# INSTALLATION INSTRUCTIONS

## PACKAGE AIR CONDITIONER

## RLRL-C & RLRL-H SERIES 15 & 20 TON [52.8 & 70.3 kW]

### RLRL-C: ASHRAE 90.1 2007 COMPLIANT, WITH CLEAR CONTROL

### RLRL-H: ASHRAE 90.1 2010 COMPLIANT, WITH CLEAR CONTROL & VFD



15 TON SHOWN

**RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!**

**⚠ WARNING**

**THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED, LICENSED 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, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.**

AHRI CERTIFIED™ www.ahridirectory.org
Unitary Large AC
AHRI Standard 340/360
Certification applies only when the complete system is listed with AHRI.

c UL us LISTED

Accredited by the RvA
ABS Quality Evaluations, Inc. Management System Certification
ANAB ACCREDITED
ISO 9001:2008
Certificate Number: 30164

**DO NOT DESTROY THIS MANUAL**

**PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN**

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## ⚠ WARNING

**PROPOSITION 65: THIS APPLIANCE CONTAINS FIBERGLASS INSULATION. RESPIRABLE PARTICLES OF FIBERGLASS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.**

## ⚠ 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.**

# II. INTRODUCTION

This booklet contains the installation and operating instructions for your air conditioner. There are a few precautions that should be taken to derive maximum satisfaction from it. 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.

# III. CHECKING PRODUCT RECEIVED

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. Check the unit model number, heating size, electrical characteristics, and accessories to determine if they are correct.

# IV. EQUIPMENT PROTECTION FROM THE ENVIRONMENT

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, sulphur 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, special attention should be given to the equipment location and exposure.**

1. Avoid having lawn sprinkler heads spray direction on the unit cabinet.
2. In coastal areas, locate the unit on the side of the building away from the waterfront.
3. Shielding provided by a fence or shrubs may give some protection.

**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 a good automobile polish will provide some protection.
3. A good liquid cleaner may be used several times a year to remove matter that will not wash off with water.

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.**

# V. SPECIFICATIONS

## A. GENERAL

The Packaged Air Conditioner is available without heat or with 20, 40, 60 or 75 kW electric heat. Cooling capacities of 15 and 20 nominal tons of cooling are available. Units are convertible from bottom supply and return to horizontal supply and return by relocation of supply and return air access panels. See cover installation detail.

The units are weatherized for mounting outside of the building.

The information on the rating plate is in compliance with the FTC and DOE rating for single phase units. The following information is for three phase units which **are not** covered under the DOE certification program.

1. The efficiency rating of this unit is a product thermal efficiency rating determined under continuous operating conditions independent of any installed system.

## B. MAJOR COMPONENTS

The unit includes a hermetically-sealed refrigerating system (consisting of compressors, condenser coil, evaporator coil with thermal expansion valves), a circulation air blower, condenser fans, 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.

## C. R-410A REFRIGERANT

All units are factory charged with R-410A refrigerant.

1. Specification of R-410A:

**Application:** **R-410A is not a drop-in replacement for R-22;** equipment designs must accommodate its higher pressures. It cannot be retrofitted into R-22 units.

**Pressure: The pressure of R-410A is approximately 60% (1.6 times) greater than R-22.** Recovery and recycle equipment, pumps, hoses and the like need to have design pressure ratings appropriate for R-410A. *Manifold sets need to range up to 800 psig high-side and 250 psig low-side with a 550 psig low-side retard. Hoses need to have a service pressure rating of 800 psig. Recovery cylinders need to have a 400 psig service pressure rating.* DOT 4BA400 or DOT BW400.

**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.

2. Quick Reference Guide For R-410A

- R-410A refrigerant operates at approximately 60% higher pressure (1.6 times) than R-22. 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. Prior to March 1999, R-410A refrigerant cylinders had a dip tube. These cylinders should be kept upright for equipment charging. Post March 1999 cylinders do not have a dip tube and should be inverted to ensure liquid charging of the equipment.
- 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.

3. Evaporator Coil / TXV

The thermostatic expansion valve is specifically designed to operate with R-410A. **DO NOT use an R-22 TXV. The existing evaporator must be replaced with the factory specified TXV evaporator specifically designed for R-410A.**

4. Tools Required For Installing & 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

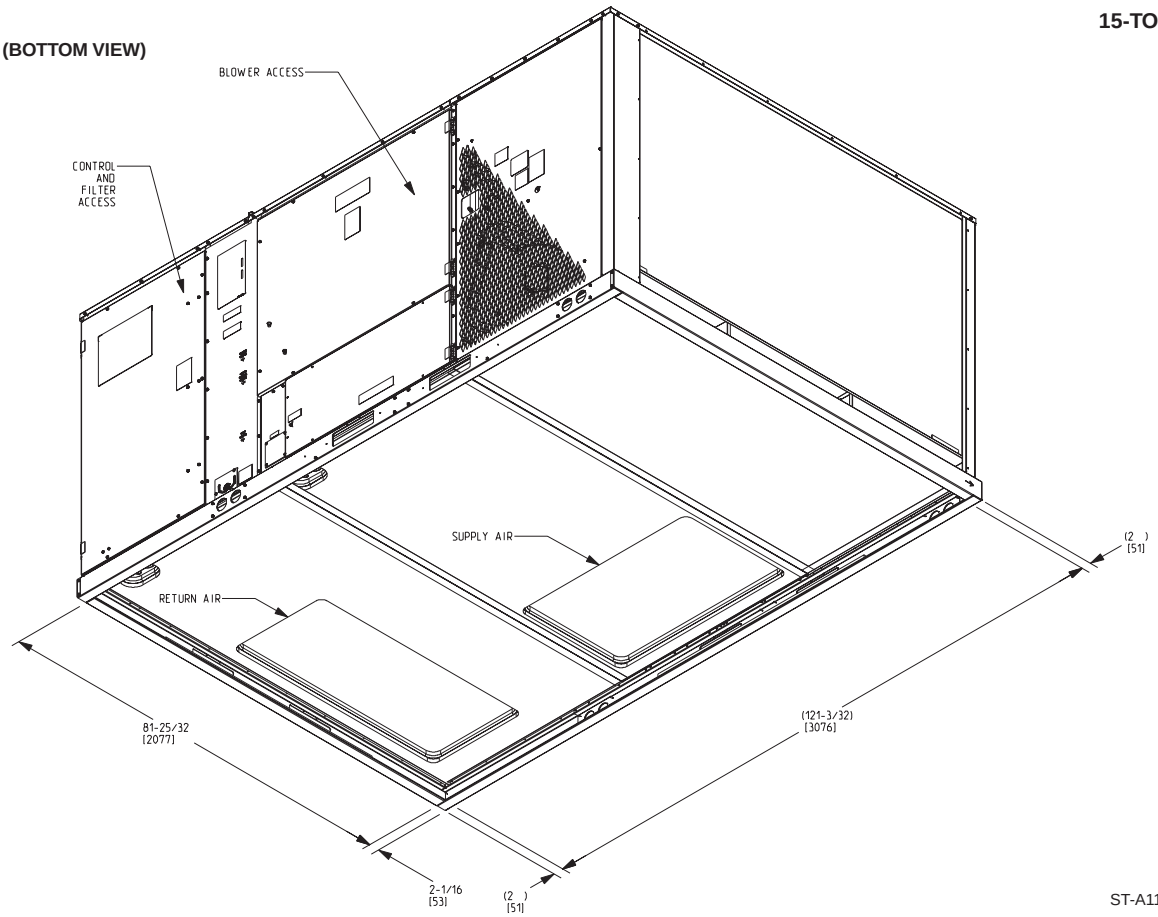
Recovery Cylinders:
-400 PSIG Pressure Rating
-Dept. of Transportation 4BA400 or BW400

**⚠ 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.

**FIGURE 1**
**UNIT DIMENSIONS (BOTTOM VIEW)**

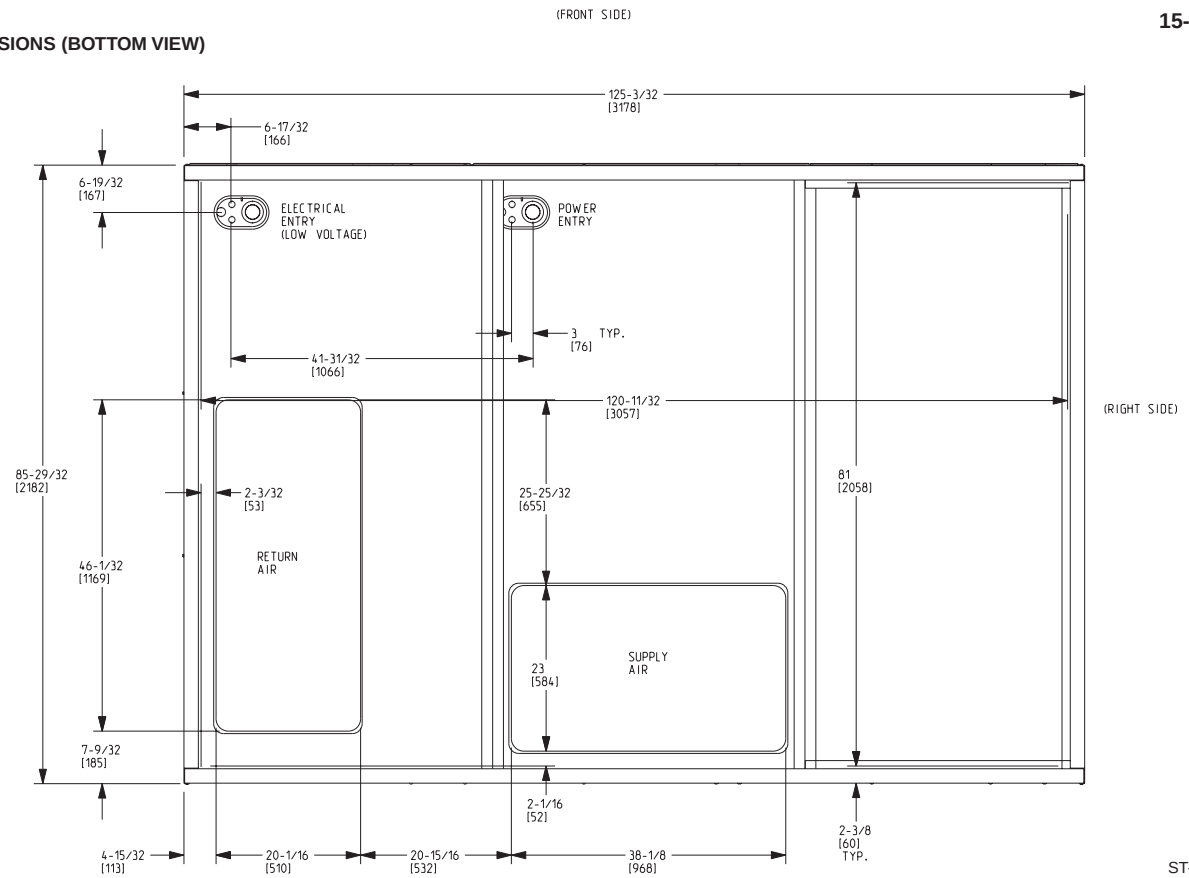
**15-TON**




ST-A1182-02B-00

**FIGURE 2**
**UNIT DIMENSIONS (BOTTOM VIEW)**

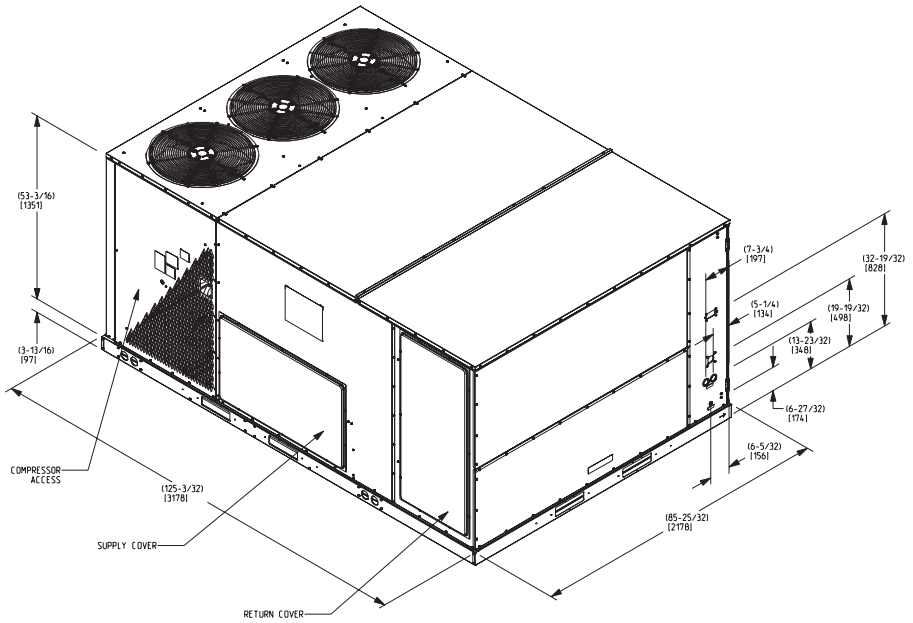
**15-TON**




ST-A1182-09B-00

**FIGURE 3**
**UNIT DIMENSIONS**

**15-TON**

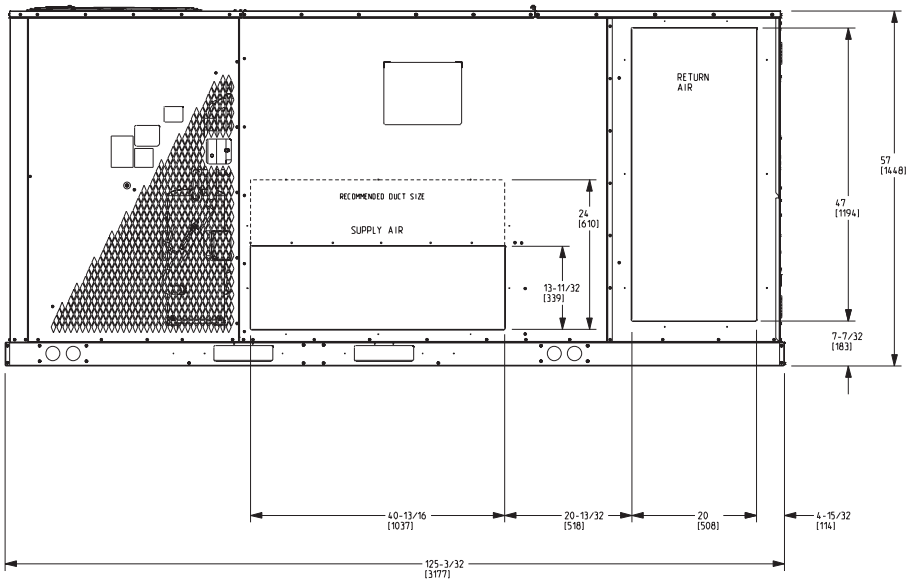



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**FIGURE 4**
**UNIT DIMENSIONS**

