# Air-Cooled Series R™ Rotary Liquid Chiller

## Model RTAC

## 140 to 500 Tons (60 Hz)

## 140 to 400 Tons (50 Hz)

**Built For the Industrial and Commercial Markets**

November 2006

RLC-PRC006-EN

# Introduction

## You…

Like its chillers, Trane wants its relationships with customers to last. Trane is interested in maintaining long term, loyal relationships. This perspective means the point in time that a customer purchases a chiller is the beginning of a relationship, not the end. Your business is important, but your satisfaction is paramount.

## Designed by Customers….

Trane's RTAC was designed with the end user's requirements in mind. Reliability, sound, efficiency and physical size were primary design concerns with this latest generation machine. New technologies were applied to literally every major component. The result is an unparalleled engineering achievement in chiller design and manufacturing.

## What's New

The RTAC offers the same high reliability of Trane's previous air-cooled helical rotary design coupled with lowered sound levels, increased energy efficiency, reduced physical footprint due to its advanced design, low speed/direct drive compressor and proven Series R performance.

Some of the major advantages of the Model RTAC are:

- Lower sound levels
- Higher energy efficiency
- Smaller physical footprint
- HFC-134a optimized design

The Series R Model RTAC is an industrial grade design built for both the industrial and commercial markets. It is ideal for schools, hospitals, retailers, office buildings, Internet service providers and manufacturing facilities.

*Figure 1. Cutaway of RTAC air-cooled chiller*


1. Flooded Style Evaporator
2. Trane Helical-Rotary Compressor
3. Oil Separator
4. Low Sound Condenser Fans
5. Factory Installed and Tested Unit Controls and Starter
6. Smaller Physical Footprint

# Contents

# Features and Benefits

*Table 1. RTAC efficiency vs Ashrae 90.1*

| RTAC - Exceeding the Efficiency Standard | | | | | | |
|---|---|---|---|---|---|---|
| | Full Load Efficiency (EER*) | | | Part Load Efficiency (EER*) | | |
| Tonnage | **ASHRAE 90.1** | Standard Efficiency | High Efficiency | **ASHRAE 90.1** | Standard Efficiency | High Efficiency |
| 140 | 9.6 | 9.7 | 10.3 | 10.4 | 13.5 | 14.0 |
| 155 | 9.6 | 9.8 | 10.4 | 10.4 | 13.6 | 14.1 |
| 170 | 9.6 | 9.9 | 10.4 | 10.4 | 13.9 | 14.4 |
| 185 | 9.6 | 9.7 | 10.3 | 10.4 | 13.7 | 14.2 |
| 200 | 9.6 | 9.6 | 10.1 | 10.4 | 13.3 | 13.9 |
| 225 | 9.6 | 9.6 | 10.2 | 10.4 | 13.4 | 14.0 |
| 250 | 9.6 | 9.6 | 10.1 | 10.4 | 13.6 | 13.8 |
| 275 | 9.6 | 9.8 | 10.5 | 10.4 | 13.3 | 13.7 |
| 300 | 9.6 | 9.6 | 10.2 | 10.4 | 13.3 | 13.6 |
| 350 | 9.6 | 9.6 | 10.5 | 10.4 | 13.1 | 15.3 |
| 400 | 9.6 | 9.6 | 10.1 | 10.4 | 14.6 | 14.5 |
| 450 | 9.6 | 9.6 | n/a | 10.4 | 14.7 | n/a |
| 500 | 9.6 | 9.6 | n/a | 10.4 | 14.9 | n/a |

