECK LIST AND JOB SITE SHEET

Commercial Job Site Information

Site Information and Application Details:

Business Name : _____
Address : _____
City : _____ State : _____ Zip : _____
Site Contact : _____
Phone : _____ Mobile : _____
Email : _____

Model Number : _____
(Please include all letters and digits of the model number)
Serial Number : _____
(Please include all letters and digits of the serial number)
Date of Install : _____
(When was the unit installed, month, day, and year)

Dealer/Contractor Information:

Business Name : _____
Address : _____
City : _____ State : _____ Zip : _____
Site Contact : _____
Phone : _____ Mobile : _____
Email : _____

Technician Name : _____
Visit Date: _____
Technician Name : _____
Visit Date: _____
Technician Name : _____
Visit Date: _____

Distributor and Support Details:

Distributor Name : _____
City : _____ State : _____

Rep Name : _____
Visit Date: _____

Unit Setup and Operational Information

Voltage and Amperage Information :

Line Voltage Measurements :

Base Voltage : 208 240 460 (Circle one) Phase : 1 3 (Circle one)
Measured Line Voltage :
Phase A to B : _____ Phase A to Ground : _____
Phase B to C : _____ Phase B to Ground : _____
Phase C to A : _____ Phase C to Ground : _____
Breaker Size : _____ Conductor Size: _____

24VAC Low Voltage Measurements :

Transformer Tap : 208 240 460 (Circle one)
24VAC Measured Voltage : R to C : _____
24VAC Measured Amp Load :
Transformer Load: _____
T-stat Load: _____

Amperage and Power Measurements :

	Full Running Load	Blower	Compressor 1	Compressor 2	Outdoor Fans
Phase A :					
Phase B :					
Phase C :					

Refrigerant Circuit Information :

Circuit 1 :

Suction Line	Liquid Line
Pressure (PSI) :	Pressure (PSI) :
Temperature (°F) :	Temperature (°F) :
Superheat (°F) :	Sub-cooling (°F) :

Circuit 2 :

Suction Line	Liquid Line
Pressure (PSI) :	Pressure (PSI) :
Temperature (°F) :	Temperature (°F) :
Sub-cooling (°F) :	Sub-cooling (°F) :

Outdoor Air Temperature (°F) : _____ Return Air Temperature (°F) : _____ Supply Air Temperature (°F) : _____
Outdoor Air Wet Bulb (°F) : _____ Return Air Wet Bulb (°F) : _____ Supply Air Wet Bulb (°F) : _____

S. INSTALLATION CHECK LIST AND JOB SITE SHEET

Commercial Job Site Information

Site Information and Application Details:

Business Name : _____
Address : _____
City : _____ State : _____ Zip : _____
Site Contact : _____
Phone : _____ Mobile : _____
Email : _____

Model Number : _____
(Please include all letters and digits of the model number)
Serial Number : _____
(Please include all letters and digits of the serial number)
Date of Install : _____
(When was the unit installed, month, day, and year)

Dealer/Contractor Information:

Business Name : _____
Address : _____
City : _____ State : _____ Zip : _____
Site Contact : _____
Phone : _____ Mobile : _____
Email : _____

Technician Name : _____
Visit Date: _____
Technician Name : _____
Visit Date: _____
Technician Name : _____
Visit Date: _____

Distributor and Support Details:

Distributor Name : _____
City : _____ State : _____

Rep Name : _____
Visit Date: _____

Unit Setup and Operational Information

Voltage and Amperage Information :

Line Voltage Measurements :

Base Voltage : 208 240 460 (Circle one) Phase : 1 3 (Circle one)

Measured Line Voltage :

Phase A to B : _____ Phase A to Ground : _____
Phase B to C : _____ Phase B to Ground : _____
Phase C to A : _____ Phase C to Ground : _____
Breaker Size : _____ Conductor Size: _____

24VAC Low Voltage Measurements :

Transformer Tap : 208 240 460 (Circle one)

24VAC Measured Voltage : R to C : _____
24VAC Measured Amp Load :
Transformer Load: _____
T-stat Load: _____

Amperage and Power Measurements :

	Full Running Load	Blower	Compressor 1	Compressor 2	Outdoor Fans
Phase A :					
Phase B :					
Phase C :					

Refrigerant Circuit Information :

Circuit 1 :

Suction Line		Liquid Line	
Pressure (PSI) :		Pressure (PSI) :	
Temperature (°F) :		Temperature (°F) :	
Superheat (°F) :		Sub-cooling (°F) :	

Circuit 2 :

Suction Line		Liquid Line	
Pressure (PSI) :		Pressure (PSI) :	
Temperature (°F) :		Temperature (°F) :	
Sub-cooling (°F) :		Sub-cooling (°F) :	

Outdoor Air Temperature (°F) : _____ Return Air Temperature (°F) : _____ Supply Air Temperature (°F) : _____
Outdoor Air Wet Bulb (°F) : _____ Return Air Wet Bulb (°F) : _____ Supply Air Wet Bulb (°F) : _____