**REAR VIEW**

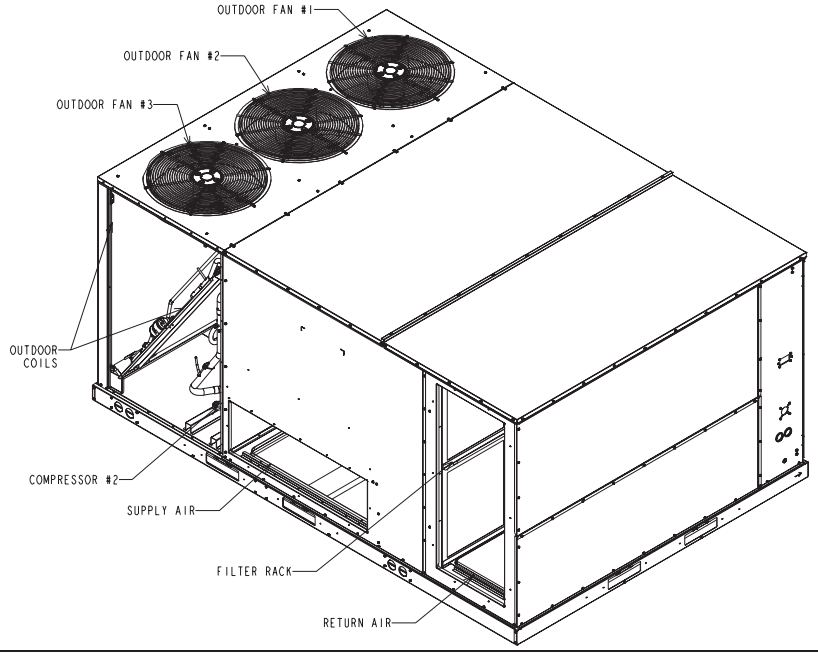
**15-TON**




ST-A1182-08B-00

**FIGURE 5**
**COMPONENT LOCATION**

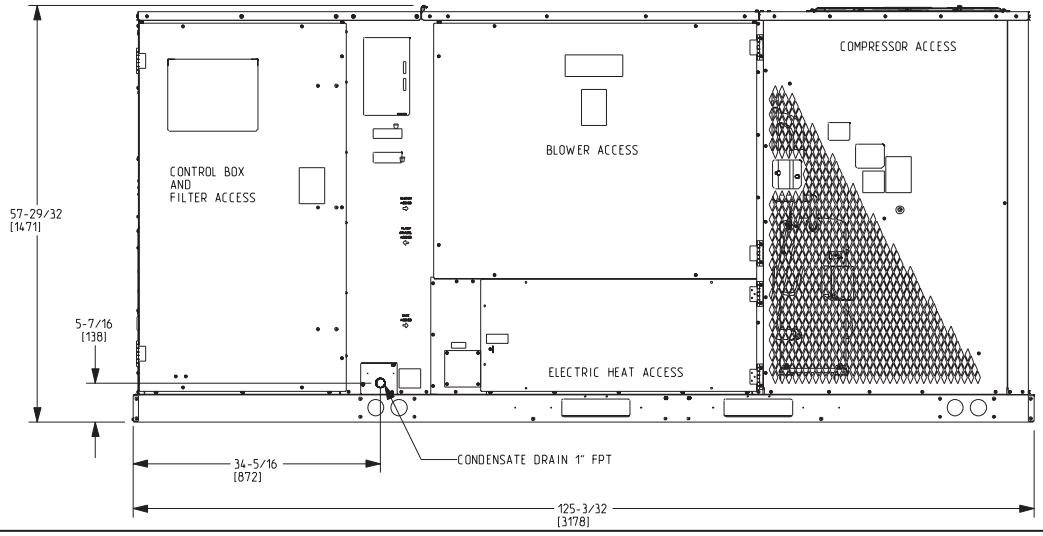
**15-TON**




ST-A1182-05-00

**FIGURE 6**
**UNIT DIMENSIONS & COMPONENT ACCESS**

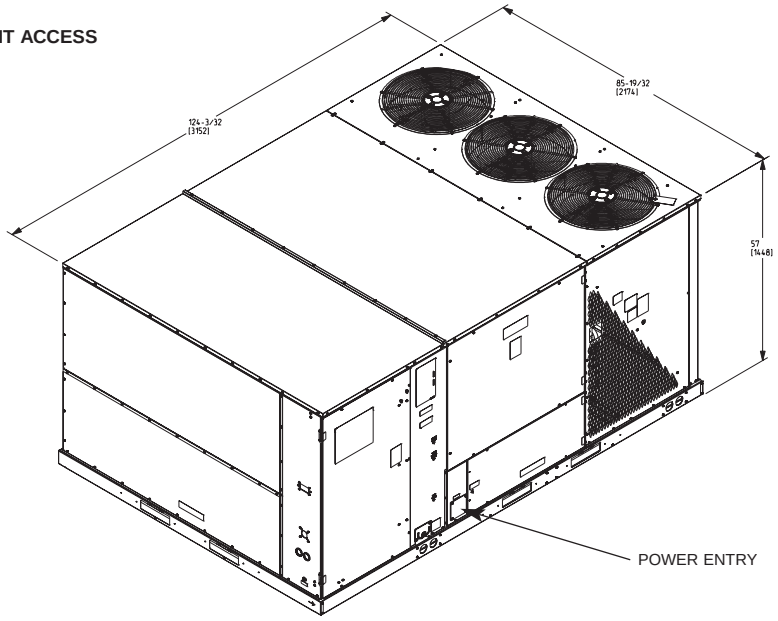
**15-TON**




ST-A1182-06B-00

**FIGURE 7**
**UNIT DIMENSIONS & COMPONENT ACCESS**

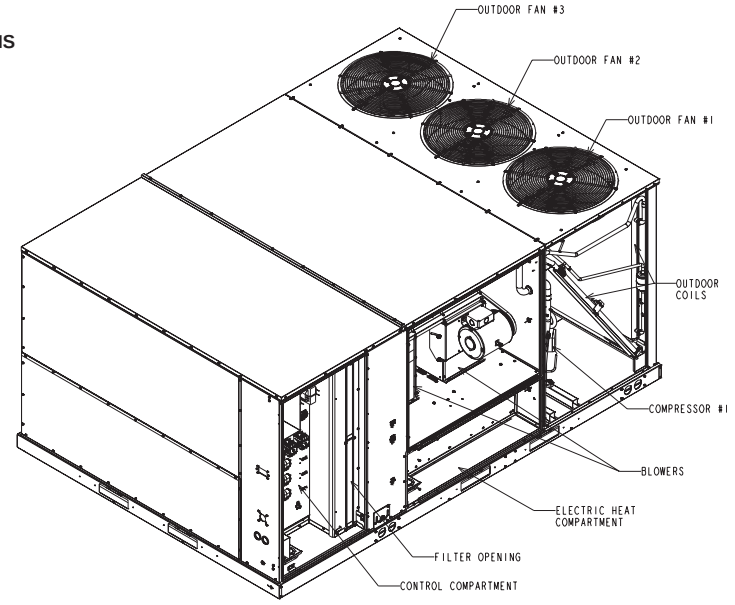
**15-TON**




ST-A1182-01B-00

**FIGURE 8**
**INTERNAL COMPONENT LOCATIONS**

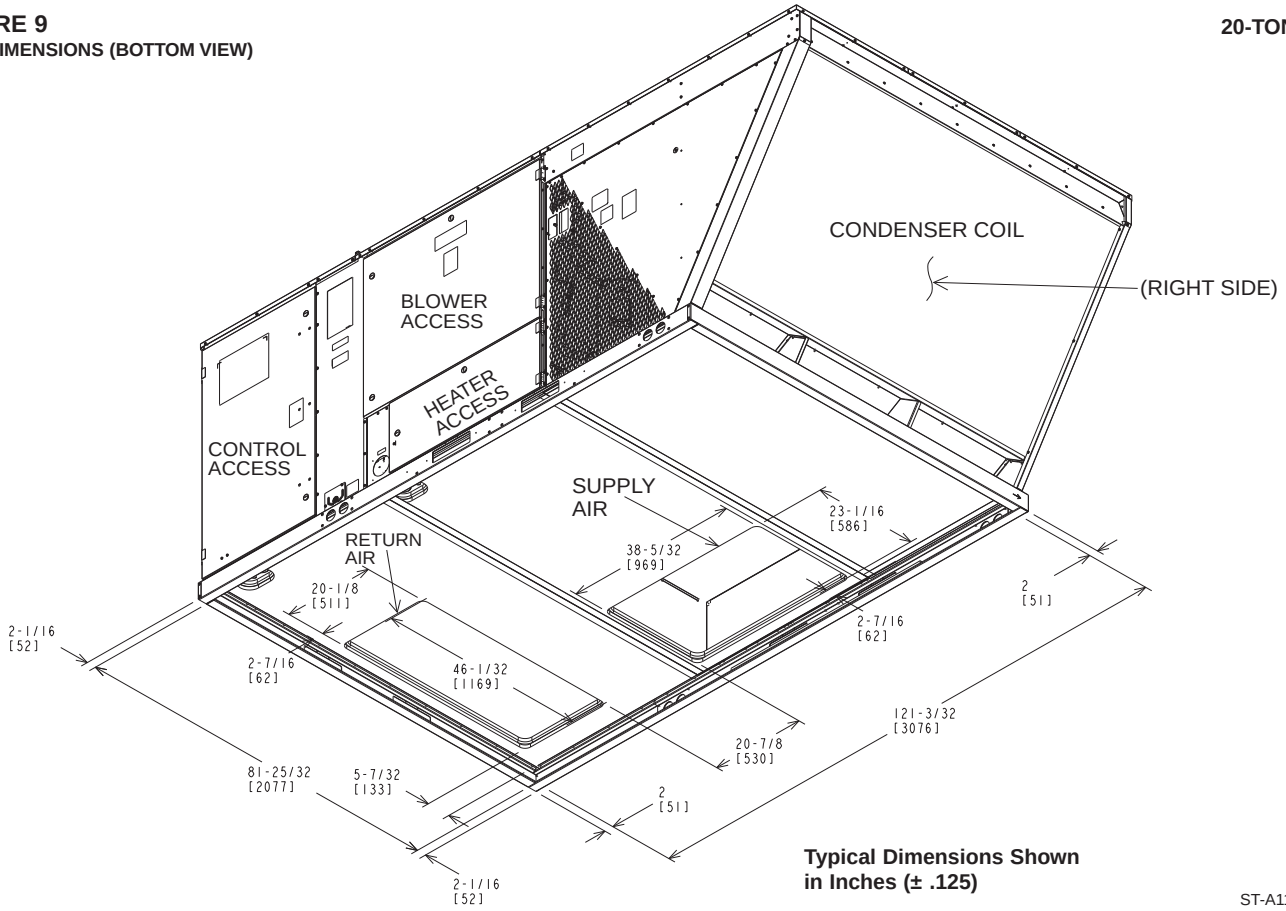
**15-TON**




ST-A1182-04B-00

**FIGURE 9**
**UNIT DIMENSIONS (BOTTOM VIEW)**

**20-TON**

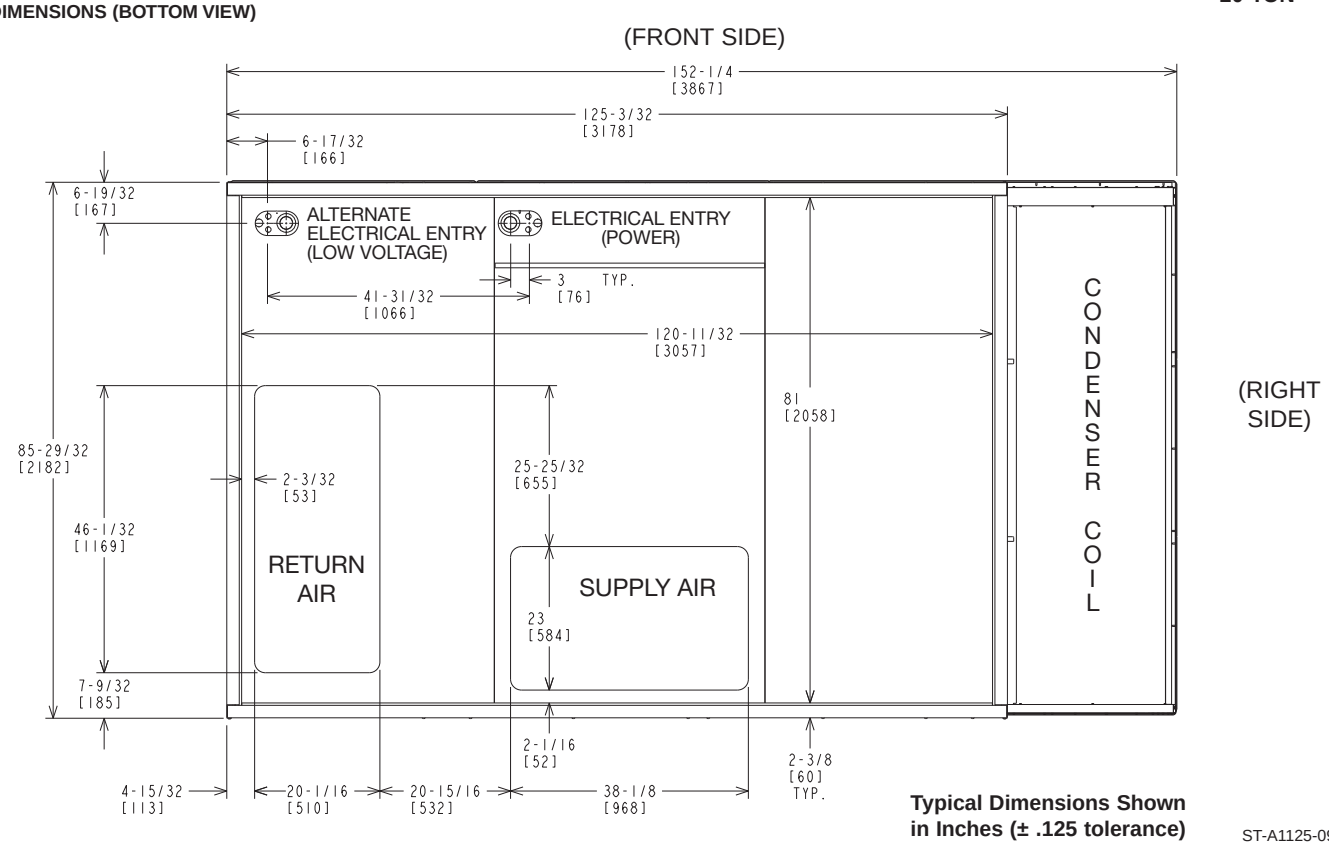



**Typical Dimensions Shown in Inches (± .125)**

ST-A1125-02B

**FIGURE 10**
**UNIT DIMENSIONS (BOTTOM VIEW)**

**20-TON**

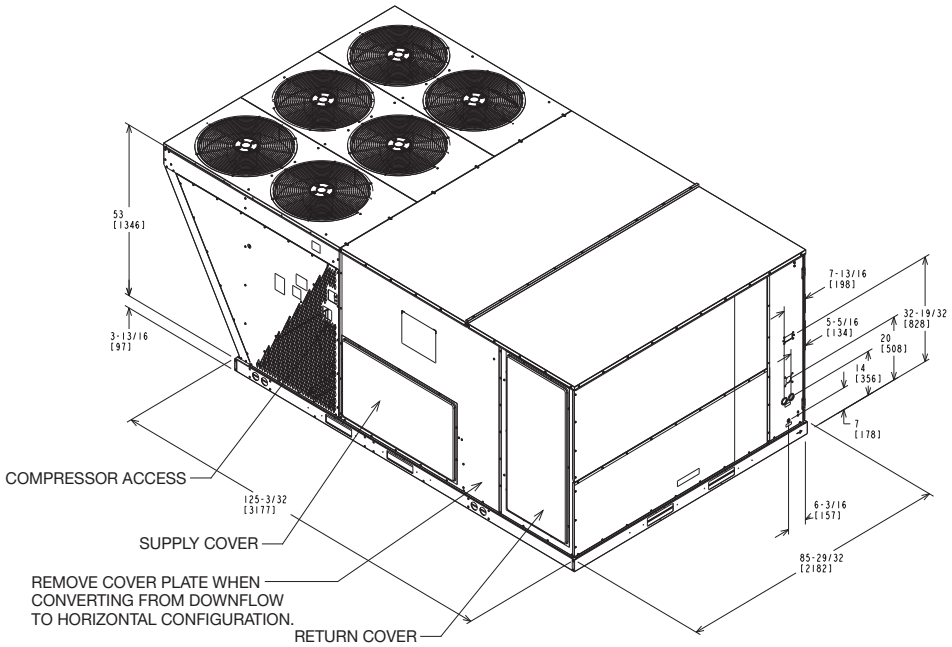



**Typical Dimensions Shown in Inches (± .125 tolerance)**

ST-A1125-09B

**FIGURE 11**
**UNIT DIMENSIONS**

**20-TON**

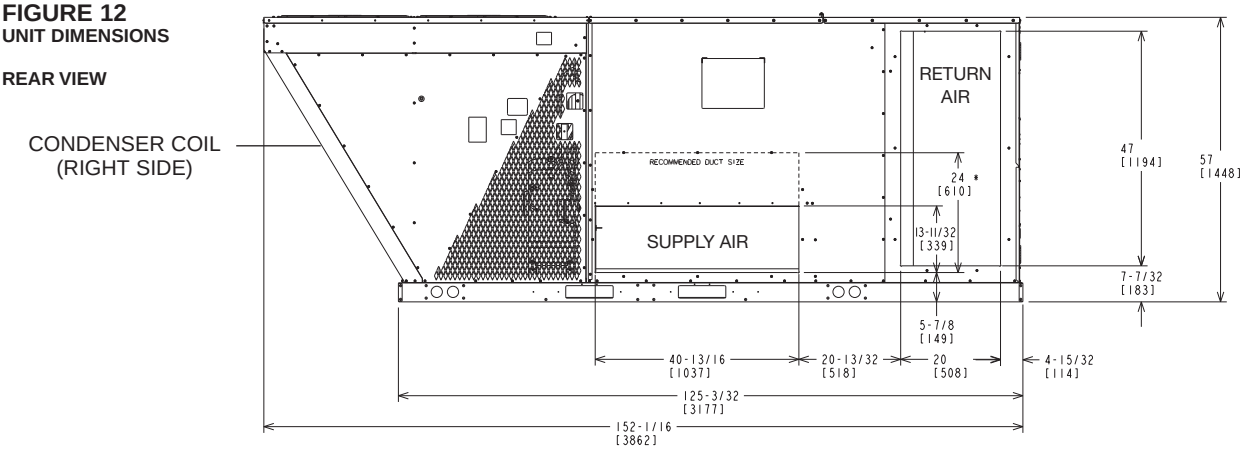



ST-A1125-03

**FIGURE 12**
**UNIT DIMENSIONS**

**REAR VIEW**

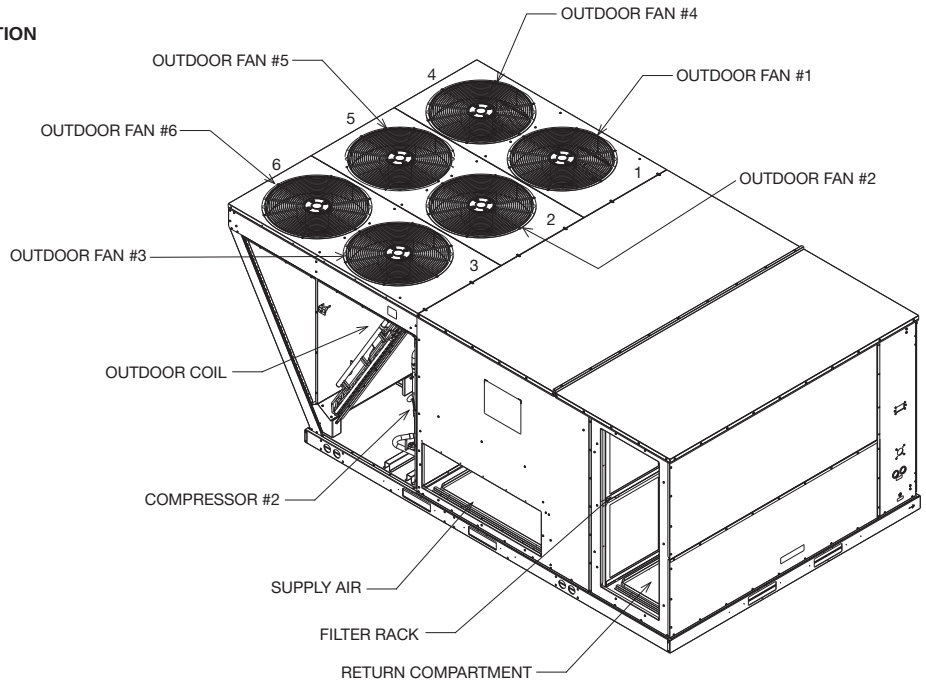
**20-TON**




ST-A1125-08B

**FIGURE 13**
**COMPONENT LOCATION**

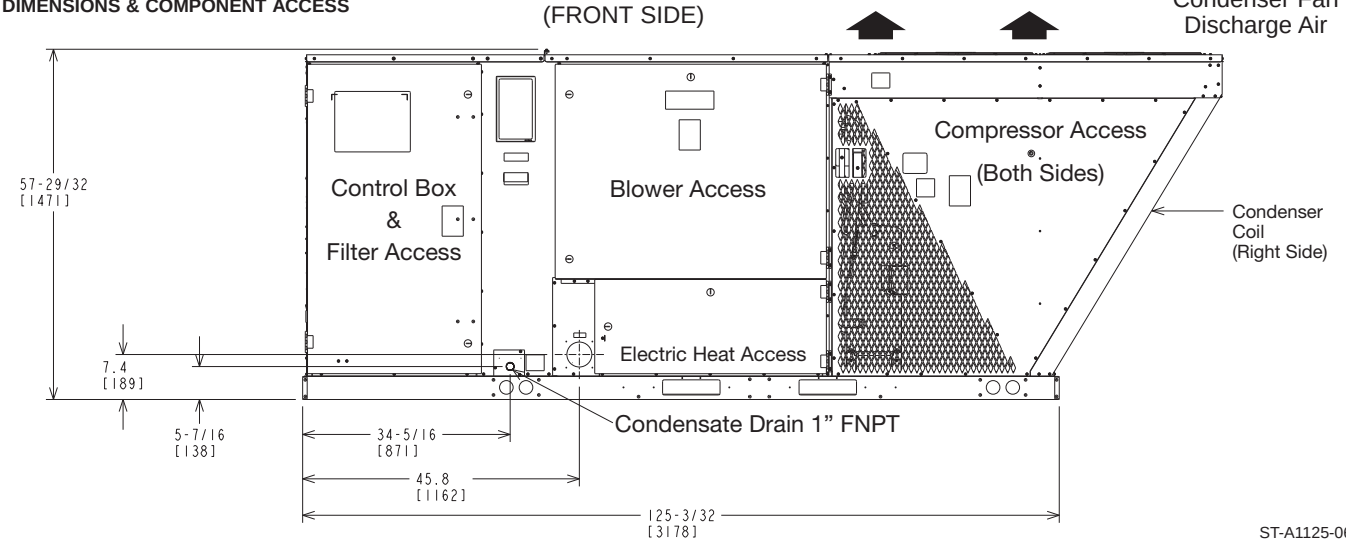
**20-TON**




ST-A1125-05

**FIGURE 14**
**UNIT DIMENSIONS & COMPONENT ACCESS**

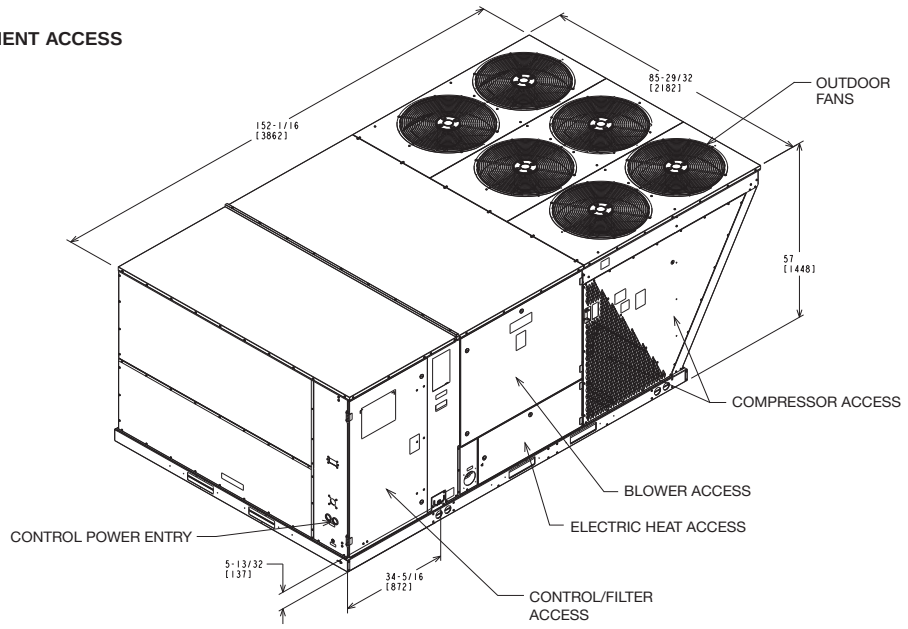
**20-TON**




ST-A1125-06B

**FIGURE 15**
**UNIT DIMENSIONS & COMPONENT ACCESS**

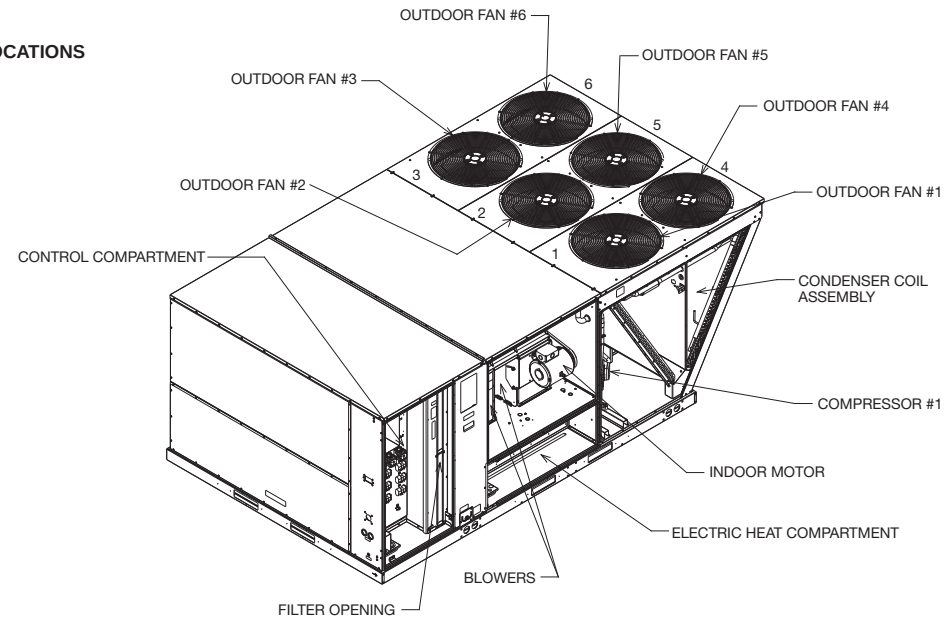
**20-TON**




ST-A1125-01B

**FIGURE 16**
**INTERNAL COMPONENT LOCATIONS**

**20-TON**




ST-A1125-04B

# GENERAL DATA - RLRL

| Model RLRL- Series<br>Model RLRL- Series (with VFD) | C180CL<br>H180CR | C180CM<br>H180CS | C180DL<br>H180DR | C180DM<br>H180DS |
|---|---|---|---|---|
| **Cooling Performance[1]** | | | | **Continued ->** |
| Gross Cooling Capacity Btu [kW] | 178,000 [52.15] | 178,000 [52.15] | 178,000 [52.15] | 178,000 [52.15] |
| EER, SEER[2] | 12.2/NA | 12.2/NA | 12.2/NA | 12.2/NA |
| Nominal CFM/AHRI Rated CFM [L/s] | 6000/5500 [2831/2595] | 6000/5500 [2831/2595] | 6000/5500 [2831/2595] | 6000/5500 [2831/2595] |
| AHRI Net Cooling Capacity Btu [kW] | 174,000 [50.98] | 174,000 [50.98] | 174,000 [50.98] | 174,000 [50.98] |
| Net Sensible Capacity Btu [kW] | 128,000 [37.5] | 128,000 [37.5] | 128,000 [37.5] | 128,000 [37.5] |
| Net Latent Capacity Btu [kW] | 46,000 [13.48] | 46,000 [13.48] | 46,000 [13.48] | 46,000 [13.48] |
| IEER[3] | 13.2/15 | 13.2/15 | 13.2/15 | 13.2/15 |
| Net System Power kW | 14.15 | 14.15 | 14.15 | 14.15 |
| **Compressor** | | | | |
| No./Type | 2/Scroll | 2/Scroll | 2/Scroll | 2/Scroll |
| **Outdoor Sound Rating (dB)[5]** | 91 | 91 | 91 | 91 |
| **Outdoor Coil - Fin Type** | Louvered | Louvered | Louvered | Louvered |
| Tube Type | MicroChannel | MicroChannel | MicroChannel | MicroChannel |
| Tube Size in. [mm] OD | 1 [25.4] | 1 [25.4] | 1 [25.4] | 1 [25.4] |
| Face Area sq. ft. [sq. m] | 50.8 [4.72] | 50.8 [4.72] | 50.8 [4.72] | 50.8 [4.72] |
| 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 | Rifled | Rifled | Rifled | Rifled |
| Tube Size in. [mm] | 0.375 [9.5] | 0.375 [9.5] | 0.375 [9.5] | 0.375 [9.5] |
| Face Area sq. ft. [sq. m] | 26.67 [2.48] | 26.67 [2.48] | 26.67 [2.48] | 26.67 [2.48] |
| Rows / FPI [FPcm] | 2 / 18 [7] | 2 / 18 [7] | 2 / 18 [7] | 2 / 18 [7] |
| Refrigerant Control | TX Valves | TX Valves | TX Valves | TX Valves |
| Drain Connection No./Size in. [mm] | 1/1 [25.4] | 1/1 [25.4] | 1/1 [25.4] | 1/1 [25.4] |
| **Outdoor Fan - Type** | Propeller | Propeller | Propeller | Propeller |
| No. Used/Diameter in. [mm] | 3/24 [609.6] | 3/24 [609.6] | 3/24 [609.6] | 3/24 [609.6] |
| Drive Type/No. Speeds | Direct/1 | Direct/1 | Direct/1 | Direct/1 |
| CFM [L/s] | 10000 [4719] | 10000 [4719] | 10000 [4719] | 10000 [4719] |
| No. Motors/HP | 3 at 1/3 HP | 3 at 1/3 HP | 3 at 1/3 HP | 3 at 1/3 HP |
| Motor RPM | 1075 | 1075 | 1075 | 1075 |
| **Indoor Fan - Type** | FC Centrifugal | FC Centrifugal | FC Centrifugal | FC Centrifugal |
| No. Used/Diameter in. [mm] | 2/18x9 [457x229] | 2/18x9 [457x229] | 2/18x9 [457x229] | 2/18x9 [457x229] |
| Drive Type | Belt (Adjustable) | Belt (Adjustable) | Belt (Adjustable) | Belt (Adjustable) |
| No. Speeds | Single / Multiple | Single / Multiple | Single / Multiple | Single / Multiple |
| No. Motors | 1 | 1 | 1 | 1 |
| Motor HP | 3 | 5 | 3 | 5 |
| Motor RPM | 1725 | 1725 | 1725 | 1725 |
| Motor Frame Size | 56 | 184 | 56 | 184 |
| **Filter - Type** | Disposable | Disposable | Disposable | Disposable |
| Furnished | Yes | Yes | Yes | Yes |
| (NO.) Size Recommended in. [mm x mm x mm] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] |
| **Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]** | 170/173 [4820/4905] | 170/173 [4820/4905] | 170/173 [4820/4905] | 170/173 [4820/4905] |
| **Weights** | | | | |
| Net Weight lbs. [kg] | 1883 [854] | 1921 [871] | 1883 [854] | 1921 [871] |
| Ship Weight lbs. [kg] | 2009 [911] | 2047 [929] | 2009 [911] | 2047 [929] |

**NOTES:**

1. 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 or 360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 210/240 or 340/360.
4. Not applicable to these units.
5. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270. 25 Ton Model (B300) is outside the scope of AHRI Standard 340/360.