COP = EER/3.414.
Efficiencies given for 60 Hz units

## ASHRAE Standard 90.1 and RTAC World Class Energy Efficiency…

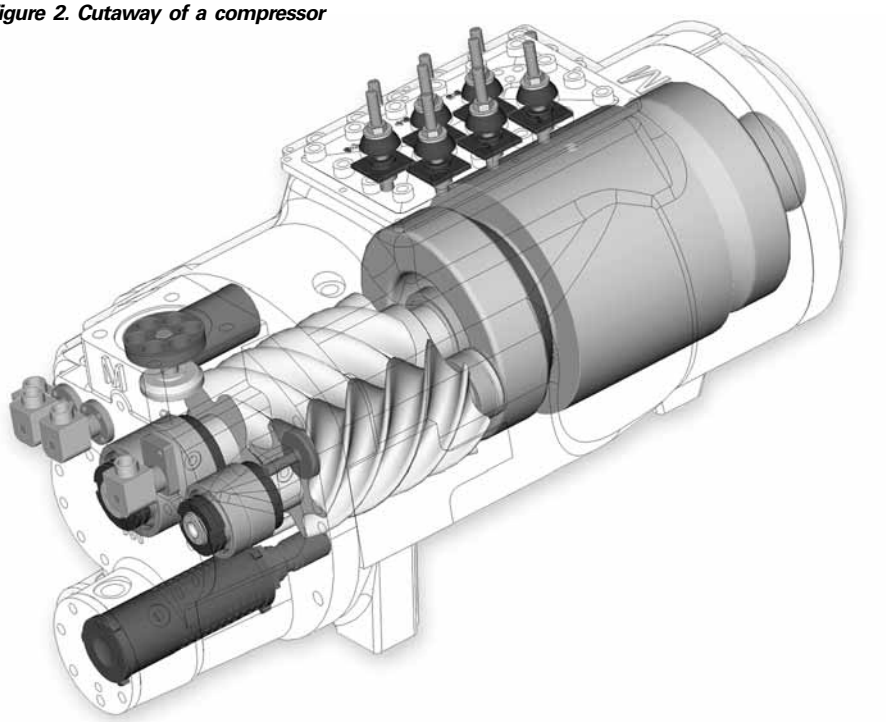
The importance of energy efficiency cannot be understated. Fortunately, ASHRAE has created a guideline emphasizing its importance. Nonetheless, energy is often dismissed as an operational cost over which the owner has little control. That perception results in missed opportunities for energy efficiency, reduced utility bills, and higher profits. Lower utility bills directly affect profitability. Every dollar saved in energy goes directly to the bottom line. Trane's RTAC is one way to maximize your profits.

**ASHRAE Standard 90.1 & Executive Order** - New technology applied to the design, controls, and manufacturing have created excellent efficiency levels in the RTAC that are helping to push industry minimums to new heights. All Trane air-cooled chillers meet the new efficiency levels mandated by ASHRAE Standard 90.1. This new standard requires higher efficiencies than past technologies can deliver. The US Federal Government has adopted standard 90.1 and, in some cases, requires even higher efficiencies. Federal Executive Order mandates energy consuming devices procured must be in the top 25% of their class. In the case of chillers, that product standard is ASHRAE 90.1. Trane's RTAC meets and exceeds the efficiency requirements of 90.1, while the high efficiency RTAC can meet the "stretch goals" of Executive Order.

**Precise Capacity Control.** Trane's patented unloading system allows the compressor to modulate infinitely and exactly match building loads. At the same time chilled water temperatures will be maintained within +/- 1/2°F [0.28°C] of setpoint. Reciprocating and screw chillers with stepped capacity control do well to maintain chilled water temperatures within 2°F [1.1°C] of setpoint. Stepped control also results in overcooling your space because rarely does the capacity of the machine match the building load. The result can be 10% higher energy bills. Trane's RTAC optimizes the part load performance of your machine for energy efficiency, precise control for process applications, and your personal comfort regardless of the weather outside.

# Features and Benefits

*Figure 2. Cutaway of a compressor*



## Excellent Reliability…

A buildings environment is expected to be comfortable. When it is, no one says a word. If it's not… that's a different story. The same is true with chillers. No one ever talks about chillers, yet alone compressors, until they fail, and tenants are uncomfortable and productivity is lost. Trane's helical rotary compressors have been designed and built to stay running when you need them.

**Fewer moving parts.** Trane's helical rotary compressors have only two major rotating parts: the male and female rotor. A reciprocating compressor can have more than 15 times that number of critical parts. Multiples of pistons, valves, crankshafts, and connecting rods in a reciprocating unit all represent different failure paths for the compressor. In fact, reciprocating compressors can easily have a failure rate four times of a helical rotor. Combine that with two to three reciprocating compressors for each helical rotary compressor on chillers of equal tonnage, and statistics tell you it's a matter of time before you lose a reciprocating compressor.