# GENERAL DATA - RLRL

| Model RLRL- Series<br>Model RLRL- Series (with VFD) | C180YL | C180YM | C240CL<br>H240CR | C240CM<br>H240CS |
|---|---|---|---|---|
| **Cooling Performance[1]** | | | | **Continued ->** |
| Gross Cooling Capacity Btu [kW] | 178,000 [52.15] | 178,000 [52.15] | 240,000 [70.32] | 240,000 [70.32] |
| EER, SEER[2] | 12.2/NA | 12.2/NA | 12.2/NA | 12.2/NA |
| Nominal CFM/AHRI Rated CFM [L/s] | 6000/5500 [2831/2595] | 6000/5500 [2831/2595] | 8000/7375 [3775/3480] | 8000/7375 [3775/3480] |
| AHRI Net Cooling Capacity Btu [kW] | 174,000 [50.98] | 174,000 [50.98] | 232,000 [67.98] | 232,000 [67.98] |
| Net Sensible Capacity Btu [kW] | 128,000 [37.5] | 128,000 [37.5] | 169,000 [49.52] | 169,000 [49.52] |
| Net Latent Capacity Btu [kW] | 46,000 [13.48] | 46,000 [13.48] | 63,000 [18.46] | 63,000 [18.46] |
| IEER[3] | 13.2 | 13.2 | 13.2/15 | 13.2/15 |
| Net System Power kW | 14.15 | 14.15 | 19.02 | 19.02 |
| **Compressor** | | | | |
| No./Type | 2/Scroll | 2/Scroll | 2/Scroll | 2/Scroll |
| **Outdoor Sound Rating (dB)[5]** | 91 | 91 | 91 | 91 |
| **Outdoor Coil - Fin Type** | Louvered | Louvered | Louvered | Louvered |
| Tube Type | MicroChannel | MicroChannel | MicroChannel | MicroChannel |
| Tube Size in. [mm] OD | 1 [25.4] | 1 [25.4] | 1 [25.4] | 1 [25.4] |
| Face Area sq. ft. [sq. m] | 50.8 [4.72] | 50.8 [4.72] | 50.8 [4.72] | 50.8 [4.72] |
| 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 | Rifled | Rifled | Rifled | Rifled |
| Tube Size in. [mm] | 0.375 [9.5] | 0.375 [9.5] | 0.375 [9.5] | 0.375 [9.5] |
| Face Area sq. ft. [sq. m] | 26.67 [2.48] | 26.67 [2.48] | 26.67 [2.48] | 26.67 [2.48] |
| Rows / FPI [FPcm] | 2 / 18 [7] | 2 / 18 [7] | 4 / 15 [6] | 4 / 15 [6] |
| Refrigerant Control | TX Valves | TX Valves | TX Valves | TX Valves |
| Drain Connection No./Size in. [mm] | 1/1 [25.4] | 1/1 [25.4] | 1/1 [25.4] | 1/1 [25.4] |
| **Outdoor Fan - Type** | Propeller | Propeller | Propeller | Propeller |
| No. Used/Diameter in. [mm] | 3/24 [609.6] | 3/24 [609.6] | 6/24 [609.6] | 6/24 [609.6] |
| Drive Type/No. Speeds | Direct/1 | Direct/1 | Direct/1 | Direct/1 |
| CFM [L/s] | 10000 [4719] | 10000 [4719] | 19800 [9344] | 19800 [9344] |
| No. Motors/HP | 3 at 1/3 HP | 3 at 1/3 HP | 6 at 1/3 HP | 6 at 1/3 HP |
| Motor RPM | 1075 | 1075 | 1075 | 1075 |
| **Indoor Fan - Type** | FC Centrifugal | FC Centrifugal | FC Centrifugal | FC Centrifugal |
| No. Used/Diameter in. [mm] | 2/18x9 [457x229] | 2/18x9 [457x229] | 2/18x9 [457x229] | 2/18x9 [457x229] |
| Drive Type | Belt (Adjustable) | Belt (Adjustable) | Belt (Adjustable) | Belt (Adjustable) |
| No. Speeds | Single | Single | Single / Multiple | Single / Multiple |
| No. Motors | 1 | 1 | 1 | 1 |
| Motor HP | 3 | 5 | 5 | 7 1/2 |
| Motor RPM | 1725 | 1725 | 1725 | 1725 |
| Motor Frame Size | 56 | 184 | 184 | 213 |
| **Filter - Type** | Disposable | Disposable | Disposable | Disposable |
| Furnished | Yes | Yes | Yes | Yes |
| (NO.) Size Recommended in. [mm x mm x mm] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] |
| **Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]** | 170/173 [4820/4905] | 170/173 [4820/4905] | 271/227 [7683/6435] | 271/227 [7683/6435] |
| **Weights** | | | | |
| Net Weight lbs. [kg] | 1883 [854] | 1921 [871] | 2151 [976] | 2189 [993] |
| Ship Weight lbs. [kg] | 2009 [911] | 2047 [929] | 2251 [1021] | 2289 [1038] |

**NOTES:**

1. 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 or 360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 210/240 or 340/360.
4. Not applicable to these units.
5. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270. 25 Ton Model (B300) is outside the scope of AHRI Standard 340/360.

# GENERAL DATA - RLRL

| Model RLRL- Series<br>Model RLRL- Series (with VFD) | C240DL<br>H240DR | C240DM<br>H240DS | C240YL | C240YM |
|---|---|---|---|---|
| **Cooling Performance**[1] | | | | |
| Gross Cooling Capacity Btu [kW] | 240,000 [70.32] | 240,000 [70.32] | 240,000 [70.32] | 240,000 [70.32] |
| EER, SEER[2] | 12.2/NA | 12.2/NA | 12.2/NA | 12.2/NA |
| Nominal CFM/AHRI Rated CFM [L/s] | 8000/7375 [3775/3480] | 8000/7375 [3775/3480] | 8000/7375 [3775/3480] | 8000/7375 [3775/3480] |
| AHRI Net Cooling Capacity Btu [kW] | 232,000 [67.98] | 232,000 [67.98] | 232,000 [67.98] | 232,000 [67.98] |
| Net Sensible Capacity Btu [kW] | 169,000 [49.52] | 169,000 [49.52] | 169,000 [49.52] | 169,000 [49.52] |
| Net Latent Capacity Btu [kW] | 63,000 [18.46] | 63,000 [18.46] | 63,000 [18.46] | 63,000 [18.46] |
| IEER[3] | 13.2/15 | 13.2/15 | 13.2 | 13.2 |
| Net System Power kW | 14.15 | 14.15 | 19.02 | 19.02 |
| **Compressor** | | | | |
| No./Type | 2/Scroll | 2/Scroll | 2/Scroll | 2/Scroll |
| **Outdoor Sound Rating (dB)**[5] | 91 | 91 | 91 | 91 |
| **Outdoor Coil - Fin Type** | Louvered | Louvered | Louvered | Louvered |
| Tube Type | MicroChannel | MicroChannel | MicroChannel | MicroChannel |
| Tube Size in. [mm] OD | 1 [25.4] | 1 [25.4] | 1 [25.4] | 1 [25.4] |
| Face Area sq. ft. [sq. m] | 50.8 [4.72] | 50.8 [4.72] | 50.8 [4.72] | 50.8 [4.72] |
| 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 | Rifled | Rifled | Rifled | Rifled |
| Tube Size in. [mm] | 0.375 [9.5] | 0.375 [9.5] | 0.375 [9.5] | 0.375 [9.5] |
| Face Area sq. ft. [sq. m] | 26.67 [2.48] | 26.67 [2.48] | 26.67 [2.48] | 26.67 [2.48] |
| Rows / FPI [FPcm] | 4 / 15 [6] | 14 / 15 [6] | 4 / 15 [6] | 4 / 15 [6] |
| Refrigerant Control | TX Valves | TX Valves | TX Valves | TX Valves |
| Drain Connection No./Size in. [mm] | 1/1 [25.4] | 1/1 [25.4] | 1/1 [25.4] | 1/1 [25.4] |
| **Outdoor Fan - Type** | Propeller | Propeller | Propeller | Propeller |
| No. Used/Diameter in. [mm] | 6/24 [609.6] | 6/24 [609.6] | 6/24 [609.6] | 6/24 [609.6] |
| Drive Type/No. Speeds | Direct/1 | Direct/1 | Direct/1 | Direct/1 |
| CFM [L/s] | 19800 [9344] | 19800 [9344] | 19800 [9344] | 19800 [9344] |
| No. Motors/HP | 6 at 1/3 HP | 6 at 1/3 HP | 6 at 1/3 HP | 6 at 1/3 HP |
| Motor RPM | 1075 | 1075 | 1075 | 1075 |
| **Indoor Fan - Type** | FC Centrifugal | FC Centrifugal | FC Centrifugal | FC Centrifugal |
| No. Used/Diameter in. [mm] | 2/18x9 [457x229] | 2/18x9 [457x229] | 2/18x9 [457x229] | 2/18x9 [457x229] |
| Drive Type | Belt (Adjustable) | Belt (Adjustable) | Belt (Adjustable) | Belt (Adjustable) |
| No. Speeds | Single / Multiple | Single / Multiple | Single | Single |
| No. Motors | 1 | 1 | 1 | 1 |
| Motor HP | 5 | 7 1/2 | 5 | 7 1/2 |
| Motor RPM | 1725 | 1725 | 1725 | 1725 |
| Motor Frame Size | 184 | 184 | 184 | 213 |
| **Filter - Type** | Disposable | Disposable | Disposable | Disposable |
| Furnished | Yes | Yes | Yes | Yes |
| (NO.) Size Recommended in. [mm x mm x mm] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] | (8)2x25x20 [51x635x508] |
| **Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]** | 271/227 [7683/6435] | 271/227 [7683/6435] | 271/227 [7683/6435] | 271/227 [7683/6435] |
| **Weights** | | | | |
| Net Weight lbs. [kg] | 2289 [1038] | 2327 [1056] | 2151 [976] | 2189 [993] |
| Ship Weight lbs. [kg] | 2389 [1084] | 2427 [1101] | 2251 [1021] | 2289 [1038] |

**NOTES:**

1. 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 or 360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 210/240 or 340/360.
4. Not applicable to these units.
5. Outdoor Sound Rating shown is tested in accordance with ARI Standard 270. 25 Ton Model (B300) is outside the scope of AHRI Standard 340/360.

# ELECTRICAL DATA - RLRL

| ELECTRICAL DATA - RLRL SERIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **C180CL H180CR** | **C180CM H180CS** | **C180DL H180DR** | **C180DM H180DS** | **C180YL** | **C180YM** |
| Unit Information | Unit Operating Voltage Range | 187-253 | 187-253 | 414-506 | 414-506 | 518-632 | 518-632 |
| | Volts | 208/230 | 208/230 | 460 | 460 | 575 | 575 |
| | Minimum Circuit Ampacity | 75/75 | 79/79 | 38 | 40 | 29 | 30 |
| | Minimum Overcurrent Protection Device Size | 90/90 | 90/90 | 45 | 45 | 35 | 35 |
| | Maximum Overcurrent Protection Device Size | 100/100 | 100/100 | 50 | 50 | 35 | 35 |
| Compressor Motor | No. | 2 | 2 | 2 | 2 | 2 | 2 |
| | Volts | 200/230 | 200/230 | 460 | 460 | 575 | 575 |
| | Phase | 3 | 3 | 3 | 3 | 3 | 3 |
| | RPM | 3450 | 3450 | 3450 | 3450 | 3450 | 3450 |
| | HP, Compressor 1 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 |
| | Amps (RLA), Comp. 1 | 25/25 | 25/25 | 12.8 | 12.8 | 9.6 | 9.6 |
| | Amps (LRA), Comp. 1 | 164/164 | 164/164 | 100 | 100 | 78 | 78 |
| | HP, Compressor 2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 |
| | Amps (RLA), Comp. 2 | 25/25 | 25/25 | 12.8 | 12.8 | 9.6 | 9.6 |
| | Amps (LRA), Comp. 2 | 164/164 | 164/164 | 100 | 100 | 78 | 78 |
| Condenser Motor | No. | 3 | 3 | 3 | 3 | 3 | 3 |
| | Volts | 208/230 | 208/230 | 460 | 460 | 575 | 575 |
| | Phase | 1 | 1 | 1 | 1 | 1 | 1 |
| | HP | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 |
| | Amps (FLA, each) | 2.4/2.4 | 2.4/2.4 | 1.4 | 1.4 | 1 | 1 |
| | Amps (LRA, each) | 4.7/4.7 | 4.7./4.7 | 2.1 | 2.4 | 1.8 | 1.8 |
| Evaporator Fan | No. | 1 | 1 | 1 | 1 | 1 | 1 |
| | Volts | 208/230 | 208/230 | 460 | 460 | 575 | 575 |
| | Phase | 3 | 3 | 3 | 3 | 3 | 3 |
| | HP | 3 | 5 | 3 | 5 | 3 | 5 |
| | Amps (FLA, each) | 11.5/11.5 | 14.9/14.9 | 4.6 | 6.6 | 3.5 | 5.3 |
| | Amps (LRA, each) | 74.5/74.5 | 82.6/82.6 | 38.1 | 46.3 | 20 | 39.4 |

# ELECTRICAL DATA - RLRL (continued)

| ELECTRICAL DATA - RLRL SERIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **C240CL H240CR** | **C240CM H240CS** | **C240DL H240DR** | **C240DM H240DS** | **C240YL** | **C240YM** |
| Unit Information | Unit Operating Voltage Range | 187-253 | 187-253 | 414-506 | 414-506 | 518-632 | 518-632 |
| | Volts | 208/230 | 208/230 | 460 | 460 | 575 | 575 |
| | Minimum Circuit Ampacity | 95/95 | 103/103 | 49 | 52 | 37 | 39 |
| | Minimum Overcurrent Protection Device Size | 110/110 | 125/125 | 60 | 60 | 40 | 45 |
| | Maximum Overcurrent Protection Device Size | 110/110 | 125/125 | 60 | 60 | 45 | 50 |
| Compressor Motor | No. | 2 | 2 | 2 | 2 | 2 | 2 |
| | Volts | 200/230 | 200/230 | 460 | 460 | 575 | 575 |
| | Phase | 3 | 3 | 3 | 3 | 3 | 3 |
| | RPM | 3450 | 3450 | 3450 | 3450 | 3450 | 3450 |
| | HP, Compressor 1 | 10 | 10 | 10 | 10 | 10 | 10 |
| | Amps (RLA), Comp. 1 | 30.1/30.1 | 30.1/30.1 | 16.7 | 16.7 | 12.2 | 12.2 |
| | Amps (LRA), Comp. 1 | 225/225 | 225/225 | 114 | 114 | 80 | 80 |
| | HP, Compressor 2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 |
| | Amps (RLA), Comp. 2 | 27.6/27.6 | 27.6/27.6 | 12.8 | 12.8 | 9.6 | 9.6 |
| | Amps (LRA), Comp. 2 | 191/191 | 191/191 | 100 | 100 | 78 | 78 |
| Condenser Motor | No. | 6 | 6 | 6 | 6 | 6 | 6 |
| | Volts | 208/230 | 208/230 | 460 | 460 | 575 | 575 |
| | Phase | 1 | 1 | 1 | 1 | 1 | 1 |
| | HP | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 |
| | Amps (FLA, each) | 2.4/2.4 | 2.4/2.4 | 1.4 | 1.4 | 1 | 1 |
| | Amps (LRA, each) | 4.7/4.7 | 4.7./4.7 | 2.4 | 2.4 | 1.8 | 1.8 |
| Evaporator Fan | No. | 1 | 1 | 1 | 1 | 1 | 1 |
| | Volts | 208/230 | 208/230 | 460 | 460 | 575 | 575 |
| | Phase | 3 | 3 | 3 | 3 | 3 | 3 |
| | HP | 5 | 7 1/2 | 5 | 7 1/2 | 5 | 7 1/2 |
| | Amps (FLA, each) | 14.7/14.7 | 23.1/23.1 | 6.6 | 9.6 | 5.3 | 7.8 |
| | Amps (LRA, each) | 82.6/82.6 | 136/136 | 46.3 | 67 | 39.4 | 53.8 |

# VI. INSTALLATION

## A. GENERAL

1. PRE-INSTALLATION CHECK-POINTS
   Before attempting any installation, the following points should be carefully considered:
   a. Structural strength of supporting members. (rooftop installation)
   b. Clearances and provision for servicing.
   c. Power supply and wiring.
   d. Air duct connections.
   e. Drain facilities and connections.
   f. Location for minimum noise.
2. LOCATION
   These units are designed for outdoor installations. They can be mounted on a slab or rooftop. They are not to be installed within any part of a structure such as an attic, crawl space, closet, or any other place where condenser air flow is restricted or other than outdoor ambient conditions prevail. Since the application of the units is of the outdoor type, it is important to consult your local code authorities at the time the first installation is made.

## B. OUTSIDE SLAB INSTALLATION (Typical outdoor slab installations are shown in Figures 17 and 18.)

1. Select a location where external water drainage cannot collect around the unit.
2. Provide a level concrete slab extending 3" beyond all four sides of the unit. The slab should be sufficient above grade to prevent ground water from entering the unit. **IMPORTANT:** ***To prevent transmission of noise or vibration, slab should not be connected to building structure.***
3. The location of the unit should be such as to provide proper access for inspection and servicing.
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.

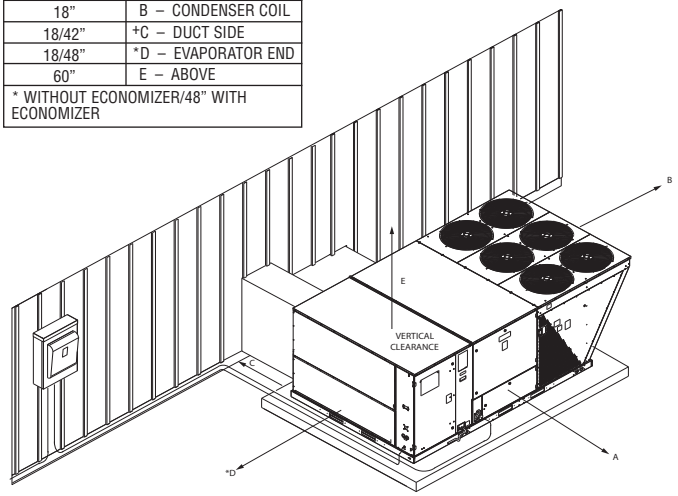
## C. CLEARANCES

The following minimum clearances must be observed for proper unit performance and serviceability.

**FIGURE 17**
**PACKAGED AIR CONDITIONER**
**OUTSIDE SLAB INSTALLATION, BASEMENT OR CRAWL SPACE DISTRIBUTION SYSTEM**

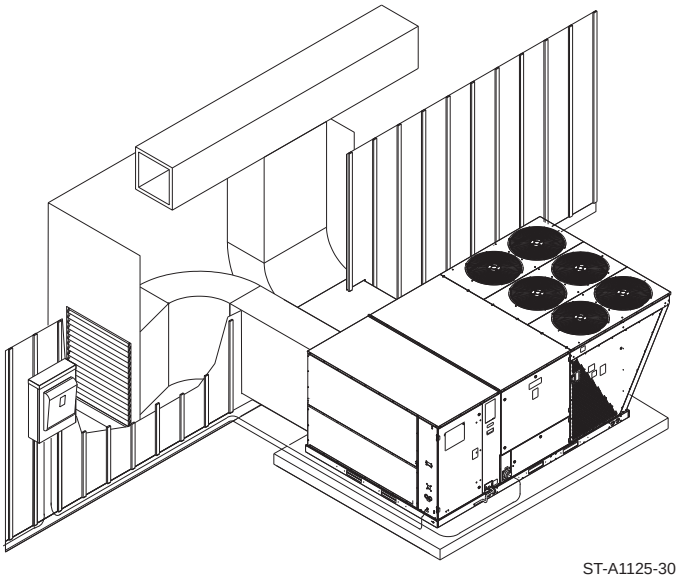
| RECOMMENDED CLEARANCE | LOCATION |
|---|---|
| 80" | A – FRONT |
| 18" | B – CONDENSER COIL |
| 18/42" | +C – DUCT SIDE |
| 18/48" | *D – EVAPORATOR END |
| 60" | E – ABOVE |
| * WITHOUT ECONOMIZER/48" WITH ECONOMIZER | |

+ WITHOUT HORIZONTAL ECONOMIZER/ 42" WITH HORIZONTAL ECONOMIZER



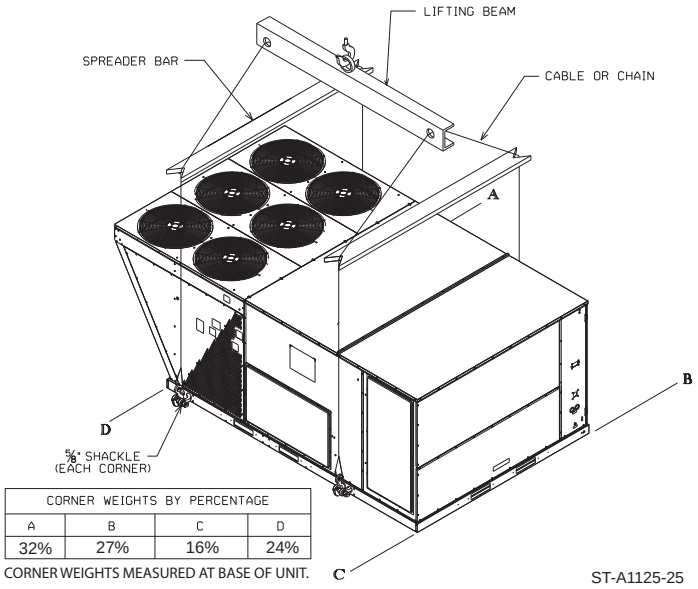

ST-A1125-29

**FIGURE 18**
**PACKAGED AIR CONDITIONER**
**OUTSIDE SLAB INSTALLATION, CLOSET DISTRIBUTION SYSTEM. SLAB FLOOR CONSTRUCTION**



ST-A1125-30

**FIGURE 19**




| CORNER WEIGHTS BY PERCENTAGE | | | |
|---|---|---|---|
| A | B | C | D |
| 32% | 27% | 16% | 24% |

CORNER WEIGHTS MEASURED AT BASE OF UNIT.

ST-A1125-25

**PACKAGED AIR CONDITIONER**
RIGGING FOR LIFTING

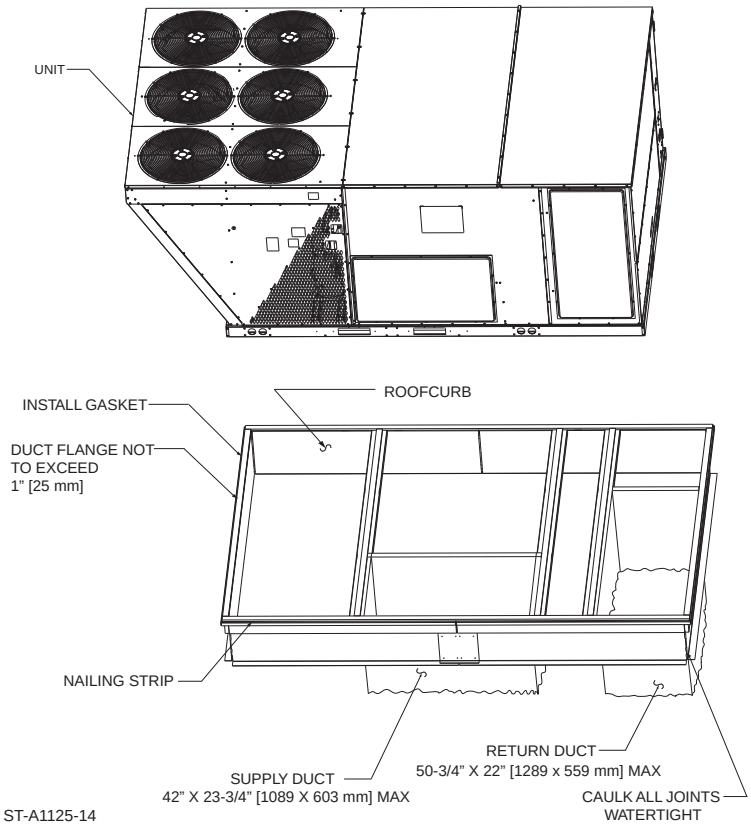
1. Provide 80" minimum clearance at the front of the unit to facilitate removal of the drain pan and return air filters. Provide 18" minimum clearance at all other sides of the unit.
2. Provide 60" minimum clearance between top of unit and maximum 3 foot overhang.
3. Unit is design certified for application on combustible flooring with 0" minimum clearance.
4. See Figure 17 for illustration of minimum installation-service clearances.

## D. ROOFTOP INSTALLATION

1. Before locating the unit on the roof, make sure that the strength of the roof and beams is adequate at that point to support the weight involved. This is very important and user's responsibility.
2. For rigging and roofcurb details, see Figures 19 and 20. Use field-furnished spreaders.
3. For roofcurb assembly, see Roofcurb Installation Instructions.
4. If the roofcurb is not used, provisions for disposing of condensate water runoff must be provided.
5. The unit should be placed on a solid and level roofcurb or platform of adequate strength. See Figure 21.
6. The location of the unit on the roof should be such as to provide proper access for inspection and servicing.

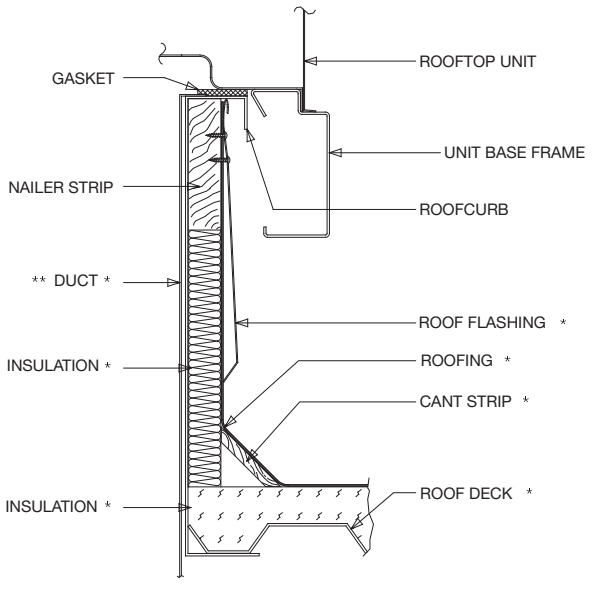
**IMPORTANT:** ***If unit will not be put into service immediately, cover supply and return openings to prevent excessive condensation.***

**FIGURE 20**




ST-A1125-14

**PACKAGED AIR CONDITIONER**
ROOFCURB INSTALLATION




ST-A0888-02

* BY CONTRACTOR

** FOR INSTALLATION OF DUCT AS SHOWN, USE RECOMMENDED DUCT SIZES FROM ROOFCURB INSTALLATION INSTRUCTIONS. FOR DUCT FLANGE ATTACHMENT TO UNIT, SEE UNIT INSTALLATION INSTRUCTIONS FOR RECOMMENDED DUCT SIZES.

# VII. DUCTWORK

Ductwork should be fabricated by the installing contractor in accordance with local codes and NFPA90A. Industry manuals may be used as a guide when sizing and designing the duct system - contact Air Conditioning Contractors of America, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, http:/www.acca.org.

The unit should be placed as close to the space to be air conditioned as possible allowing clearance dimensions as indicated. Ducts should be run as directly as possible to supply and return outlets. Use of non-flammable waterproof flexible connectors on both supply and return connections at the unit to reduce noise transmission is recommended.
It is preferable to install the unit on the roof of the structure if the registers or diffusers are located on the wall or in the ceiling. A slab installation could be considered when the registers are low on a wall or in the floor.

On ductwork exposed to outside air conditions of 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 with vapor barrier. One-half to 1" thickness of insulation is usually sufficient for ductwork inside the air conditioned space.

Balancing dampers should be provided for each branch duct in the supply system. Ductwork should be properly supported from the structure.

When installing ductwork, consider the following items:

1. Noncombustible flexible connectors should be used between ductwork and unit to reduce noise and vibration transmission into the ductwork.
2. When auxiliary heaters are installed, use noncombustible flexible connectors and clearance to combustible material of 0" for the first 3 feet of discharge duct. Clearance to unit top and side is 0".

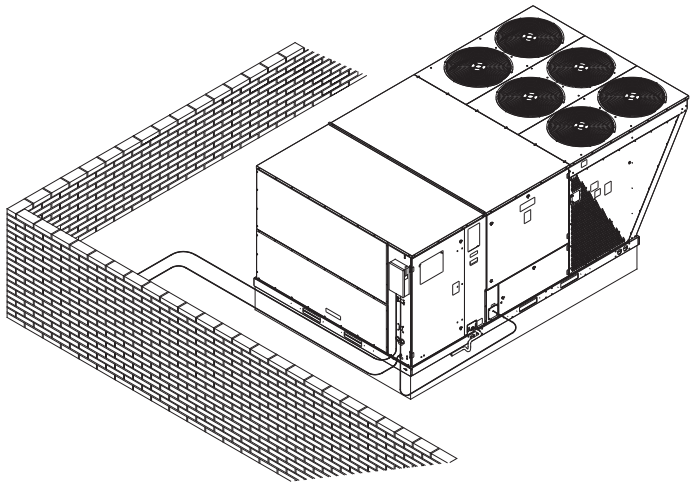
# VIII. FILTERS

This unit is provided with 8 - 20" x 25" x 2" disposable filters. When replacing filters, ensure they are inserted fully to the back to prevent bypass. See Figure 16.

Recommended supplier of this filter is Glassfloss Industries, Inc. or

AAF International
215 Central Avenue
P.O. Box 35690
Louisville, KY 40232
Phone: 1-800-501-3146
Part #: 54-42541-04 (20” x 25” x 2”)

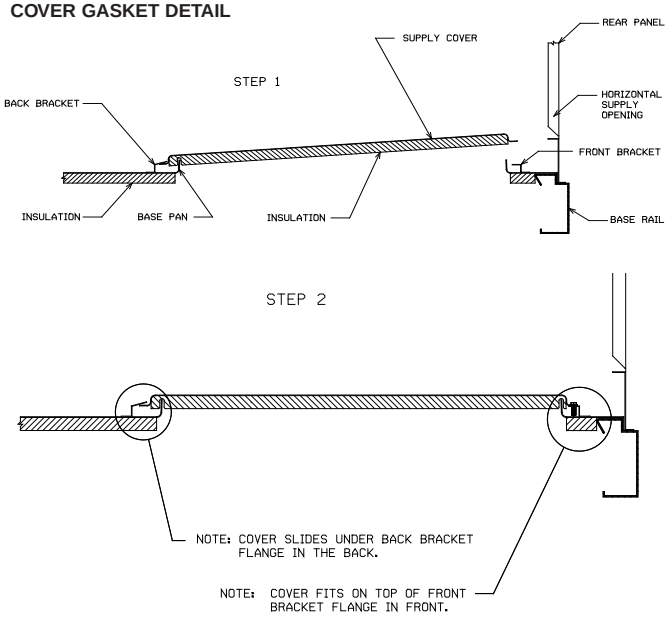
**FIGURE 21**



ST-A1125-01B

**PACKAGED AIR CONDITIONER**
FLAT ROOFTOP INSTALLATION, ATTIC OR DROP CEILING DISTRIBUTION SYSTEM. MOUNTED ON ROOFCURB. CURB MUST BE LEVEL

**FIGURE 22**
**COVER GASKET DETAIL**



# IX. COVER PANEL INSTALLATION/ CONVERSION PROCEDURE

DOWNFLOW TO HORIZONTAL

1. Remove the screws and covers from the outside of the supply and return sections. Also remove and discard cover plate. See Figure 8.
2. Install the covers over the bottom supply and return openings, painted side up, inserting the ***leading flange under the bracket provided.*** Place the ***back flange to top of the front bracket provided.*** See Figure 22.
3. Secure the return and supply cover to front bracket with two (2) screws.

# X. CONDENSATE DRAIN

***IMPORTANT:*** *Install a condensate trap to ensure proper condensate drainage. See Figure 23.*

The condensate drain pan has a threaded female 1 inch NPT (11.5 TPI) connection. Consult local codes or ordinances for specific requirements of condensate drain piping and disposal.

- To use the removable drain pan feature of this unit, some of the condensate line joints should assembled for easy removal and cleaning.
- 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 NOT block service access panels.
- Drain line must be no smaller than drain pan outlet and adequately sized to accommodate the condensate discharge from the unit.
- Drain line should slope away from unit a minimum of 1/8” per foot to ensure proper drainage.
- Drain line must be routed to an acceptable drain or outdoors in accordance with local codes.
- Do not connect condensate drain line to a closed sewer pipe.
- Drain line may need insulation or freeze protection in certain applications.

# XI. ELECTRICAL WIRING

Field wiring must comply with the National Electrical Code* and local ordinances that may apply.

*C.E.C. in Canada

**FIGURE 23**
**CONDENSATE DRAIN**

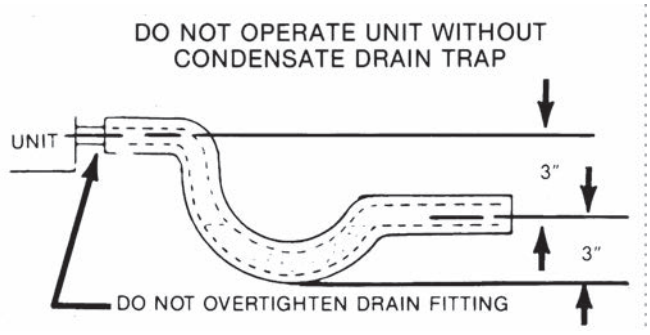
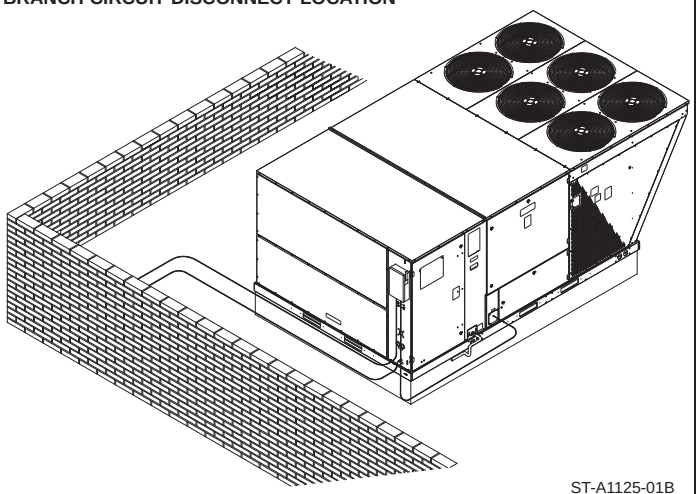



**FIGURE 24**
**BRANCH CIRCUIT DISCONNECT LOCATION**



## ⚠ 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.**

A. POWER WIRING

1. This unit incorporates single-point electrical connections for the unit and electric heat accessory.
2. It is important that proper electrical power is available to the unit. Voltage should not vary more than 10% from the values marked on the unit rating plate. Phase voltages must be balanced within 3%.
3. Install a branch circuit disconnect within sight of the unit. See Figure 24. Use the unit rating plate or Tables A, B, C, and D to determine the required size.
4. The branch circuit wire must be sized in accordance with the National Electrical Code (C.E.C. in Canada) and local ordinances that may apply using the minimum circuit ampacity found on the unit rating plate.
5. Field-installed power wiring must be run through grounded rain-tight conduit attached to the unit power entry panel and connected as follows:

   **UNITS WITHOUT ELECTRIC HEAT -** Connect power wiring to the power terminal block located on the left side of the electric heat compartment. Connect the ground wire to the adjacent ground lug.

   **UNITS WITH FACTORY INSTALLED ELECTRIC HEAT -** Connect power wiring to the power terminal block located on the electric heater kit. Connect the ground wire to the adjacent ground lug. DO NOT connect aluminum wiring directly to the electric heater terminal block. Wiring to the unit contactors is factory-connected.
6. For field installation of an electric heater kit, follow the instructions below. Refer to the information supplied with the kit.
   a. Removing screws as required, open heater access door and detach adjacent power entry panel.
   b. Remove unit contactor wires (1L1, 1L2, 1L3) from unit terminal block on the left side of the electric heat compartment. Remove and discard the terminal block and the adjacent ground lug.
   c. Remove the heater kit block-off panel and install the heater kit in its place using the screws previously removed.
   d. Connect the unit contactor wires (1L1, 1L2, 1L3) to the compressor fuse block on the heater kit.
   e. Re-install the power entry panel & run conduit and the proper size field wiring through the opening in the panel.
   f. Connect field wiring to the power terminal block located on the electric heater kit. Connect ground wire to the adjacent ground lug.
   g. Connect heater kit control plug to the receptacle on the control wiring harness.
   h. Close heater access door and secure with screws previously removed.

B. CONTROL WIRING (Class II)

1. Low voltage wiring should not be run in conduit with power wiring.
2. Control wiring is routed through the 7/8" hole in the unit side panel. See Figure 15. Use a minimum #18 AWG thermostat wire. For wire lengths exceeding 50', use #16 AWG thermostat wire. Connect the control wiring to the low voltage terminal block located below the unit control box.
3. Recommended thermostats can be found in the thermostat specifications catalog T11-001.
4. Figure 26 shows representative low voltage connection diagrams. Read your thermostat installation instructions for any special requirements for your specific thermostat.

   NOTE — Units installed in Canada require that an outdoor thermostat (30,000 min. cycles of endurance) be installed and be wired with C.E.C. Class I wiring.

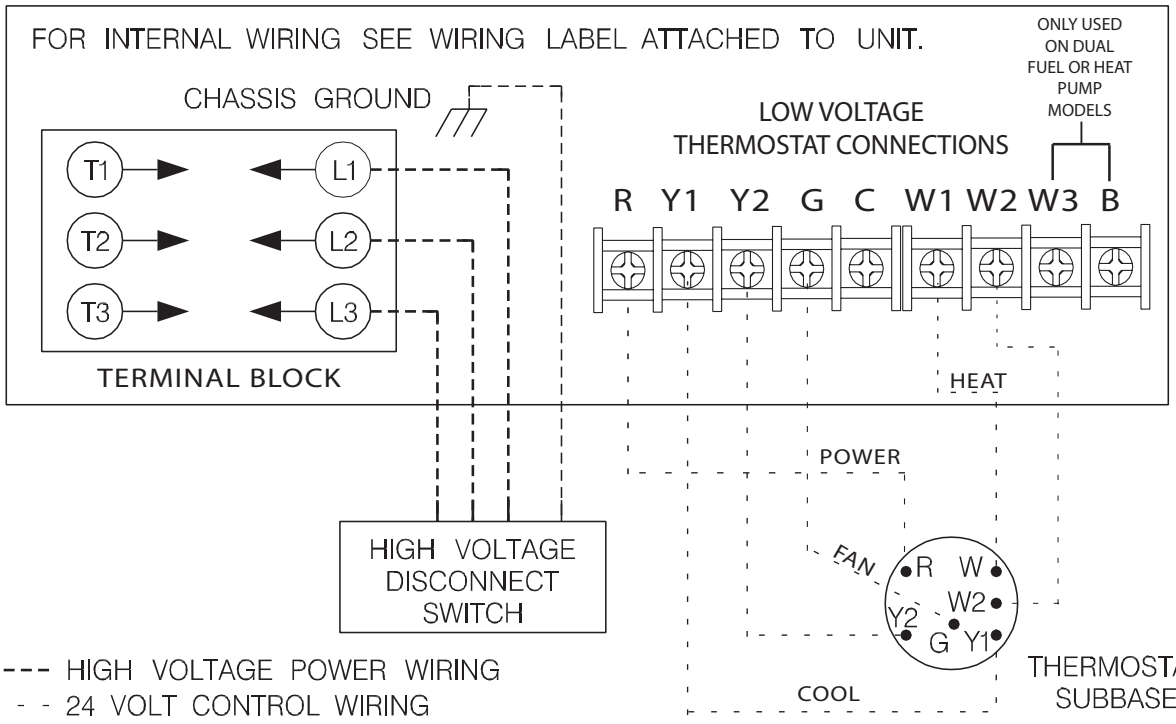
D. INTERNAL WIRING

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

E. THERMOSTAT

The thermostat should be mounted on an inside wall about five feet above the floor in a location where it will not be affected by unconditioned air, sun, or drafts from open doors or other sources. READ installation instructions in heat pump thermostat package CAREFULLY because each has some different wiring requirements.

**FIGURE 25**




ST-A1125-12-00

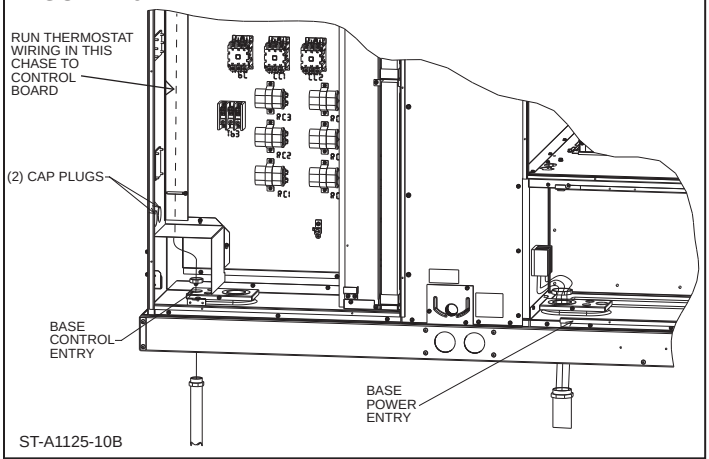
# XII. INDOOR AIR FLOW DATA

Belt-drive blower models have motor sheaves set for proper CFM at a typical external static. See airflow tables for blower performance.

# XIII. CRANKCASE HEAT (OPTIONAL)

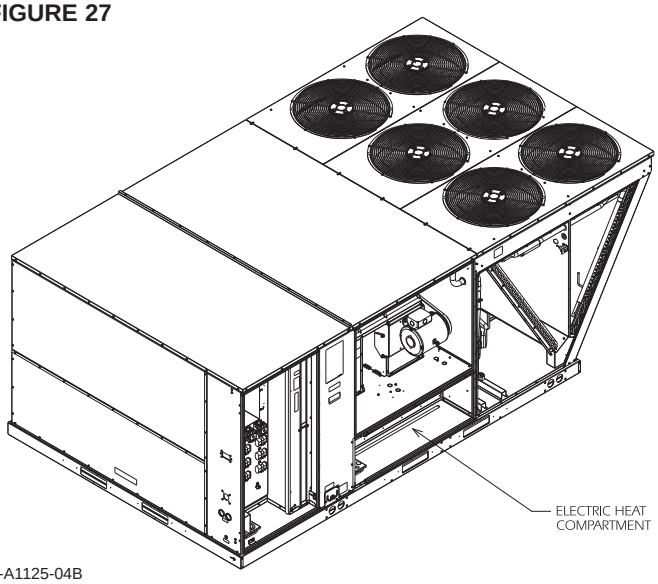
Crankcase heat is not required on scroll type compressors, but may be desirable under certain conditions. Wires have been provided for the addition of crankcase heaters (see wiring diagrams).