**Robust components.** Helical rotary compressors are precisely machined using state of the art processes from solid metal bar stock. Tolerances are maintained within a micron or less than a tenth of the diameter of a human hair. The resulting compressor is a robust yet highly sophisticated assembly capable of ingesting liquid refrigerant without risk of damage. Contrast this to a reciprocating compressor, which can be destroyed by a single slug of liquid.

**Condenser coils.** Trane's condenser coils are manufactured with the same philosophy as the compressors; they're built to last. Even though manufacturing processes have allowed thinner and thinner materials in their assembly, with obvious material and manufacturing savings, Trane's coil material did not change with the RTAC generation of air cooled chillers. Substantial condenser fins, that do not require additional coating in non-corrosive environments, contribute to the highest reliability standards for air-cooled chillers in the industry.

# Features and Benefits

## Superior Control

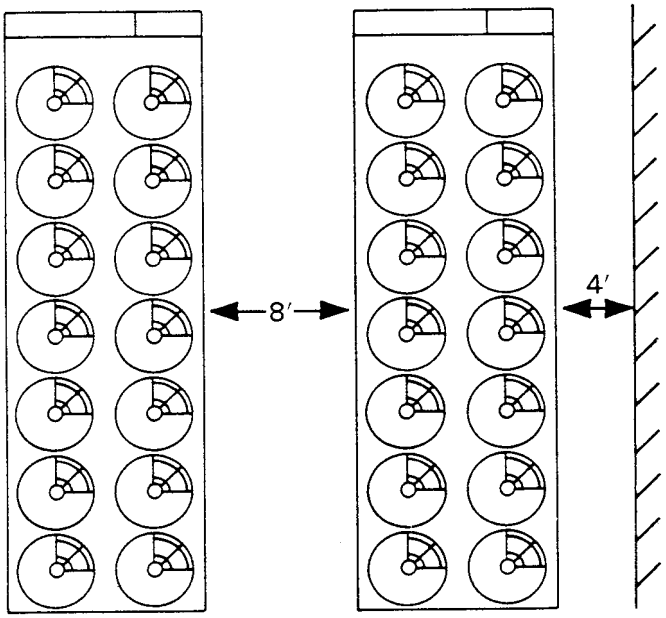
The Adaptive Control™ microprocessor system enhances the air-cooled Series R chiller by providing the very latest chiller control technology. With the Adaptive Control microprocessor, unnecessary service calls and unhappy tenants are avoided. The unit is designed not to trip or unnecessarily shut down. Only when the Tracer™ chiller controllers have exhausted all possible corrective actions and the unit is still violating an operating limit will the chiller shut down. Controls on other equipment typically shut down the chiller, usually just when it is needed the most.

**For example:**
A typical five-year-old chiller with dirty coils might trip-out on high pressure cutout on a 100°F [38°C] day in August. A hot day is just when comfort cooling is needed the most. In contrast, the air-cooled Series R chiller with an Adaptive Control microprocessor will stage fans on, modulate electronic expansion valve, and modulate slide valve position as it approaches a high pressure cutout, thereby keeping the chiller on-line when you need it the most.

## Simple Installation

- **Compact Physical Size.** The Trane Model RTAC chiller averages a 20% reduction in physical footprint, while the greatest change is actually 40% smaller when compared against the previous design. This improvement makes the RTAC the smallest air-cooled chiller in the industry and a prime candidate for installations that have space constraints. All physical sizes were changed without sacrificing the side clearances needed to supply fresh airflow without coil starvation.
- **Close Spacing Installation.** The air-cooled Series R™ Chiller has the tightest recommended side clearance in the industry, four feet for maximum performance. In situations where equipment must be installed with less clearance than recommended, which frequently occurs in retrofit applications, restricted airflow is common. Conventional chillers may not work at all. However, the air-cooled Series R chiller with Adaptive Control™ microprocessor will make as much chilled water as possible given the actual installed conditions, stay on line during unforeseen abnormal conditions, and optimize the unit performance. Consult your Trane sales engineer for more details.
- **Factory Testing Means Trouble-Free Start-Up.** All air-cooled Series R chillers are given a complete functional test at the factory. This computer-based test program completely checks the sensors, wiring, electrical components, microprocessor function, communication capability, expansion valve performance and fans. In addition, each compressor is run and tested to verify capacity and efficiency. Where applicable, each unit is factory preset to the customer's design conditions; an example would be leaving liquid temperature setpoint. The result of this test program is that the chiller arrives at the job site fully tested and ready for operation.
- **Factory Installed and Tested Controls/ Options Speed Installation.** All Series R chiller options, including main power supply disconnect, low ambient control, ambient temperature sensor, low ambient lockout, communication interface and ice making controls, are factory installed and tested. Some manufacturers send accessories in pieces to be field installed. With Trane, the customer saves on installation expense and has assurance that ALL chiller controls/options have been tested and will function as intended.