**FIGURE 26**




ST-A1125-10B

**FIGURE 27**




ST-A1125-04B

# AIRFLOW PERFORMANCE — 15 TON [52.7kW] — SIDEFLOW

| Air Flow CFM [L/s] | Model RLRL-C180<br>Voltage 208/230, 460, 575 — 3 phase<br>External Static Pressure — Inches of Water [kPa] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.1 [.02] | | 0.2 [.05] | | 0.3 [.07] | | 0.4 [.10] | | 0.5 [.12] | | 0.6 [.15] | | 0.7 [.17] | | 0.8 [.20] | | 0.9 [.22] | | 1.0 [.25] | | 1.1 [.27] | | 1.2 [.30] | | 1.3 [.32] | | 1.4 [.35] | | 1.5 [.37] | | 1.6 [.40] | | 1.7 [.42] | | 1.8 [.45] | | 1.9 [.47] | | 2.0 [.50] | |
| | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W |
| 4800 [2265] | — | — | — | — | — | — | — | — | — | — | 583 | 1393 | 608 | 1508 | 632 | 1621 | 656 | 1732 | 679 | 1841 | 701 | 1947 | 723 | 2052 | 744 | 2154 | 764 | 2254 | 785 | 2326 | 805 | 2430 | 825 | 2537 | 844 | 2647 | 863 | 2761 | 881 | 2878 |
| 5000 [2359] | — | — | — | — | — | — | — | — | — | — | 591 | 1476 | 616 | 1593 | 640 | 1707 | 663 | 1820 | 686 | 1930 | 708 | 2038 | 729 | 2145 | 750 | 2248 | 771 | 2350 | 791 | 2420 | 811 | 2528 | 830 | 2640 | 850 | 2755 | 868 | 2873 | 887 | 2995 |
| 5200 [2454] | — | — | — | — | — | — | — | — | 575 | 1442 | 600 | 1562 | 624 | 1681 | 648 | 1797 | 671 | 1911 | 693 | 2023 | 715 | 2133 | 736 | 2241 | 757 | 2346 | 777 | 2410 | 797 | 2520 | 817 | 2633 | 836 | 2749 | 855 | 2869 | 874 | 2992 | 892 | 3118 |
| 5400 [2548] | — | — | — | — | — | — | — | — | 583 | 1530 | 608 | 1652 | 632 | 1772 | 655 | 1890 | 678 | 2005 | 701 | 2119 | 722 | 2231 | 743 | 2340 | 764 | 2447 | 784 | 2512 | 804 | 2626 | 823 | 2744 | 842 | 2865 | 861 | 2989 | 879 | 3117 | 897 | 3248 |
| 5600 [2643] | — | — | — | — | — | — | — | — | 592 | 1621 | 616 | 1745 | 640 | 1866 | 663 | 1986 | 686 | 2103 | 708 | 2218 | 729 | 2331 | 750 | 2442 | 770 | 2551 | 791 | 2620 | 810 | 2739 | 830 | 2861 | 849 | 2987 | 867 | 3116 | 885 | 3248 | 903 | 3384 |
| 5800 [2737] | — | — | — | — | — | — | 576 | 1588 | 601 | 1715 | 625 | 1840 | 649 | 1964 | 672 | 2085 | 694 | 2204 | 716 | 2321 | 737 | 2436 | 757 | 2548 | 778 | 2614 | 798 | 2735 | 817 | 2858 | 836 | 2985 | 855 | 3116 | 873 | 3249 | 891 | 3386 | 909 | 3527 |
| 6000 [2831] | — | — | — | — | — | — | 585 | 1683 | 610 | 1813 | 634 | 1940 | 657 | 2065 | 680 | 2187 | 702 | 2308 | 724 | 2426 | 744 | 2543 | 765 | 2657 | 785 | 2731 | 805 | 2856 | 824 | 2984 | 843 | 3116 | 861 | 3251 | 879 | 3389 | 897 | 3531 | 914 | 3676 |
| 6200 [2926] | — | — | — | — | 570 | 1650 | 595 | 1783 | 619 | 1913 | 643 | 2042 | 666 | 2169 | 688 | 2293 | 710 | 2415 | 731 | 2535 | 752 | 2653 | 773 | 2728 | 792 | 2854 | 812 | 2984 | 831 | 3116 | 850 | 3253 | 868 | 3392 | 886 | 3535 | 903 | 3682 | 920 | 3832 |
| 6400 [3020] | — | — | — | — | 579 | 1750 | 604 | 1885 | 628 | 2017 | 652 | 2148 | 674 | 2276 | 697 | 2402 | 718 | 2526 | 739 | 2648 | 760 | 2767 | 780 | 2852 | 800 | 2983 | 819 | 3118 | 838 | 3255 | 856 | 3396 | 875 | 3541 | 892 | 3688 | 909 | 3839 | 926 | 3994 |
| 6600 [3114] | — | — | — | — | 589 | 1854 | 614 | 1991 | 637 | 2125 | 661 | 2257 | 683 | 2386 | 705 | 2514 | 727 | 2640 | 748 | 2763 | 768 | 2884 | 788 | 2984 | 808 | 3119 | 827 | 3258 | 845 | 3400 | 863 | 3546 | 881 | 3695 | 899 | 3847 | 916 | 4003 | — | — |
| 6800 [3209] | — | — | 574 | 1822 | 599 | 1961 | 623 | 2099 | 647 | 2235 | 670 | 2369 | 692 | 2500 | 714 | 2629 | 735 | 2756 | 756 | 2882 | 776 | 2984 | 796 | 3121 | 815 | 3262 | 834 | 3405 | 853 | 3552 | 871 | 3702 | 888 | 3856 | 905 | 4013 | 922 | 4173 | — | — |
| 7000 [3303] | — | — | 584 | 1930 | 609 | 2072 | 633 | 2211 | 656 | 2349 | 679 | 2484 | 701 | 2617 | 723 | 2748 | 744 | 2877 | 764 | 3003 | 785 | 3124 | 804 | 3265 | 823 | 3410 | 842 | 3559 | 860 | 3710 | 878 | 3865 | 895 | 4024 | 912 | 4185 | 929 | 4350 | — | — |
| 7200 [3398] | 570 | 1897 | 595 | 2042 | 619 | 2185 | 643 | 2327 | 666 | 2466 | 689 | 2602 | 711 | 2737 | 732 | 2870 | 753 | 3000 | 773 | 3127 | 793 | 3270 | 812 | 3416 | 831 | 3566 | 849 | 3719 | 868 | 3875 | 885 | 4035 | 902 | 4198 | 919 | 4364 | — | — | — | — |

NOTE: L-Drive left of bold line, M-Drive right of bold line.

| Drive Package | L | | | | | | M | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Motor H.P. [W] | 3 [2237.1] | | | | | | 5 [3728.5] | | | | | |
| Blower Sheave | BK105H | | | | | | BK105H | | | | | |
| Motor Sheave | 1VL-44 | | | | | | 1VP-56 | | | | | |
| Turns Open | **1** | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | **4** | 5 | 6 |
| RPM | **733** | 701 | 669 | 640 | 605 | 572 | 927 | 903 | 873 | **840** | 808 | 775 |

NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at ARI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

# COMPONENT AIRFLOW RESISTANCE — 15 TON [52.7kW]

| CFM [L/s] | 4800 [2265] | 5000 [2359] | 5200 [2454] | 5400 [2548] | 5600 [2643] | 5800 [2737] | 6000 [2831] | 6200 [2926] | 6400 [3020] | 6600 [3114] | 6800 [3209] | 7000 [3303] | 7200 [3398] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Resistance — Inches of Water [kPa] | | | | | | | | | | | | |
| Wet Coil | 0.03 [.01] | 0.04 [.01] | 0.05 [.01] | 0.06 [.01] | 0.06 [.01] | 0.07 [.02] | 0.08 [.02] | 0.09 [.02] | 0.10 [.02] | 0.10 [.02] | 0.11 [.03] | 0.12 [.03] | 0.13 [.03] |
| Downflow | 0.05 [.01] | 0.05 [.01] | 0.05 [.01] | 0.05 [.01] | 0.05 [.01] | 0.05 [.01] | 0.05 [.01] | 0.06 [.01] | 0.06 [.01] | 0.06 [.01] | 0.07 [.02] | 0.08 [.02] | 0.08 [.02] |
| Downflow Economizer RA Damper Open | 0.09 [.02] | 0.10 [.02] | 0.10 [.02] | 0.11 [.03] | 0.12 [.03] | 0.13 [.03] | 0.13 [.03] | 0.14 [.03] | 0.15 [.04] | 0.16 [.04] | 0.16 [.04] | 0.17 [.04] | 0.18 [.04] |
| Horizontal Economizer RA Damper Open | 0.00 [.00] | 0.01 [.00] | 0.01 [.00] | 0.02 [.00] | 0.02 [.00] | 0.03 [.01] | 0.03 [.01] | 0.04 [.01] | 0.04 [.01] | 0.05 [.01] | 0.05 [.01] | 0.06 [.01] | 0.06 [.01] |
| Concentric Grill RXRN-AD80 or RXRN-AD81 & Transition RXMC-CJ07 | 0.21 [.05] | 0.25 [.06] | 0.28 [.07] | 0.32 [.08] | 0.35 [.09] | 0.39 [.10] | 0.43 [.11] | 0.46 [.11] | 0.50 [.12] | 0.54 [.13] | 0.57 [.14] | 0.61 [.15] | 0.64 [.16] |

# AIRFLOW CORRECTION FACTORS — 15 TON [52.7kW]

| | CFM [L/s] | 4800 [2265] | 5000 [2359] | 5200 [2454] | 5400 [2548] | 5600 [2643] | 5800 [2737] | 6000 [2831] | 6200 [2926] | 6400 [3020] | 6600 [3114] | 6800 [3209] | 7000 [3303] | 7200 [3398] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total MBH | 0.97 | 0.97 | 0.98 | 0.98 | 0.99 | 1.00 | 1.00 | 1.01 | 1.02 | 1.02 | 1.03 | 1.03 | 1.04 |
| | Sensible MBH | 0.87 | 0.90 | 0.92 | 0.94 | 0.97 | 0.99 | 1.02 | 1.04 | 1.06 | 1.09 | 1.11 | 1.14 | 1.16 |
| | Power kW | 0.98 | 0.98 | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 1.01 | 1.02 | 1.02 |

NOTE: Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[ ] Designates Metric Conversions

# AIRFLOW PERFORMANCE — 20 TON [70.3kW] — 60 Hz — SIDEFLOW

| Air Flow CFM [L/s] | Model RLRL-C240 Voltage 208/230, 460, 575 — 3 phase 60 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | External Static Pressure — Inches of Water [kPa] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.1 [.02] | | 0.2 [.05] | | 0.3 [.07] | | 0.4 [.10] | | 0.5 [.12] | | 0.6 [.15] | | 0.7 [.17] | | 0.8 [.20] | | 0.9 [.22] | | 1.0 [.25] | | 1.1 [.27] | | 1.2 [.30] | | 1.3 [.32] | | 1.4 [.35] | | 1.5 [.37] | | 1.6 [.40] | | 1.7 [.42] | | 1.8 [.45] | | 1.9 [.47] | | 2.0 [.50] | |
| | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W | RPM | W |
| 6400 [3020] | — | — | — | — | — | — | — | — | 685 | 2151 | 707 | 2306 | 729 | 2461 | 750 | 2617 | 771 | 2774 | 792 | 2932 | 813 | 3090 | 833 | 3250 | 853 | 3409 | 872 | 3570 | 892 | 3731 | 911 | 3894 | 929 | 4056 | 948 | 4220 | 966 | 4384 | 984 | 4549 |
| 6600 [3114] | — | — | — | — | — | — | — | — | 698 | 2306 | 720 | 2462 | 741 | 2619 | 762 | 2777 | 783 | 2936 | 804 | 3095 | 824 | 3255 | 844 | 3415 | 863 | 3577 | 882 | 3739 | 901 | 3902 | 920 | 4065 | 938 | 4230 | 956 | 4395 | 974 | 4561 | 992 | 4727 |
| 6800 [3209] | — | — | — | — | — | — | 690 | 2313 | 712 | 2470 | 733 | 2628 | 754 | 2786 | 775 | 2946 | 795 | 3106 | 815 | 3266 | 835 | 3428 | 854 | 3590 | 874 | 3753 | 892 | 3917 | 911 | 4081 | 929 | 4246 | 947 | 4412 | 965 | 4579 | 983 | 4746 | 1000 | 4914 |
| 7000 [3303] | — | — | — | — | 682 | 2327 | 704 | 2484 | 725 | 2643 | 746 | 2802 | 766 | 2962 | 787 | 3123 | 807 | 3285 | 827 | 3447 | 846 | 3610 | 865 | 3774 | 884 | 3938 | 903 | 4103 | 921 | 4269 | 939 | 4436 | 957 | 4603 | 974 | 4771 | 991 | 4940 | 1008 | 5110 |
| 7200 [3398] | — | — | — | — | 696 | 2505 | 717 | 2665 | 738 | 2825 | 759 | 2985 | 779 | 3147 | 799 | 3309 | 819 | 3472 | 838 | 3636 | 857 | 3801 | 876 | 3966 | 895 | 4132 | 913 | 4299 | 931 | 4466 | 949 | 4634 | 966 | 4803 | 983 | 4973 | 1000 | 5143 | — | — |
| 7400 [3492] | — | — | 689 | 2533 | 710 | 2693 | 731 | 2854 | 752 | 3015 | 772 | 3177 | 792 | 3341 | 812 | 3504 | 831 | 3669 | 850 | 3834 | 869 | 4000 | 887 | 4167 | 906 | 4334 | 924 | 4503 | 941 | 4672 | 959 | 4841 | 976 | 5012 | 992 | 5183 | 1009 | 5355 | — | — |
| 7600 [3586] | 682 | 2566 | 704 | 2727 | 724 | 2889 | 745 | 3051 | 765 | 3214 | 785 | 3378 | 805 | 3543 | 824 | 3708 | 843 | 3874 | 862 | 4041 | 880 | 4209 | 899 | 4377 | 917 | 4546 | 934 | 4716 | 951 | 4886 | 968 | 5057 | 985 | 5229 | 1002 | 5402 | — | — | — | — |
| 7800 [3681] | 697 | 2768 | 718 | 2931 | 739 | 3094 | 759 | 3258 | 779 | 3423 | 798 | 3588 | 818 | 3754 | 837 | 3921 | 856 | 4089 | 874 | 4257 | 892 | 4426 | 910 | 4596 | 928 | 4766 | 945 | 4937 | 962 | 5109 | 979 | 5282 | 995 | 5456 | — | — | — | — | — | — |
| 8000 [3775] | 712 | 2979 | 733 | 3143 | 753 | 3308 | 773 | 3473 | 793 | 3640 | 812 | 3806 | 831 | 3974 | 850 | 4142 | 868 | 4312 | 886 | 4481 | 904 | 4652 | 921 | 4823 | 939 | 4995 | 956 | 5168 | 972 | 5342 | 989 | 5516 | 1005 | 5691 | — | — | — | — | — | — |
| 8200 [3869] | 728 | 3199 | 748 | 3365 | 768 | 3531 | 787 | 3698 | 806 | 3865 | 825 | 4034 | 844 | 4203 | 862 | 4373 | 881 | 4543 | 898 | 4715 | 916 | 4887 | 933 | 5060 | 950 | 5233 | 967 | 5407 | 983 | 5583 | 999 | 5758 | — | — | — | — | — | — | — | — |
| 8400 [3964] | 743 | 3428 | 763 | 3595 | 782 | 3762 | 802 | 3931 | 820 | 4100 | 839 | 4270 | 857 | 4441 | 875 | 4612 | 893 | 4784 | 911 | 4957 | 928 | 5131 | 945 | 5305 | 961 | 5480 | 978 | 5656 | 994 | 5832 | 1009 | 6010 | — | — | — | — | — | — | — | — |
| 8600 [4058] | 758 | 3665 | 778 | 3834 | 797 | 4003 | 816 | 4173 | 835 | 4343 | 853 | 4515 | 871 | 4687 | 889 | 4860 | 906 | 5034 | 923 | 5208 | 940 | 5383 | 956 | 5559 | 973 | 5735 | 989 | 5913 | 1004 | 6091 | — | — | — | — | — | — | — | — | — | — |
| 8800 [4153] | 774 | 3911 | 793 | 4081 | 812 | 4252 | 830 | 4423 | 849 | 4596 | 867 | 4769 | 884 | 4942 | 902 | 5117 | 919 | 5292 | 936 | 5468 | 952 | 5644 | 968 | 5822 | 984 | 6000 | 1000 | 6179 | — | — | — | — | — | — | — | — | — | — | — | — |
| 9000 [4247] | 790 | 4166 | 808 | 4338 | 827 | 4510 | 845 | 4683 | 863 | 4857 | 881 | 5031 | 898 | 5206 | 915 | 5382 | 932 | 5559 | 948 | 5736 | 964 | 5915 | 980 | 6093 | 996 | 6273 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 9200 [4341] | 805 | 4430 | 824 | 4603 | 842 | 4777 | 860 | 4951 | 877 | 5127 | 895 | 5303 | 912 | 5479 | 929 | 5657 | 945 | 5835 | 961 | 6014 | 977 | 6194 | 992 | 6374 | 1008 | 6555 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 9400 [4436] | 821 | 4703 | 839 | 4877 | 857 | 5052 | 875 | 5229 | 892 | 5405 | 909 | 5583 | 926 | 5761 | 942 | 5940 | 958 | 6120 | 974 | 6300 | 989 | 6481 | 1005 | 6663 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 9600 [4530] | 837 | 4984 | 855 | 5160 | 872 | 5337 | 890 | 5514 | 907 | 5693 | 923 | 5872 | 940 | 6052 | 956 | 6232 | 971 | 6413 | 987 | 6595 | 1002 | 6778 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

NOTE: L-Drive left of bold line, M-Drive right of bold line, N-Drive right of double line.

| Drive Package | L | | | | | | M | | | | | | N (field installed only) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Motor H.P. [W] | 5 [3728.5] | | | | | | 7.5 [5592.7] | | | | | | 7.5 [5592.7] | | | | | |
| Blower Sheave | BK120H | | | | | | BK130H | | | | | | BK120H | | | | | |
| Motor Sheave | 1VP-56 | | | | | | 1VP-71 | | | | | | 1VP-71 | | | | | |
| Turns Open | **1** | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | **4** | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
| RPM | **822** | 798 | 771 | 742 | 712 | 684 | 932 | 905 | 878 | **851** | 824 | 797 | 1007 | 978 | 949 | 921 | 892 | 863 |

NOTES: 1. Factory sheave settings are shown in bold type.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

| Airflow CFM [L/s] | AIRFLOW CORRECTION FACTORS * | | | COMPONENT AIRFLOW RESISTANCE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Wet Coil | Downflow | Downflow Economizer RA Damper Open | Horizontal Economizer RA Damper Open | Concentric Grill RXRN-AD80 or RXRN-AD81 & Transition RXMC-CJ07 | Concentric Grill RXRN-AD86 & Transition RXMC-CK08 | Concentric Grill RXRN-AD88 & Transition RXMC-CL09 |
| | Total MBH | Sensible MBH | Power kW | Resistance — Inches of Water [kPa] | | | | | | |
| 6400 [3020] | 0.97 | 0.88 | 0.98 | 0.01 [.00] | 0.06 [.01] | 0.15 [.04] | 0.04 [.01] | 0.50 [.12] | — | — |
| 6600 [3114] | 0.97 | 0.90 | 0.99 | 0.02 [.00] | 0.06 [.01] | 0.16 [.04] | 0.05 [.01] | 0.54 [.13] | — | — |
| 6800 [3209] | 0.98 | 0.92 | 0.99 | 0.03 [.01] | 0.07 [.02] | 0.16 [.04] | 0.05 [.01] | — | — | — |
| 7000 [3303] | 0.98 | 0.94 | 0.99 | 0.03 [.01] | 0.08 [.02] | 0.17 [.04] | 0.06 [.01] | — | — | — |
| 7200 [3398] | 0.99 | 0.96 | 0.99 | 0.04 [.01] | 0.08 [.02] | 0.18 [.04] | 0.06 [.01] | — | 0.38 [.09] | — |
| 7400 [3492] | 0.99 | 0.97 | 1.00 | 0.05 [.01] | 0.09 [.02] | 0.19 [.05] | 0.07 [.02] | — | 0.41 [.10] | — |
| 7600 [3586] | 1.00 | 0.99 | 1.00 | 0.06 [.01] | 0.10 [.02] | 0.20 [.05] | 0.07 [.02] | — | 0.44 [.11] | — |
| 7800 [3681] | 1.00 | 1.01 | 1.00 | 0.06 [.01] | 0.11 [.03] | 0.21 [.05] | 0.08 [.02] | — | 0.47 [.12] | — |
| 8000 [3775] | 1.01 | 1.03 | 1.00 | 0.07 [.02] | 0.12 [.03] | 0.22 [.05] | 0.09 [.02] | — | 0.50 [.12] | — |
| 8200 [3869] | 1.01 | 1.05 | 1.01 | 0.08 [.02] | 0.13 [.03] | 0.23 [.06] | 0.09 [.02] | — | 0.53 [.13] | — |
| 8400 [3964] | 1.02 | 1.07 | 1.01 | 0.09 [.02] | 0.14 [.03] | 0.24 [.06] | 0.10 [.02] | — | 0.56 [.14] | — |
| 8600 [4058] | 1.02 | 1.09 | 1.01 | 0.09 [.02] | 0.15 [.04] | 0.25 [.06] | 0.10 [.02] | — | 0.59 [.15] | — |
| 8800 [4153] | 1.03 | 1.10 | 1.01 | 0.10 [.02] | 0.16 [.04] | 0.26 [.06] | 0.11 [.03] | — | 0.62 [.15] | — |
| 9000 [4247] | 1.03 | 1.12 | 1.01 | 0.11 [.03] | 0.18 [.04] | 0.27 [.07] | 0.11 [.03] | — | — | — |
| 9200 [4341] | 1.03 | 1.14 | 1.02 | 0.12 [.03] | 0.19 [.05] | 0.28 [.07] | 0.12 [.03] | — | — | — |
| 9400 [4436] | 1.04 | 1.16 | 1.02 | 0.12 [.03] | 0.20 [.05] | 0.29 [.07] | 0.12 [.03] | — | — | — |
| 9600 [4530] | 1.04 | 1.18 | 1.02 | 0.13 [.03] | 0.22 [.05] | 0.30 [.07] | 0.13 [.03] | — | — | — |

* Multiply correction factor times gross performance data — resulting sensible capacity cannot exceed total capacity.

[ ] Designates Metric Conversions

# XIV. PRE-START CHECK

1. Is unit properly located and slightly slanted toward indoor condensate drain?
2. Is ductwork insulated, weatherproofed, with proper spacing to combustible materials?
3. Is air free to travel to and from outdoor coil? (See Figure 10.)
4. Is the wiring correct, tight, and according to unit wiring diagram?
5. Is unit grounded?
6. Are field supplied air filters in place and clean?
7. Do the outdoor fan and indoor blower turn freely without rubbing, and are they tight on the motor shafts?

# XV. STARTUP

1. Turn thermostat to “OFF,” turn “on” power supply at disconnect switch.
2. Turn temperature setting as high as it will go.
3. Turn fan switch to “ON.”
4. Indoor blower should run. Be sure it is running in the right direction.
5. Turn fan switch to “AUTO.” Turn system switch to “COOL” and turn temperature setting below room temperature. Unit should run in cooling mode.
6. Is outdoor fan operating correctly in the right direction?
7. Is compressor running correctly.
   Record the following after the unit has run some time.
   A. Operating Mode _____
   B. Discharge Pressures (High) _____PSIG
   C. Vapor Pressure at Compressors (Low) _____PSIG
   D. Vapor Line Temperature at Compressors °F.
   E. Indoor Dry Bulb _____°F.
   F. Indoor Wet Bulb _____°F.
   G. Outdoor Dry Bulb _____°F.
   H. Outdoor Wet Bulb _____°F.
   I. Voltage at Contactor _____Volts
   J. Current at Contactors _____Amps
   K. Model Number_____
   L. Serial Number _____
   M. Location_____
   N. Owner _____
   O. Date_____
8. Turn thermostat system switch to “HEAT.” Unit compressors should stop. Raise temperature setting to above room temperature. Unit should run in heating mode and auxiliary heaters, if installed, should come on.
9. Check the refrigerant charge using the instructions located on unit charging chart. Replace service port caps. Service port cores are for system access only and will leak if not tightly capped.
10. Adjust discharge air grilles and balance system.
11. Check ducts for condensation and air leaks.
12. Check unit for tubing and sheet metal rattles.
13. Instruct the owner on operation and maintenance.
14. Leave “INSTALLATION” and ”USE AND CARE“ instructions with owner

# XVI. OPERATION

## COOLING MODE

With thermostat in the cool mode, fan auto and the room temperature higher than the thermostat setting:

A. Indoor blower contactor is energized through thermostat contact (G).

B. Compressor contactors are energized through thermostat contacts (Y1) & (Y2) and pressure controls.

C. Economizer enthalpy control (if installed) controls operation of first-stage cooling and positions fresh air damper to maintain mixed air temperature. Second-stage cooling operates normally as required by second stage of thermostats.

D. The system will continue in cooling operation as long as all safety controls are closed, until the thermostat is satisfied.

## HEATING MODE

With thermostat in the heat mode, fan auto and the room temperature lower than the thermostat setting the indoor blower contactor is energized through thermostat contact (G).

## ⚠ WARNING

**ONLY ELECTRIC HEATER KITS SUPPLIED BY THIS MANUFACTURER AS DESCRIBED IN THIS PUBLICATION HAVE BEEN DESIGNED, TESTED, AND EVALUATED BY A NATIONALLY RECOGNIZED SAFETY TESTING AGENCY 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.**

# XVII. UNITS WITH A BLOWER VFD

No adjustments of the VFD are required for installation or operation of this unit.

### VFD MODEL

Schneider Altivar 212 (factory programmed).

### REPLACEMENT

The VFD is horsepower and voltage specific therefore; replacement must be the same model as the existing. A preprogrammed VFD is recommended and available from ProStock. A non-programmed Schneider Altivar 212 may be used but must be programmed exactly per the included VFD I & O Manual (92-104334-01) programming guide for safe and proper function.

### OPERATION

The purpose of the VFD is to allow low airflow in Fan Only (G) and First Stage Cooling (Y1) operation of a two stage unit. Unit air balancing should be performed at 100% airflow (60Hz at VFD) during a W1, W2 or Y2 call by adjusting the blower motor sheave. To meet ASHRAE 90.1-2010 and for best performance, First Stage Cool and Fan Only speeds are factory set at 50% airflow (30 Hz at VFD). Both of these speeds are independently adjustable at the RTU-C. The VFD display will indicate an equivalent value in Hz (ie. Low Cool adjusted to 60% at RTU-C will display as 36Hz at the VFD). A 20 second (adjustable at the VFD) ramp-up or ramp-down is used whenever the blower speed is increased or decreased. Low speed blower operation first ramps to 75%, to close fan proving switch, before ramping to the desired speed. Since the VFD operates on 24VDC control voltage, a blower relay (with 24VAC across the coil) is used to turn the VFD on. Blower speeds are changed via Modbus communication from the RTU-C. For more information see VFD I & O Manual (92-104334-01).

# XVIII. AUXILIARY HEAT

In the heating mode, the thermostat will energize one or more supplementary resistance heaters.

### REPLACEMENT PARTS

Contact your local distributor for a complete parts list.

### CHARGE INFORMATION

Refer to the appropriate charge chart on the unit, or in this booklet.

### TROUBLESHOOTING

Refer to the troubleshooting chart included in this manual.

### WIRING DIAGRAMS

Refer to the appropriate wiring diagram included in this manual.

# XIX. HEATER KIT CHARACTERISTICS

## AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

**208/240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION**

| RHEEM Model Number | Single Power Supply For Both Unit And Heater Kit | | | | | | Separate Power Supply For Both Unit And Heater Kit | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Heater Kit | | | | Air Conditioner | | Heater Kit | | Air Conditioner | | |
| | RXJJ-Heater Kit Nominal kW | No. of Sequence Steps | Rated Heater kW @ 208/240 V | Heater KBTU/Hr @ 208/240 V | Heater Amp. @ 208/240 V | Unit Min. Ckt Ampacity @ 208/240 V | Over Current Protective Device Size | | Min. Ckt. Ampacity 208/240V | Max. Fuse Size 208/240V | Min. Circuit Ampacity 208/240V | Over Current Protective Device Size | |
| | | | | | | | Min./Max. @ 208 V | Min./Max. @ 240 V | | | | Min./Max. @ 208 V | Min./Max. @ 240 V |
| RLRL-C180CL | No Heat | — | — | — | — | 75/75 | 90/100 | 90/100 | — | — | 75/75 | 90/100 | 90/100 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 75/75 | 90/100 | 90/100 | 50/58 | 50/60 | 75/75 | 90/100 | 90/100 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 115/130 | 125/125 | 150/150 | 100/116 | 100/125 | 75/75 | 90/100 | 90/100 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 165/188 | 175/175 | 200/200 | 150/173 | 150/175 | 75/75 | 90/100 | 90/100 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 202/231 | 225/225 | 250/250 | 188/217 | 200/225 | 75/75 | 90/100 | 90/100 |
| RLRL-C240CL | No Heat | — | — | — | — | 95/95 | 110/110 | 110/110 | — | — | 95/95 | 110/110 | 110/110 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 95/95 | 110/110 | 110/110 | 50/58 | 50/60 | 95/95 | 110/110 | 110/110 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 119/134 | 125/125 | 150/150 | 100/116 | 100/125 | 95/95 | 110/110 | 110/110 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 169/192 | 175/175 | 200/200 | 150/173 | 150/175 | 95/95 | 110/110 | 110/110 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 206/235 | 225/225 | 250/250 | 188/217 | 200/225 | 95/95 | 110/110 | 110/110 |
| RLRL-C180CM | No Heat | — | — | — | — | 79/79 | 90/100 | 90/100 | — | — | 79/79 | 90/100 | 90/100 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 79/79 | 90/100 | 90/100 | — | — | 79/79 | 90/100 | 90/100 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 119/134 | 125/125 | 150/150 | 100/116 | 100/125 | 79/79 | 90/100 | 90/100 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 169/192 | 175/175 | 200/200 | 150/173 | 150/175 | 79/79 | 90/100 | 90/100 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 206/235 | 225/225 | 250/250 | 188/217 | 200/225 | 79/79 | 90/100 | 90/100 |
| RLRL-C240CM | No Heat | — | — | — | — | 103/103 | 125/125 | 125/125 | — | — | 103/103 | 125/125 | 125/125 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 103/103 | 125/125 | 125/125 | 50/58 | 50/60 | 103/103 | 125/125 | 125/125 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 129/145 | 150/150 | 150/150 | 100/116 | 100/125 | 103/103 | 125/125 | 125/125 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 179/202 | 200/200 | 225/225 | 150/173 | 150/175 | 103/103 | 125/125 | 125/125 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 217/245 | 225/225 | 250/250 | 188/217 | 200/225 | 103/103 | 125/125 | 125/125 |

## XIX. HEATER KIT CHARACTERISTICS

### AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

**208/240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION**

| RHEEM Model Number | Single Power Supply For Both Unit And Heater Kit | | | | | | Separate Power Supply For Both Unit And Heater Kit | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Heater Kit | | | | | Air Conditioner | Heater Kit | | Air Conditioner | | | |
| | RXJJ-Heater Kit Nominal kW | No. of Sequence Steps | Rated Heater kW @ 208/240 V | Heater KBTU/Hr @ 208/240 V | Heater Amp. @ 208/240 V | Unit Min. Ckt Ampacity @ 208/240 V | Over Current Protective Device Size | | Min. Ckt. Ampacity 208/240V | Max. Fuse Size 208/240V | Min. Circuit Ampacity 208/240V | Over Current Protective Device Size | |
| | | | | | | | Min./Max. @ 208 V | Min./Max. @ 240 V | | | | Min./Max. @ 208 V | Min./Max. @ 240 V |
| RLRL-H180CR | No Heat | — | — | — | — | 75/75 | 90/100 | 90/100 | — | — | 75/75 | 90/100 | 90/100 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 75/75 | 90/100 | 90/100 | 50/58 | 50/60 | 75/75 | 90/100 | 90/100 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 115/130 | 125/125 | 150/150 | 100/116 | 100/125 | 75/75 | 90/100 | 90/100 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 165/188 | 175/175 | 200/200 | 150/173 | 150/175 | 75/75 | 90/100 | 90/100 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 202/231 | 225/225 | 250/250 | 188/217 | 200/225 | 75/75 | 90/100 | 90/100 |
| RLRL-H240CR | No Heat | — | — | — | — | 95/95 | 110/110 | 110/110 | — | — | 95/95 | 110/110 | 110/110 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 95/95 | 110/110 | 110/110 | 50/58 | 50/60 | 95/95 | 110/110 | 110/110 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 119/134 | 125/125 | 150/150 | 100/116 | 100/125 | 95/95 | 110/110 | 110/110 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 169/192 | 175/175 | 200/200 | 150/173 | 150/175 | 95/95 | 110/110 | 110/110 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 206/235 | 225/225 | 250/250 | 188/217 | 200/225 | 95/95 | 110/110 | 110/110 |
| RLRL-H180CS | No Heat | — | — | — | — | 79/79 | 90/100 | 90/100 | — | — | 79/79 | 90/100 | 90/100 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 79/79 | 90/100 | 90/100 | — | — | 79/79 | 90/100 | 90/100 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 119/134 | 125/125 | 150/150 | 100/116 | 100/125 | 79/79 | 90/100 | 90/100 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 169/192 | 175/175 | 200/200 | 150/173 | 150/175 | 79/79 | 90/100 | 90/100 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 206/235 | 225/225 | 250/250 | 188/217 | 200/225 | 79/79 | 90/100 | 90/100 |
| RLRL-H240CS | No Heat | — | — | — | — | 103/103 | 125/125 | 125/125 | — | — | 103/103 | 125/125 | 125/125 |
| | CE20C | 1 | 14.4/19.2 | 49.13/65.5 | 40/46.2 | 103/103 | 125/125 | 125/125 | 50/58 | 50/60 | 103/103 | 125/125 | 125/125 |
| | CE40C | 2 | 28.8/38.3 | 98.25/130.66 | 79.9/92.2 | 129/145 | 150/150 | 150/150 | 100/116 | 100/125 | 103/103 | 125/125 | 125/125 |
| | CE60C | 2 | 43.2/57.5 | 147.38/196.16 | 119.9/138.3 | 179/202 | 200/200 | 225/225 | 150/173 | 150/175 | 103/103 | 125/125 | 125/125 |
| | CE75C | 2 | 54/71.9 | 184.22/245.29 | 149.8/172.8 | 217/245 | 225/225 | 250/250 | 188/217 | 200/225 | 103/103 | 125/125 | 125/125 |

# XIX. HEATER KIT CHARACTERISTICS AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

**480 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION**

| Single Power Supply For Both Unit And Heater Kit | | | | | | | | | Separate Power Supply For Both Unit And Heater Kit | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHEEM Model Number | Heater Kit | | | | | Air Conditioner | | | Heater Kit | | Air Conditioner | | |
| | RXJJ-Heater Kit Nominal kW | No. of Sequence Steps | Rated Heater kW @ 480 V | Heater KBTU/Hr @ 480 V | Heater Amp. @ 480 V | Unit Min. Ckt Ampacity @ 480 V | Over Current Protective Device Size | | Min. Ckt. Ampacity 480V | Max. Fuse Size 480V | Min. Circuit Ampacity 480V | Over Current Protective Device Size | |
| | | | | | | | Min./Max. @ 480 V | Min./Max. @ 480 V | | | | Min./Max. @ 480 V | Min./Max. @ 480 V |
| RLRL-C180DL | No Heat | — | — | — | — | 38 | 45/50 | — | — | — | 38 | 45/50 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 38 | 45/50 | — | 29 | 30 | 38 | 45/50 | — |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 64 | 70/70 | — | 58 | 60 | 38 | 45/50 | — |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 93 | 100/100 | — | 87 | 90 | 38 | 45/50 | — |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 114 | 125/125 | — | 109 | 110 | — | — | — |
| RLRL-C240DL | No Heat | — | — | — | — | 49 | 60/60 | — | — | — | 49 | 60/60 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 49 | 60/60 | — | 29 | 30 | 49 | 60/60 | — |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 67 | 70/70 | — | 58 | 60 | 49 | 60/60 | — |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 95 | 100/100 | — | 87 | 90 | 49 | 60/60 | — |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 117 | 125/125 | — | 109 | 110 | 49 | 60/60 | — |
| RLRL-C180DM | No Heat | — | — | — | — | 40 | 45/50 | — | — | — | 40 | 45/50 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 40 | 45/50 | — | 29 | 30 | 40/0 | 45/50 | 0/0 |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 67 | 70/70 | — | 58 | 60 | 40/0 | 45/50 | 0/0 |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 95 | 100/100 | — | 87 | 90 | 40/0 | 45/50 | 0/0 |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 117 | 125/125 | — | 109 | 110 | 40/0 | 45/50 | 0/0 |
| RLRL-C240DM | No Heat | — | — | — | — | 52 | 60/60 | — | — | — | 52 | 60/60 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 52 | 60/60 | — | 29 | 30 | 52/0 | 60/60 | 0/0 |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 70 | 70/70 | — | 58 | 60 | 52/0 | 60/60 | 0/0 |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 99 | 100/100 | — | 87 | 90 | 52/0 | 60/60 | 0/0 |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 121 | 125/125 | — | 109 | 110 | 52/0 | 60/60 | 0/0 |

## XIX. HEATER KIT CHARACTERISTICS

### AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

**480 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION**

| RHEEM Model Number | Single Power Supply For Both Unit And Heater Kit | | | | | | | | Separate Power Supply For Both Unit And Heater Kit | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Heater Kit | | | | Air Conditioner | | | | Heater Kit | | Air Conditioner | | |
| | RXJJ-Heater Kit Nominal kW | No. of Sequence Steps | Rated Heater kW @ 480 V | Heater KBTU/Hr @ 480 V | Heater Amp. @ 480 V | Unit Min. Ckt Ampacity @ 480 V | Over Current Protective Device Size | | Min. Ckt. Ampacity 480V | Max. Fuse Size 480V | Min. Circuit Ampacity 480V | Over Current Protective Device Size | |
| | | | | | | | Min./Max. @ 480 V | Min./Max. @ 480 V | | | | Min./Max. @ 480 V | Min./Max. @ 480 V |
| RLRL-H180DR | No Heat | — | — | — | — | 38 | 45/50 | — | — | — | 38 | 45/50 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 38 | 45/50 | — | 29 | 30 | 38/0 | 45/50 | 0/0 |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 64 | 70/70 | — | 58 | 60 | 38/0 | 45/50 | 0/0 |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 93 | 100/100 | — | 87 | 90 | 38/0 | 45/50 | 0/0 |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 114 | 125/125 | — | 109 | 110 | 38/0 | 45/50 | 0/0 |
| RLRL-H240DR | No Heat | — | — | — | — | 49 | 60/60 | — | — | — | 49 | 60/60 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 49 | 60/60 | — | 29 | 30 | 49/0 | 60/60 | 0/0 |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 67 | 70/70 | — | 58 | 60 | 49/0 | 60/60 | 0/0 |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 95 | 100/100 | — | 87 | 90 | 49/0 | 60/60 | 0/0 |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 117 | 125/125 | — | 109 | 110 | 49/0 | 60/60 | 0/0 |
| RLRL-H180DS | No Heat | — | — | — | — | 40 | 45/50 | — | — | — | 40 | 45/50 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 40 | 45/50 | — | 29 | 30 | 40/0 | 45/50 | 0/0 |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 67 | 70/70 | — | 58 | 60 | 40/0 | 45/50 | 0/0 |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 95 | 100/100 | — | 87 | 90 | 40/0 | 45/50 | 0/0 |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 117 | 125/125 | — | 109 | 110 | 40/0 | 45/50 | 0/0 |
| RLRL-H240DS | No Heat | — | — | — | — | 52 | 60/60 | — | — | — | 52 | 60/60 | — |
| | CE20D | 1 | 19.2 | 65.5 | 23.1 | 52 | 60/60 | — | 29 | 30 | 52/0 | 60/60 | 0/0 |
| | CE40D | 2 | 38.4 | 131 | 46.2 | 70 | 70/70 | — | 58 | 60 | 52/0 | 60/60 | 0/0 |
| | CE60D | 2 | 57.6 | 196.5 | 69.3 | 99 | 100/100 | — | 87 | 90 | 52/0 | 60/60 | 0/0 |
| | CE75D | 2 | 72 | 245.63 | 86.6 | 121 | 125/125 | — | 109 | 110 | 52/0 | 60/60 | 0/0 |

## XIX. HEATER KIT CHARACTERISTICS (CONTINUED).
### AUXILIARY HEATER KITS CHARACTERISTICS AND APPLICATION (15 & 20 TON MODELS)

**600 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION**

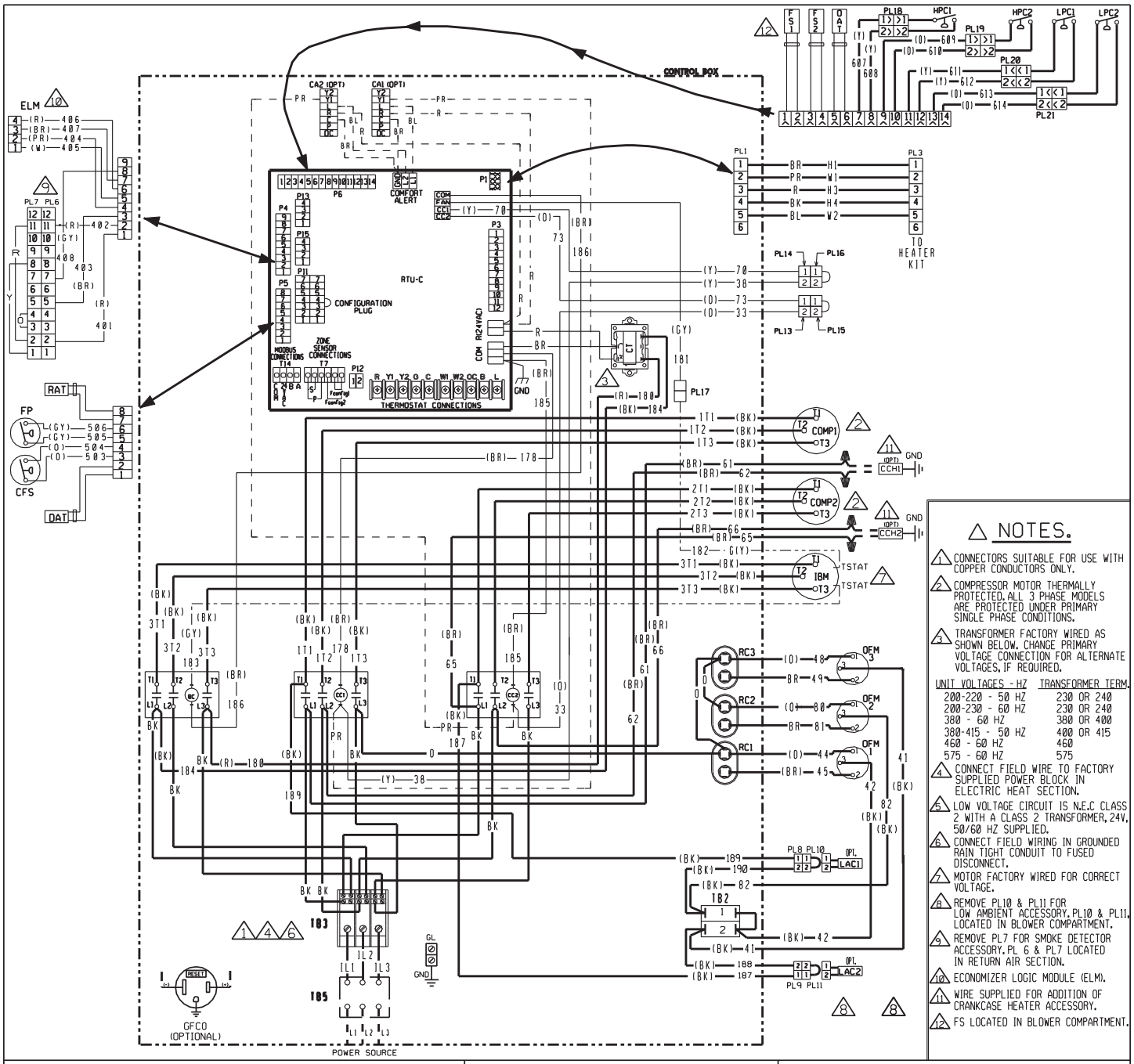
| RHEEM Model Number | Single Power Supply For Both Unit And Heater Kit | | | | | | | | Separate Power Supply For Both Unit And Heater Kit | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Heater Kit | | | | Air Conditioner | | | | Heater Kit | | Air Conditioner | | |
| | RXJJ-Heater Kit Nominal kW | No. of Sequence Steps | Rated Heater kW @ 600 V | Heater KBTU/Hr @ 600 V | Heater Amp. @ 600 V | Unit Min. Ckt Ampacity @ 600 V | Over Current Protective Device Size | | Min. Ckt. Ampacity 600V | Max. Fuse Size 600V | Min. Circuit Ampacity 600V | Over Current Protective Device Size | |
| | | | | | | | Min./Max. @ 600 V | Min./Max. @ 600 V | | | | Min./Max. @ 600 V | Min./Max. @ 600 V |
| RLRL-C180YL | No Heat | — | — | — | — | 29 | 35/35 | — | — | — | 29 | 35/35 | — |
| | CE20Y | 1 | 19.2 | 65.5 | 18.5 | 29 | 35/35 | — | 24 | 25 | 29/0 | 35/35 | 0/0 |
| | CE40Y | 2 | 38.4 | 131 | 37 | 51 | 60/60 | — | 47 | 50 | 29/0 | 35/35 | 0/0 |
| | CE60Y | 2 | 57.6 | 196.5 | 55.4 | 74 | 80/80 | — | 70 | 70 | 29/0 | 35/35 | 0/0 |
| | CE75Y | 2 | 72 | 245.63 | 69.3 | 92 | 100/100 | — | 87 | 90 | 29/0 | 35/35 | 0/0 |
| RLRL-C240YL | No Heat | — | — | — | — | 37 | 40/45 | — | — | — | 37 | 40/45 | — |
| | CE20Y | 1 | 19.2 | 65.5 | 18.5 | 37 | 40/45 | — | 24 | 25 | 37/0 | 40/45 | 0/0 |
| | CE40Y | 2 | 38.4 | 131 | 37 | 53 | 60/60 | — | 47 | 50 | 37/0 | 40/45 | 0/0 |
| | CE60Y | 2 | 57.6 | 196.5 | 55.4 | 76 | 80/80 | — | 70 | 70 | 37/0 | 40/45 | 0/0 |
| | CE75Y | 2 | 72 | 245.63 | 69.3 | 94 | 100/100 | — | 87 | 90 | 37/0 | 40/45 | 0/0 |
| RLRL-C180YM | No Heat | — | — | — | — | 30 | 35/35 | — | — | — | 30 | 35/35 | — |
| | CE20Y | 1 | 19.2 | 65.5 | 18.5 | 30 | 35/35 | — | 24 | 25 | 30/0 | 35/35 | 0/0 |
| | CE40Y | 2 | 38.4 | 131 | 37 | 53 | 60/60 | — | 47 | 50 | 30/0 | 35/35 | 0/0 |
| | CE60Y | 2 | 57.6 | 196.5 | 55.4 | 76 | 80/80 | — | 70 | 70 | 30/0 | 35/35 | 0/0 |
| | CE75Y | 2 | 72 | 245.63 | 69.3 | 94 | 100/100 | — | 87 | 90 | 30/0 | 35/35 | 0/0 |
| RLRL-C240YM | No Heat | — | — | — | — | 39 | 45/50 | — | — | — | 39 | 45/50 | — |
| | CE20Y | 1 | 19.2 | 65.5 | 18.5 | 39 | 45/50 | — | 24 | 25 | 39/0 | 45/50 | 0/0 |
| | CE40Y | 2 | 38.4 | 131 | 37 | 57 | 60/60 | — | 47 | 50 | 39/0 | 45/50 | 0/0 |
| | CE60Y | 2 | 57.6 | 196.5 | 55.4 | 80 | 80/80 | — | 70 | 70 | 39/0 | 45/50 | 0/0 |
| | CE75Y | 2 | 72 | 245.63 | 69.3 | 97 | 100/100 | — | 87 | 90 | 39/0 | 45/50 | 0/0 |

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




## △ NOTES.

1. △ CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. △ COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
3. △ TRANSFORMER FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTION FOR ALTERNATE VOLTAGES, IF REQUIRED.

| UNIT VOLTAGES - HZ | TRANSFORMER TERM. |
|---|---|
| 200-220 - 50 HZ | 230 OR 240 |
| 200-230 - 60 HZ | 230 OR 240 |
| 380 - 60 HZ | 380 OR 400 |
| 380-415 - 50 HZ | 400 OR 415 |
| 460 - 60 HZ | 460 |
| 575 - 60 HZ | 575 |

4. △ CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRIC HEAT SECTION.
5. △ LOW VOLTAGE CIRCUIT IS N.E.C CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
6. △ CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
7. △ MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
8. △ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11, LOCATED IN BLOWER COMPARTMENT.
9. △ REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
10. △ ECONOMIZER LOGIC MODULE (ELM).
11. △ WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY.
12. △ FS LOCATED IN BLOWER COMPARTMENT.