***Figure 3. Minimum installation clearance requirements for no performance degradation***



# Features and Benefits

**Unit Performance Testing**

The ARI Certification Program has had a certification program covering air-cooled water chillers for many years. With this in mind, customers may ask, "Do I need to factory performance test my chiller?"

Trane began promoting factory performance tests for water-cooled water chillers in 1984 for the same reasons it is valid today for air-cooled water chillers, to show we stand behind the products we design and build.

The benefits of a performance test include verification of performance, prevention of operational problems, and assurance of a smooth start-up. Only a performance test conducted in a laboratory or laboratory grade facility will confirm both performance and operation of a specific chiller.

While most factory performance tests go smoothly, should problems occur, Trane personnel can quickly correct them and the chiller will ship as specified. Job site diagnosis, ordering of parts, and waiting for delivery of replacement components is significantly reduced.

A factory performance test reduces start-up time, thereby saving job site expense. A chiller that has been tested is operation and performance-proven. This allows the installing contractor to concentrate on proper electrical wiring and water piping, and the service technicians to concentrate on proper refrigerant charge, safeties diagnosis and initial logging of the chiller. Means of obtaining full load on the chiller and proving its performance do not have to be determined by engineers or contractors, thus saving time. The certified test report documents performance for the unit as built. In addition, factory testing significantly reduces commissioning time and risk by re-introducing manufacturer responsibility, where its mitigation should reside.

When a factory performance test is requested, the test can be conducted at the specified design conditions for all packaged chillers from 70 to 500 tons. The test facility has the capability to control ambient test conditions to assure our customers that our chillers will perform as predicted.

***Figure 4. Air-cooled Run Test Facility shown with an RTAC 500 ton unit***

# Features and Benefits

## Options

**High Efficiency/Performance Option**
This option provides oversized heat exchangers for two purposes. One, it allows the unit to be more energy efficient. Two, the unit will have enhanced operation in high ambient conditions.

**Low Temperature Brine**
The hardware and software on the unit are factory set to handle low temperature brine applications (less than 40°F [4.4°C]).

**Ice Making**
The unit controls are factory set to handle ice making for thermal storage applications.

**Tracer Summit Communication Interface**
Permits bi-directional communication to the Trane Integrated Comfort™ system.

**LonTalk (LCI-C) Communications Interface**
Provides the LonMark chiller profile inputs/outputs for use with a generic building automation system.

**Remote Input Options**
Permits remote chilled liquid setpoint, remote current limit setpoint, or both by accepting a 4-20 mA or 2-10 Vdc analog signal.

**Remote Output Options**
Permits alarm relay outputs, ice making outputs, or both.

**Architectural Louvered Panels**
Louvered panels cover the complete condensing coil and service area beneath the condenser.

**Coil Protection**
Louvered panels protect the condenser coils only.

**Access Protection**
A coated wire mesh that covers the access area under the condenser coils.

**Wye-Delta Compressor Start Type**
This option provides a reduced inrush starter. Wye-Delta starters are standard on 200-230 volt machines.

**Condenser Corrosion Protection**
Copper fins and CompleteCoat are available on all size units for corrosion protection. Job site conditions should be matched with the appropriate condenser fin materials to inhibit coil corrosion and ensure extended equipment life. The CompleteCoat option provides fully assembled coils with a flexible dip and bake epoxy coating.

**TEAO Condenser Fan Motors**
Totally enclosed air-over (TEAO) motors completely seal the motor windings to prevent exposure to ambient conditions.

**Low Ambient Option**
The low ambient option provides special control logic and variable frequency drives on the condenser fan circuits to permit low temperature start-up and operation down to 0°F [-18°C].