## COMPONENT CODE

| | |
|---|---|
| BC | BLOWER CONTACTOR |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DAT | DISCHARGE AIR SENSOR |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| RTU-C | ROOFTOP UNIT CONTROL |
| TB | TERMINAL BLOCK |
| | WIRE NUT |

## 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.)

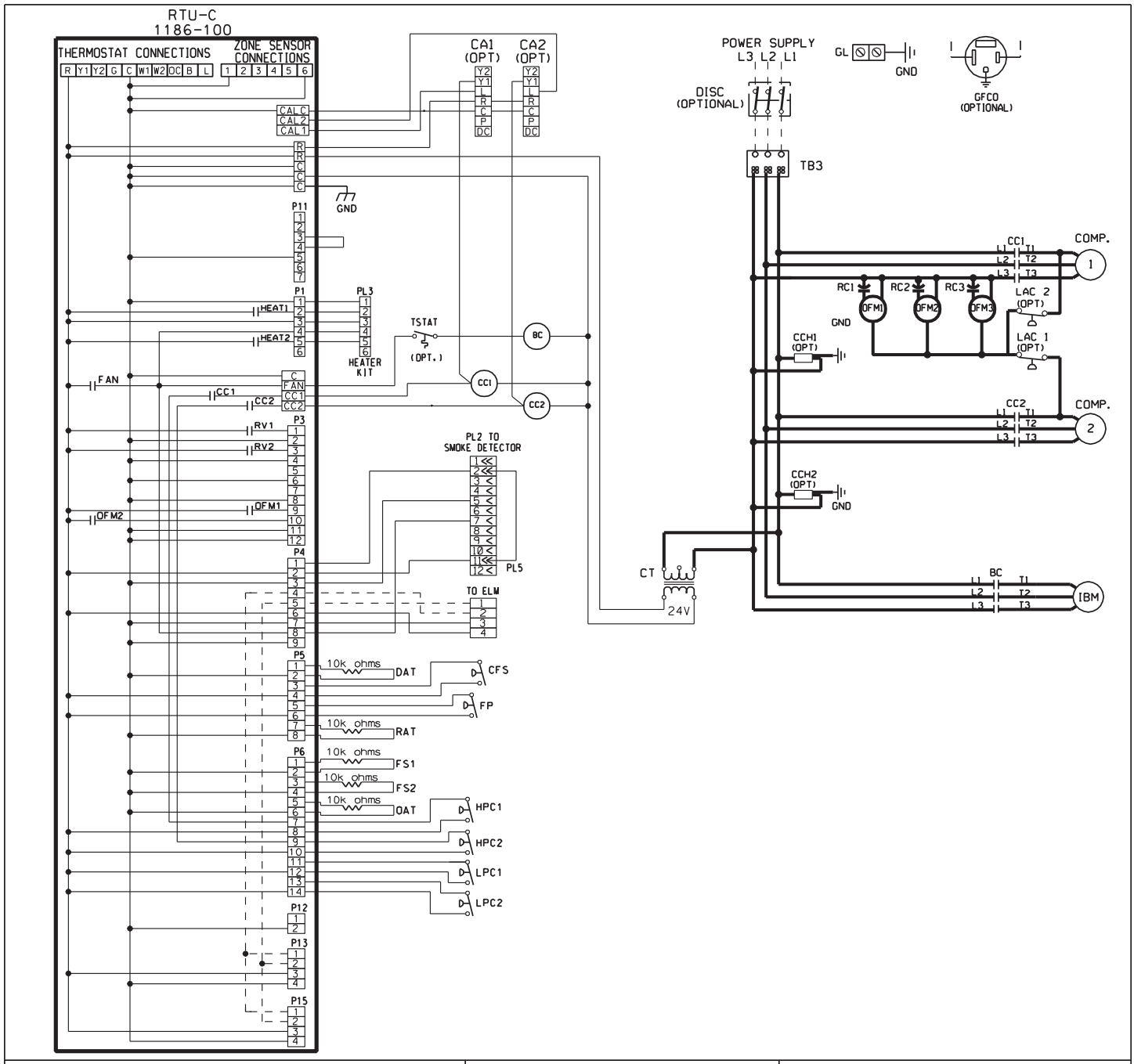
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

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

# WIRING DIAGRAM
# RLRL-C180
## 208-230/460/575V 3 PH, 60 HZ.
## PACKAGED A/C W/RTU-C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MGR | | 1-24-12 | 90-103079-12 | 00 |




## COMPONENT CODE

| | |
|---|---|
| BC | BLOWER CONTACTOR |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| IFC | INTEGRATED FURNACE CONTROL |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| MAS | MIX AIR SENSOR |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| SCC | SPACE COMFORT CONTROL |
| SE | SPARK ELECTRODE |
| TB | TERMINAL BLOCK |
| | WIRE NUT |

## 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.)

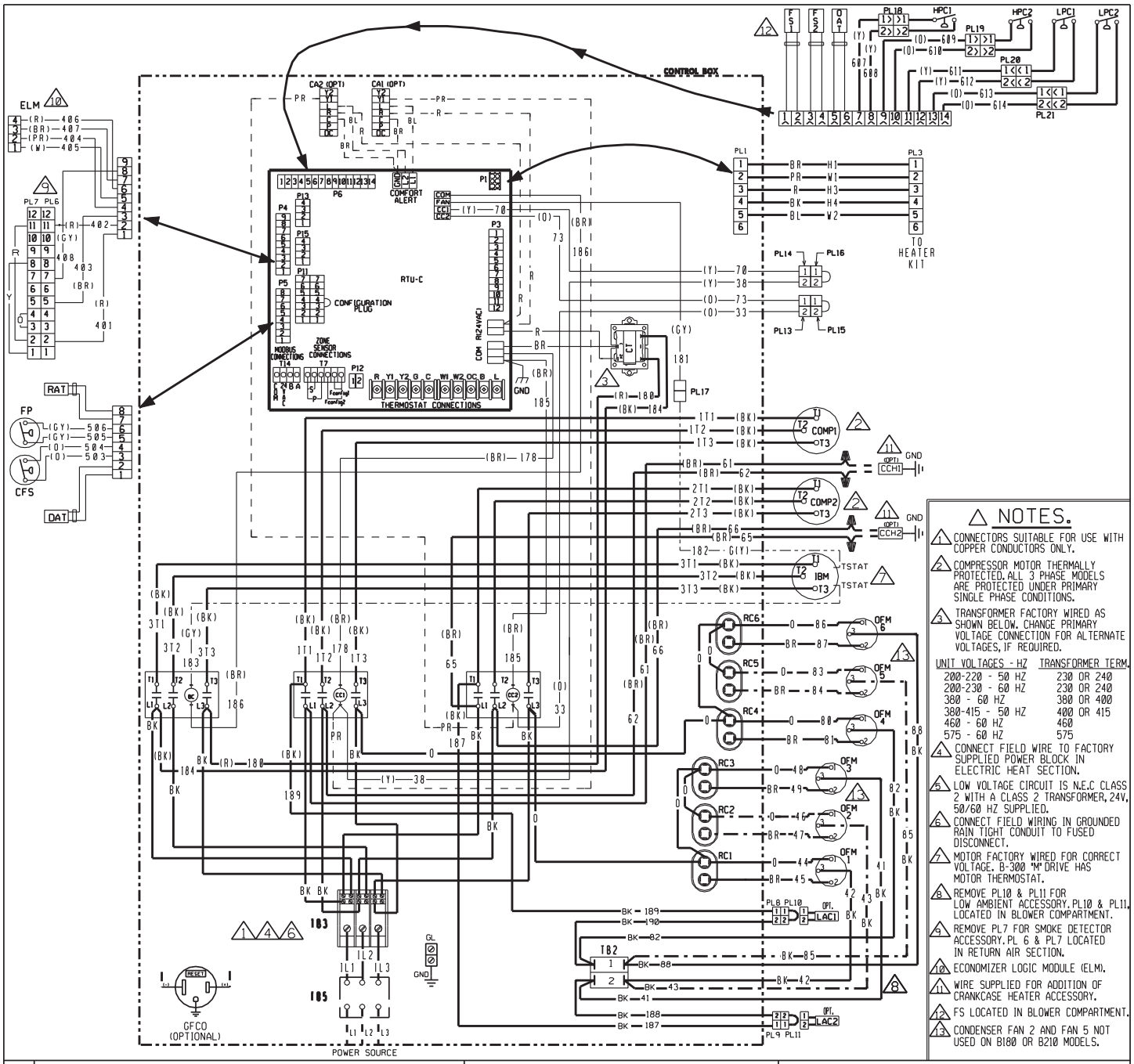
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

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

# WIRING SCHEMATIC
# RLRL-C180Ø
208-230/460/575V 3 PH, 60 HZ.
PACKAGED A/C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MGR | | 1-25-12 | 90-103263-12 | ØØ |




## NOTES.

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
3. TRANSFORMER FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTION FOR ALTERNATE VOLTAGES, IF REQUIRED.

| UNIT VOLTAGES - HZ | TRANSFORMER TERM. |
|---|---|
| 200-220 - 50 HZ | 230 OR 240 |
| 200-230 - 60 HZ | 230 OR 240 |
| 380 - 60 HZ | 380 OR 400 |
| 380-415 - 50 HZ | 400 OR 415 |
| 460 - 60 HZ | 460 |
| 575 - 60 HZ | 575 |

4. CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRIC HEAT SECTION.
5. LOW VOLTAGE CIRCUIT IS N.E.C CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
6. CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
7. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE. B-300 'M' DRIVE HAS MOTOR THERMOSTAT.
8. REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11, LOCATED IN BLOWER COMPARTMENT.
9. REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
10. ECONOMIZER LOGIC MODULE (ELM).
11. WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY.
12. FS LOCATED IN BLOWER COMPARTMENT.
13. CONDENSER FAN 2 AND FAN 5 NOT USED ON B180 OR B210 MODELS.

## COMPONENT CODE

| | |
|---|---|
| BC | BLOWER CONTACTOR |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DAT | DISCHARGE AIR SENSOR |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| RTU-C | ROOFTOP UNIT CONTROL |
| TB | TERMINAL BLOCK |
| | WIRE NUT |

## 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., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

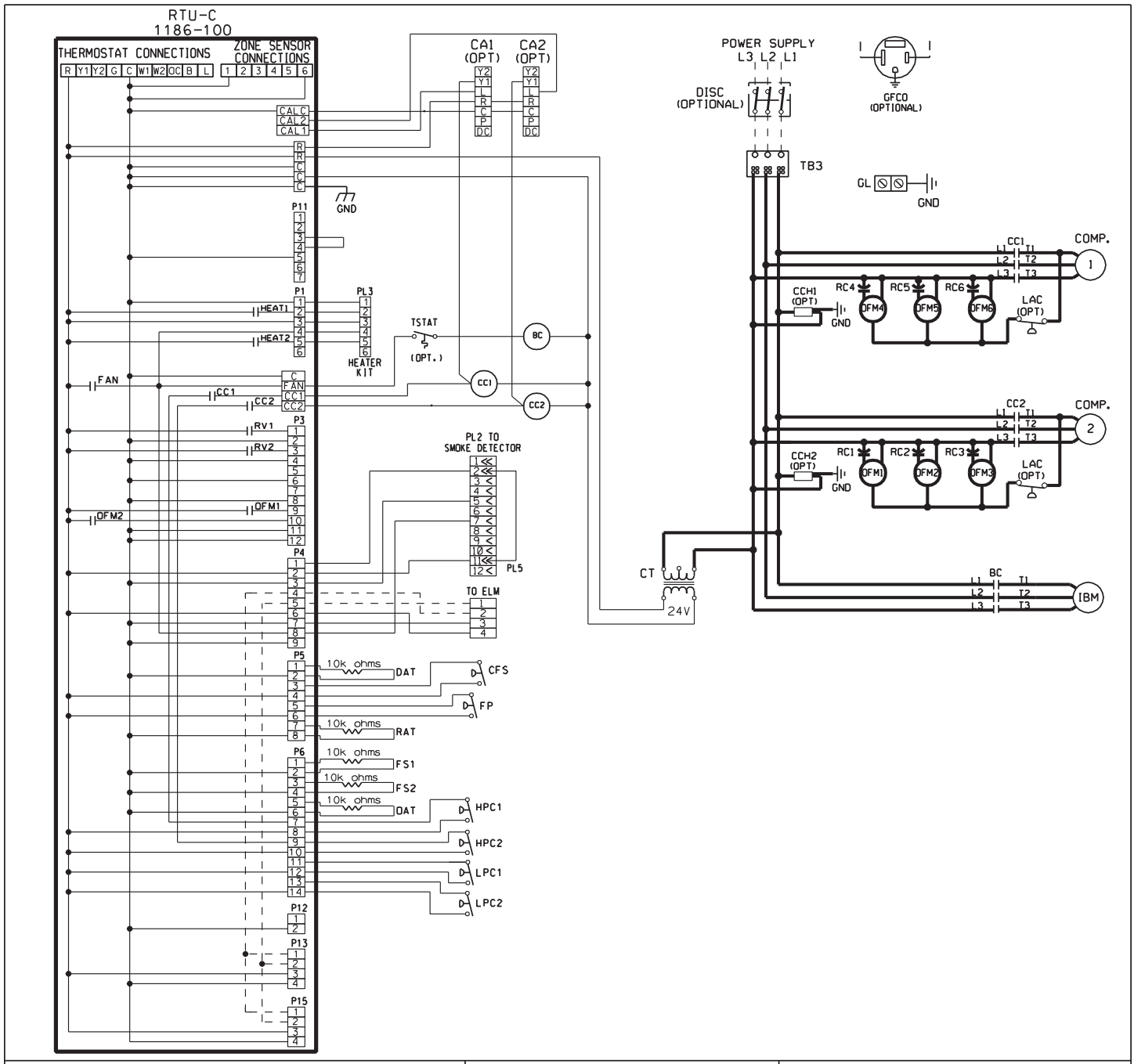
| | | | |
|---|---|---|---|
| BK | BLACK | O | ORANGE |
| BR | BROWN | PR | PURPLE |
| BL | BLUE | R | RED |
| G | GREEN | W | WHITE |
| GY | GRAY | Y | YELLOW |

# WIRING DIAGRAM
# (-)LNL-C180/210/240/300
# (-)LRL-C240

208-230/460/575V 3 PH, 60 HZ. PACKAGED A/C W/RTU-C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MGR | | 4-13-09 | 90-103079-03 | 02 |

90-103079-03 REV 01




## COMPONENT CODE

| | |
|---|---|
| BC | BLOWER CONTACTOR |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| IFC | INTEGRATED FURNACE CONTROL |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| MAS | MIX AIR SENSOR |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| SCC | SPACE COMFORT CONTROL |
| SE | SPARK ELECTRODE |
| TB | TERMINAL BLOCK |
| | WIRE NUT |

## 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.)

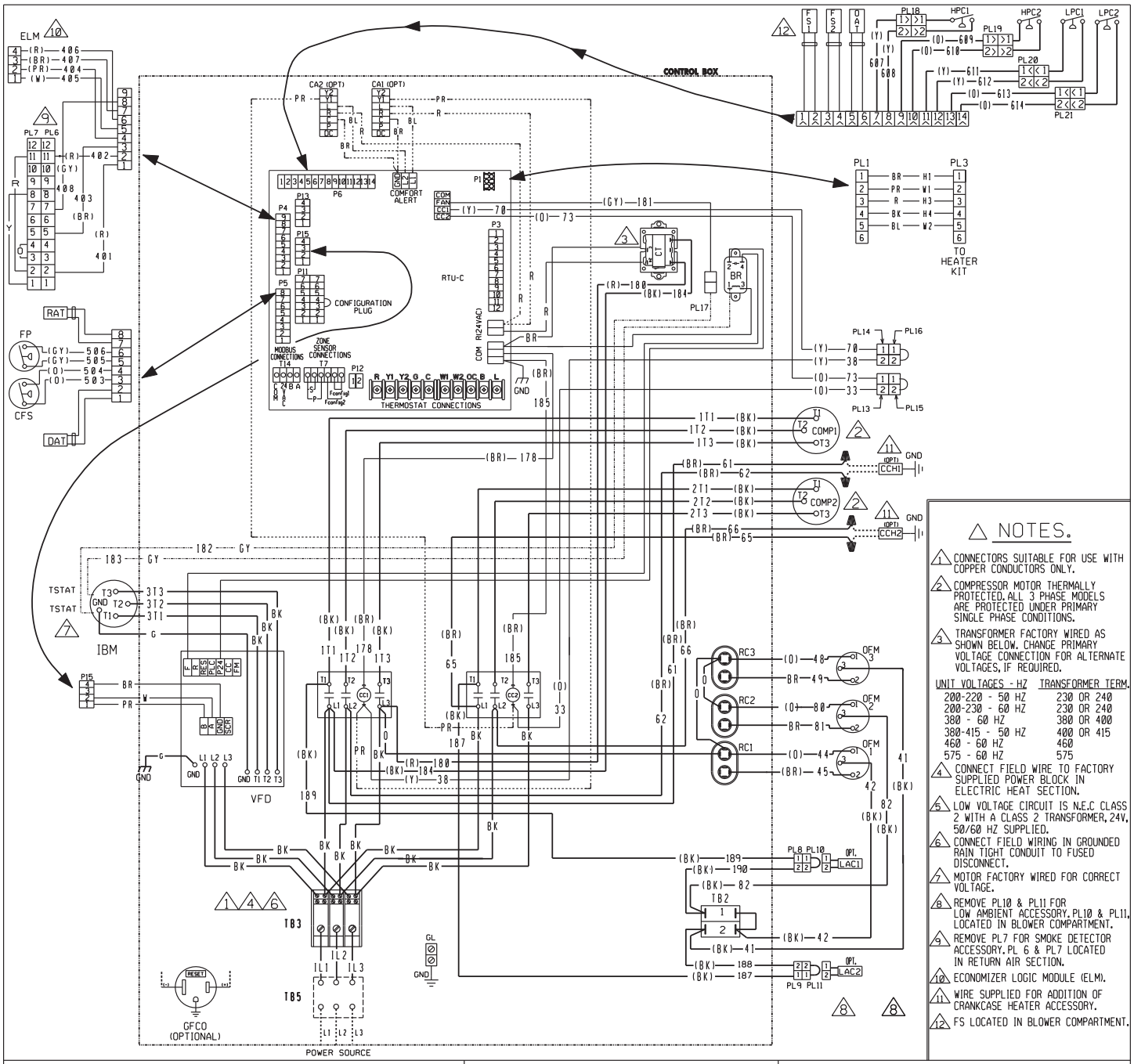
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

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

# WIRING SCHEMATIC
## (-)LNL-C180/210/240/300
## (-)LRL-C240
208-230/460/575V 3 PH, 60 HZ. PACKAGED A/C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MGR | | 7-16-09 | 90-103263-03 | 02 |




## NOTES.

1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
3. TRANSFORMER FACTORY WIRED AS SHOWN BELOW. CHANGE PRIMARY VOLTAGE CONNECTION FOR ALTERNATE VOLTAGES, IF REQUIRED.

| UNIT VOLTAGES - HZ | TRANSFORMER TERM. |
|---|---|
| 200-220 - 50 HZ | 230 OR 240 |
| 200-230 - 60 HZ | 230 OR 240 |
| 380 - 60 HZ | 380 OR 400 |
| 380-415 - 50 HZ | 400 OR 415 |
| 460 - 60 HZ | 460 |
| 575 - 60 HZ | 575 |

4. CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRIC HEAT SECTION.
5. LOW VOLTAGE CIRCUIT IS N.E.C CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
6. CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
7. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
8. REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11, LOCATED IN BLOWER COMPARTMENT.
9. REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
10. ECONOMIZER LOGIC MODULE (ELM).
11. WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY.
12. FS LOCATED IN BLOWER COMPARTMENT.

## COMPONENT CODE

| | |
|---|---|
| BC | BLOWER CONTACTOR |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DAT | DISCHARGE AIR SENSOR |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| RTU-C | ROOFTOP UNIT CONTROL |
| TB | TERMINAL BLOCK |
| VFD | VARIABLE FREQUENCY DRIVE |
| | WIRE NUT |

## 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.)

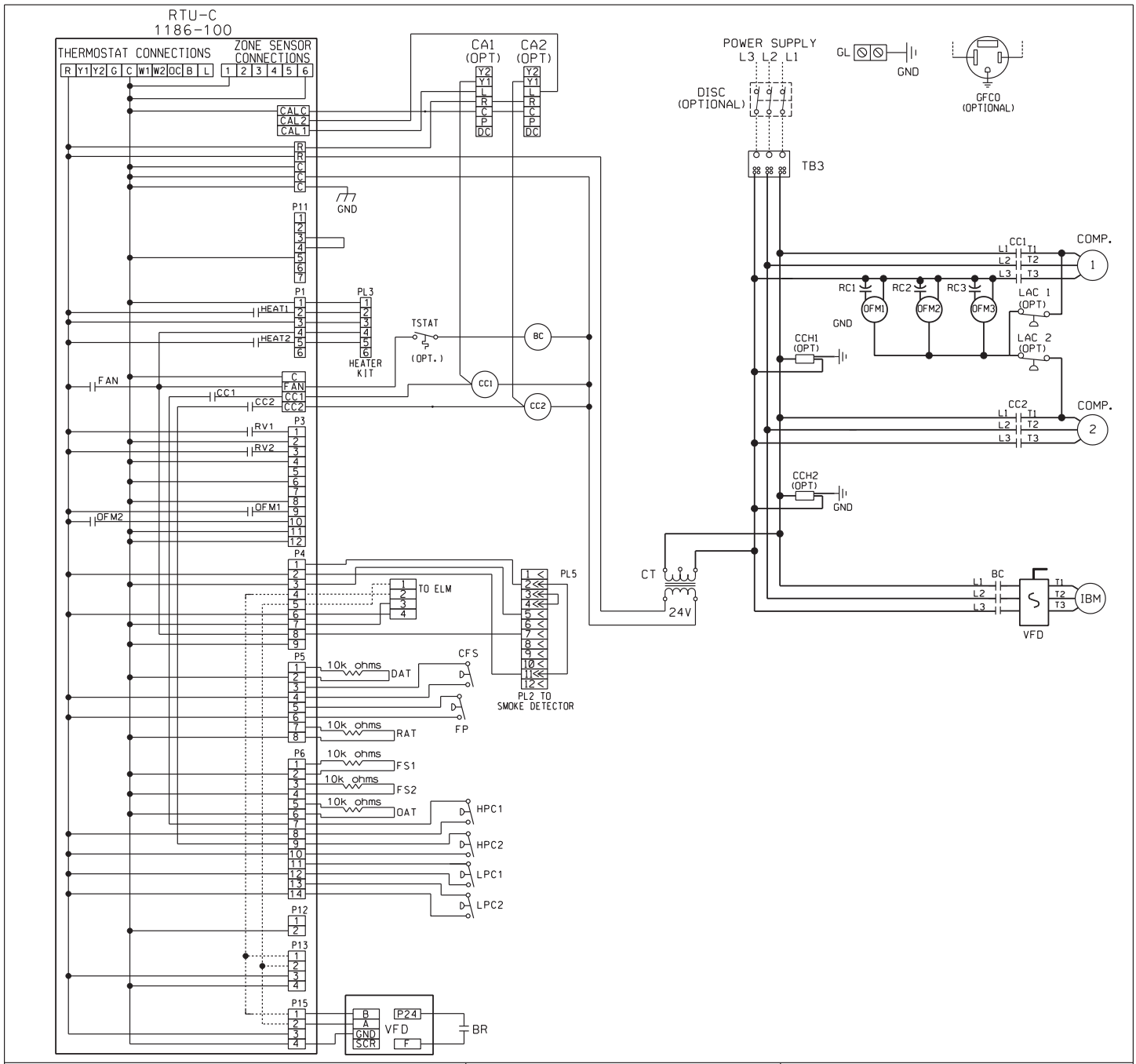
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

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

# WIRING DIAGRAM
# RLRL-H180 VFD
208-230/460V 3 PH, 60 HZ.
PACKAGED A/C W/RTU-C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MGR | | 8-17-12 | 90-103079-13 | Ø1 |




## COMPONENT CODE

| | | | |
|---|---|---|---|
| BC | BLOWER CONTACTOR | IFC | INTEGRATED FURNACE CONTROL |
| CA | COMFORT ALERT MODULE | LAC | LOW AMBIENT COOLING CONTROL |
| CC | COMPRESSOR CONTACTOR | LC | LIMIT CONTROL |
| CCH | CRANKCASE HEATER | LPC | LOW PRESSURE CONTROL |
| CFS | CLOGGED FILTER SWITCH | MAS | MIX AIR SENSOR |
| COMP | COMPRESSOR | OAT | OUTSIDE AIR SENSOR |
| CT | CONTROL TRANSFORMER | OFM | OUTDOOR FAN MOTOR |
| DISC | DISCONNECT SWITCH | PL | PLUG |
| FP | FAN PROVING | RAT | RETURN AIR SENSOR |
| FS | FREEZE SENSOR | RC | RUN CAPACITOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET | SCC | SPACE COMFORT CONTROL |
| GL | GROUND LUG | SE | SPARK ELECTRODE |
| GND | GROUND | TB | TERMINAL BLOCK |
| HPC | HIGH PRESSURE CONTROL | VFD | VARIABLE FREQUENCY DRIVE |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE | ⚠ | WIRE NUT |

## 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.)

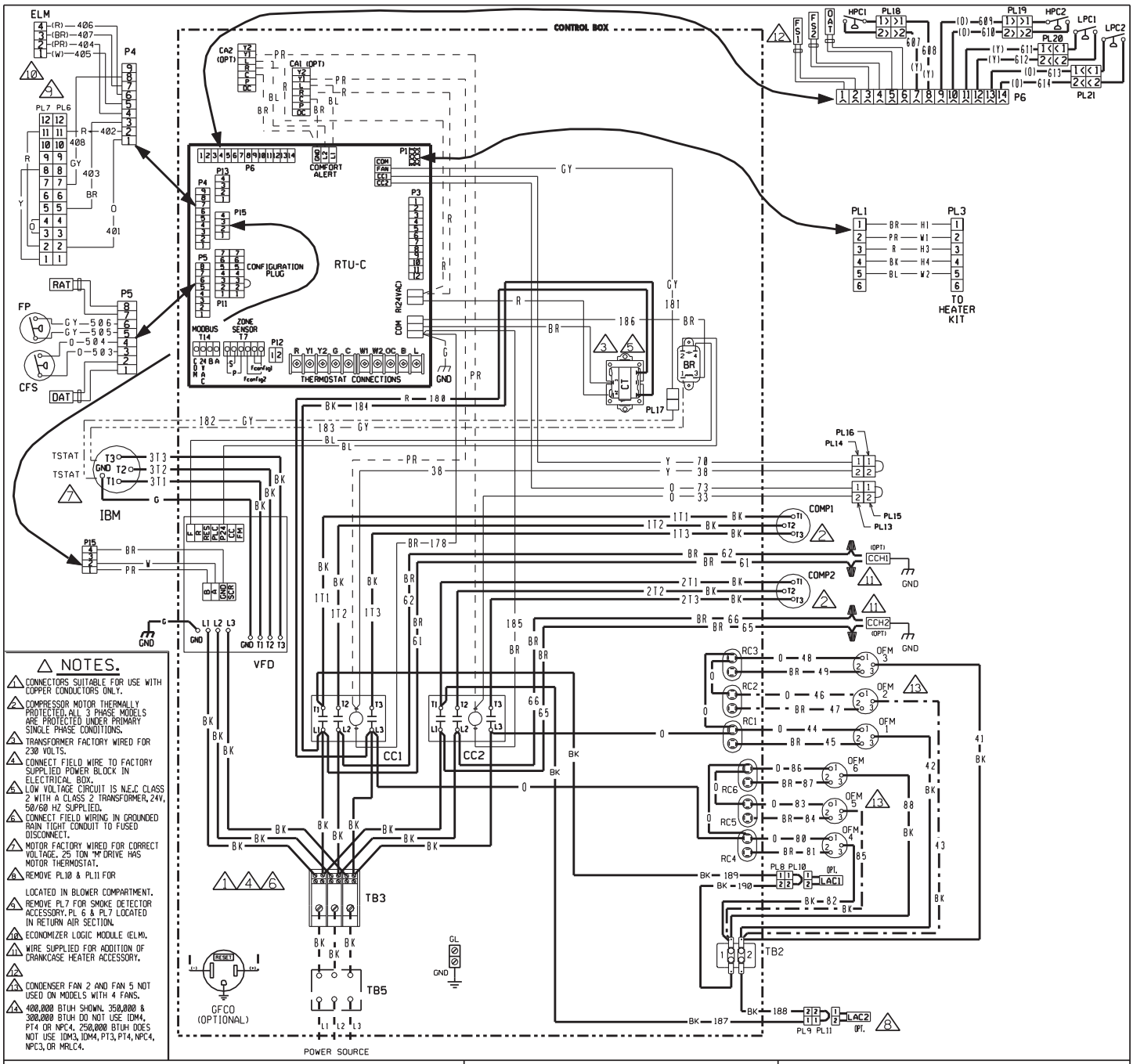
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

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

# WIRING SCHEMATIC
# RLRL-H180 VFD
208-230/460V 3 PH, 60 HZ.
PACKAGED A/C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MGR | | 8-20-12 | 90-103263-13 | 00 |




## COMPONENT CODE

| | |
|---|---|
| BR | BLOWER RELAY |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DAT | DISCHARGE AIR SENSOR |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| RTU-C | ROOFTOP UNIT CONTROL |
| TB | TERMINAL BLOCK |
| VFD | VARIABLE FREQUENCY DRIVE |
| | WIRE NUT |

## 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.)

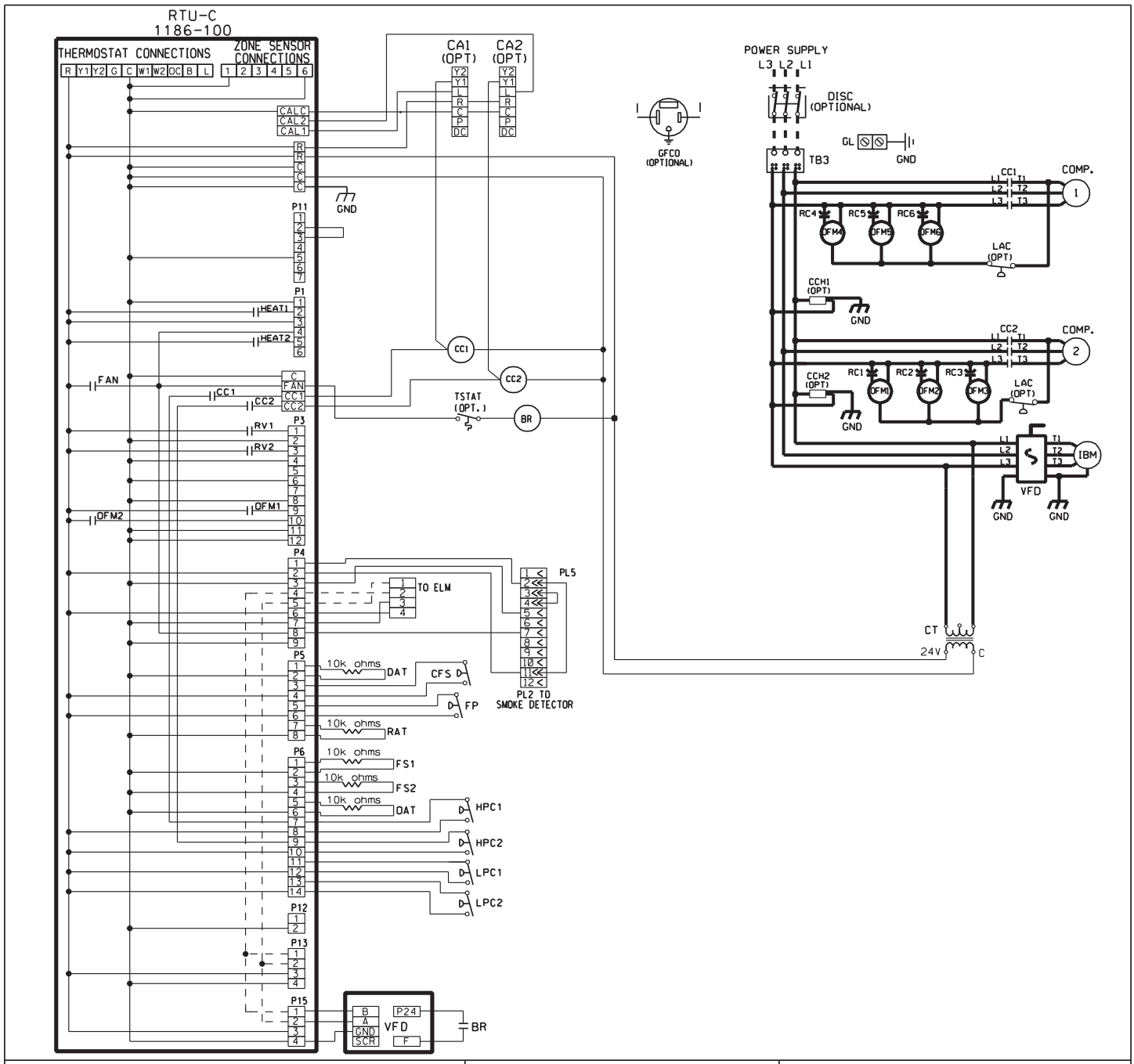
WARNING
- -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

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

# WIRING DIAGRAM
# VFD MODELS
## 208-230/460V 3 PH, 60 HZ.
## SELF-CONTAINED/PACKAGE A/C W/RTU-C

| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MCB | | 01-04-12 | 90-103079-09 | 01 |




## COMPONENT CODE

| | |
|---|---|
| BR | BLOWER RELAY |
| CA | COMFORT ALERT MODULE |
| CC | COMPRESSOR CONTACTOR |
| CCH | CRANKCASE HEATER |
| CFS | CLOGGED FILTER SWITCH |
| COMP | COMPRESSOR |
| CT | CONTROL TRANSFORMER |
| DAT | DISCHARGE AIR SENSOR |
| DISC | DISCONNECT SWITCH |
| FP | FAN PROVING |
| FS | FREEZE SENSOR |
| GFCO | GROUND FAULT CONVENIENCE OUTLET |
| GL | GROUND LUG |
| GND | GROUND |
| HPC | HIGH PRESSURE CONTROL |
| IBM | INDOOR BLOWER MOTOR BELT DRIVE |
| IFC | INTEGRATED FURNACE CONTROL |
| LAC | LOW AMBIENT COOLING CONTROL |
| LC | LIMIT CONTROL |
| LPC | LOW PRESSURE CONTROL |
| OAT | OUTSIDE AIR SENSOR |
| OFM | OUTDOOR FAN MOTOR |
| PL | PLUG |
| RAT | RETURN AIR SENSOR |
| RC | RUN CAPACITOR |
| RTU-C | ROOFTOP UNIT CONTROL |
| TB | TERMINAL BLOCK |
| VFD | VARIABLE FREQUENCY DRIVE |
| | WIRE NUT |

## 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., AND LOCAL CODES AS APPLICABLE.

## WIRE COLOR CODE

| | |
|---|---|
| BK__BLACK | O___ORANGE |
| BR__BROWN | PR__PURPLE |
| BL___BLUE | R___RED |
| G___GREEN | W___WHITE |
| GY__GRAY | Y___YELLOW |

# WIRING SCHEMATIC
# VFD MODELS
## 208-230/460V 3 PH, 60 HZ.
## SELF-CONTAINED/PACKAGE A/C W/RTU-C

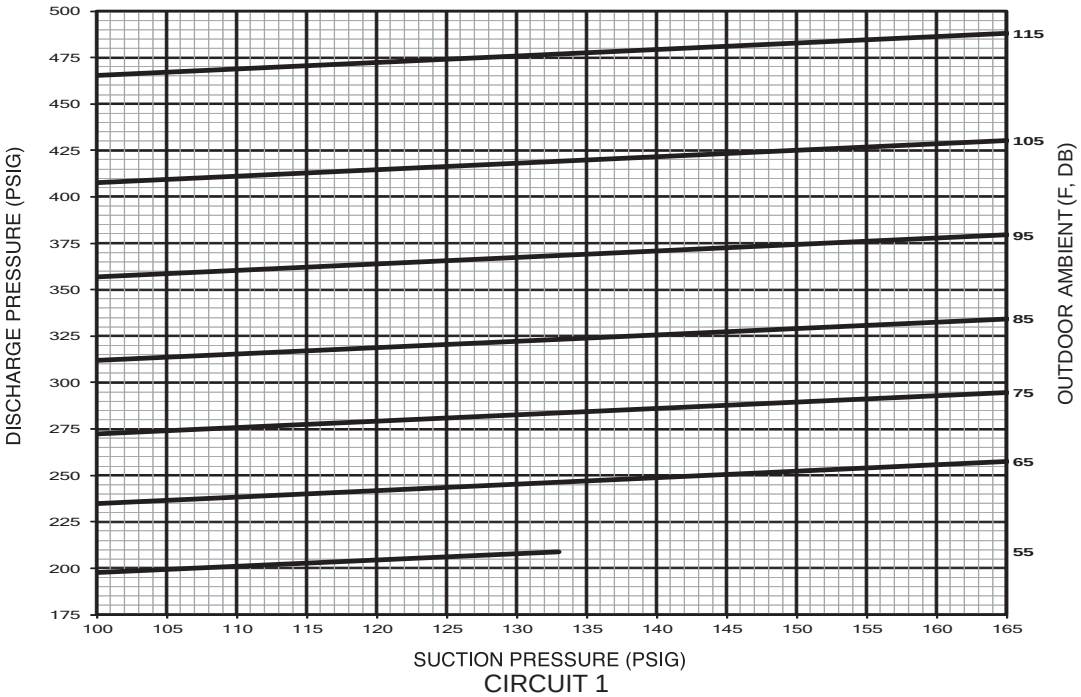
| DR. BY | APP. BY | DATE | DWG. NO. | REV |
|---|---|---|---|---|
| MCB | | 01-04-12 | 90-103263-09 | 00 |

# RLRL SERIES – 15 TON

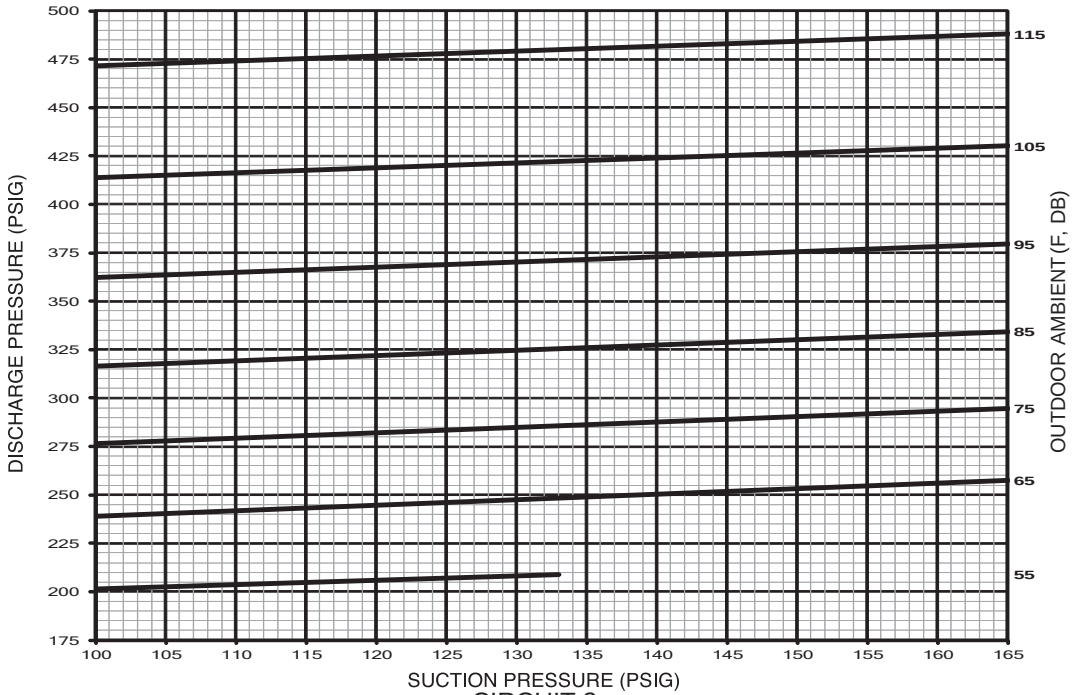
SYSTEM CHARGE CHART - REFRIGERANT 410A
15 TON, CIRCUITS 1 & 2

CAUTION:
1. BOTH COMPRESSORS MUST BE OPERATING BEFORE CHECKING REFRIGERANT CHARGE.
2. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND DISCHARGE.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND DISCHARGE 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.




CIRCUIT 1




CIRCUIT 2

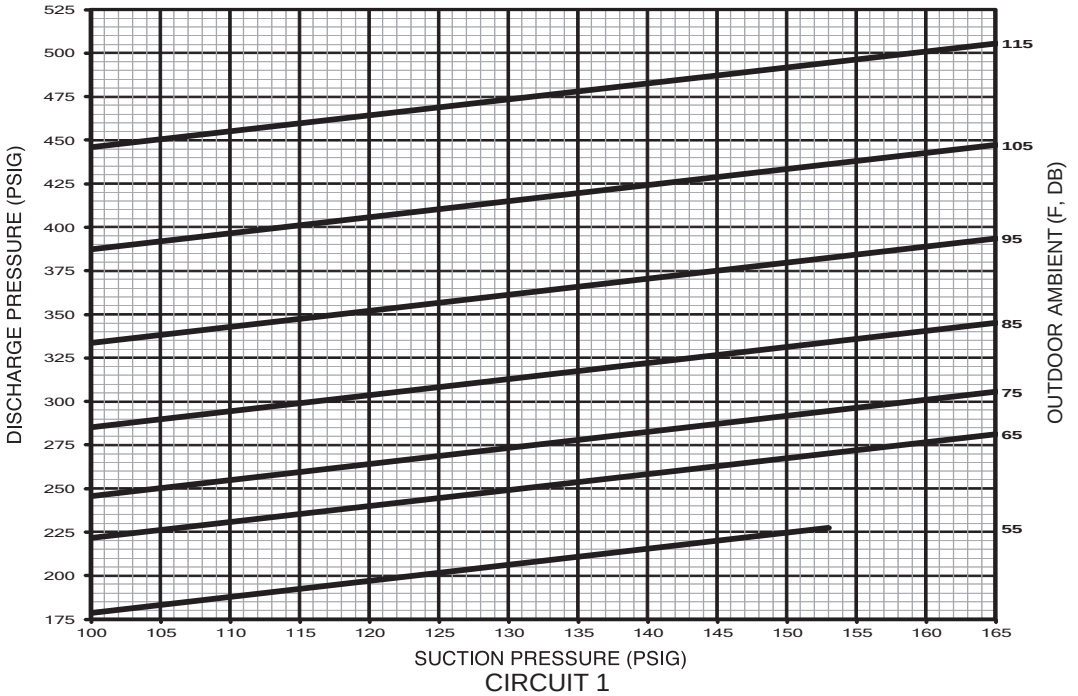
92-103943-01-00

# RLRL SERIES – 20 TON

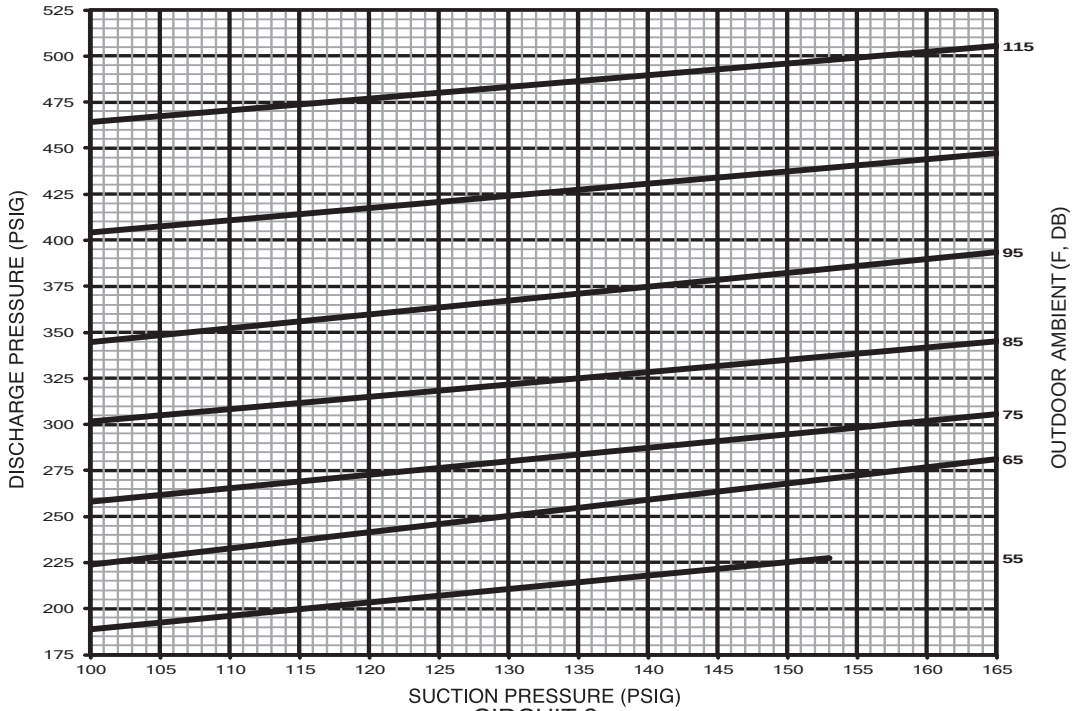
SYSTEM CHARGE CHART - REFRIGERANT 410A
20 TON, CIRCUITS 1 & 2

CAUTION:
1. BOTH COMPRESSORS MUST BE OPERATING BEFORE CHECKING REFRIGERANT CHARGE.
2. RETURN AIR TEMPERATURE MUST BE WITHIN COMFORT CONDITIONS BEFORE FINAL REFRIGERANT CHECK!

INSTRUCTIONS:
1. MEASURE PRESSURE AT COMPRESSOR SUCTION AND DISCHARGE.
2. MEASURE OUTDOOR AMBIENT TO UNIT.
3. PLACE (X) ON CHART WHERE SUCTION AND DISCHARGE 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.




CIRCUIT 1




CIRCUIT 2

92-103943-03-00