**Single/Dual Incoming Power Line Connection**
Single or dual points of termination are available for incoming power line connections*. Units with 3-4 compressors must order circuit breakers with the single point connection option.
*Some restrictions may apply.

**Convenience Outlet**
Provides a 15 amp, 115 volt (60 Hz) convenience outlet on the unit.

**Remote Evaporator**
The remote evaporator option is available on the RTAC 140-250 ton units. This option provides a pre-engineered method of installing the evaporator and all related components indoors. Remote evaporator installations allow the water loop to remain indoors to prevent freezing, thus eliminating the addition of glycol to the system and the resulting performance degradation. Please contact your Trane Sales Representative for split system design guidelines found in Engineering Bulletin RLC-PRB014-EN.

**High Ambient Option**
The high ambient option consists of special control logic to permit high ambient (up to 125°F [51°C]) operation. This option offers the best performance when coupled with the high efficiency performance option.

**Non-Fused Power Disconnect Switch**
The non-fused molded case disconnect switch (UL approved) is used to disconnect the chiller from main power and comes pre-wired from the factory with terminal block power connections. The external operator handle is lockable.

**Circuit Breaker**
A HACR rated molded case capacity circuit breaker (UL approved) is available. The circuit breaker can also be used to disconnect the chiller from main power with a through-the-door handle and comes pre-wired from the factory with terminal block power connections. The external operator handle is lockable.

**Neoprene Isolators**
Isolators provide isolation between chiller and structure to help eliminate vibration transmission. Neoprene isolators are more effective and recommended over spring isolators.

**Flange Kit**
Provides a raised-face flange kit that converts the grooved pipe evaporator water connections to flange connectors.

**Human Interfaces**
The Trane air-cooled Model RTAC chiller offers two easy-to-use operator interface panels, the EasyView and the DynaView.

DynaView is an LCD touchscreen display that is navigated by file tabs. This is an advanced interface that allows the user to access any important information concerning setpoints, active temperatures, modes, electrical data, pressures, and diagnostics.

**Adaptive Safety Controls**
A centralized microcomputer offers a higher level of machine protection. Since the safety controls are smarter, they limit compressor operation to avoid compressor or evaporator failures, thereby minimizing nuisance shutdown. Tracer™ Chiller Controls directly senses the control variables that govern the operation of the chiller: motor current draw, evaporator pressure and condenser pressure. When any one of these variables approaches a limit condition where damage may occur to the unit or shutdown on a safety, Tracer Chiller Controls takes corrective action to avoid shutdown and keep the chiller operating. This happens through combined actions of compressor slide valve modulation, electronic expansion valve modulation and fan staging. Tracer Chiller Controls optimizes total chiller power consumption during normal operating conditions. During abnormal operating conditions, the microprocessor will continue to optimize chiller performance by taking the corrective action necessary to avoid shutdown. This keeps cooling capacity available until the problem can be solved. Whenever possible, the chiller is allowed to perform its function; making chilled water. In addition, microcomputer controls allow for more types of protection such as over and under voltage. Overall, the safety controls help keep the building or process running and out of trouble.

*Figure C1. DynaView operator interface*


**Standalone Controls**
Interface to standalone units is very simple; only a remote auto/stop for scheduling is required for unit operation. Signals from the chilled water pump contactor auxiliary or a flow switch are wired to the chilled waterflow interlock. Signals from a time clock or some other remote device are wired to the external auto/stop input.

**Standard Features**

- **External Auto/Stop** — A jobsite provided contact closure will turn the unit on and off.
- **Chilled Waterflow Interlock** — A jobsite provided contact closure from a chilled water pump contactor or a flow switch is required and will allow unit operation if a load exists. This feature will allow the unit to run in conjunction with the pump system.
- **External Interlock** — A jobsite supplied contact opening wired to this input will turn the unit off and require a manual reset of the unit microcomputer. This closure is typically triggered by a jobsite supplied system such as a fire alarm.
- **Chilled Water Pump Control** — Unit controls provide an output to control the chilled water pump(s). One contact closure to the chiller is all that is required to initiate the chilled water system. Chilled water pump control by the chiller is a requirement on the Air-Cooled Series R.
- **Chilled Water Temperature Reset** — Reset can be based on return water temperature or outdoor air temperature.

# Controls

## Generic Building Automation System Controls

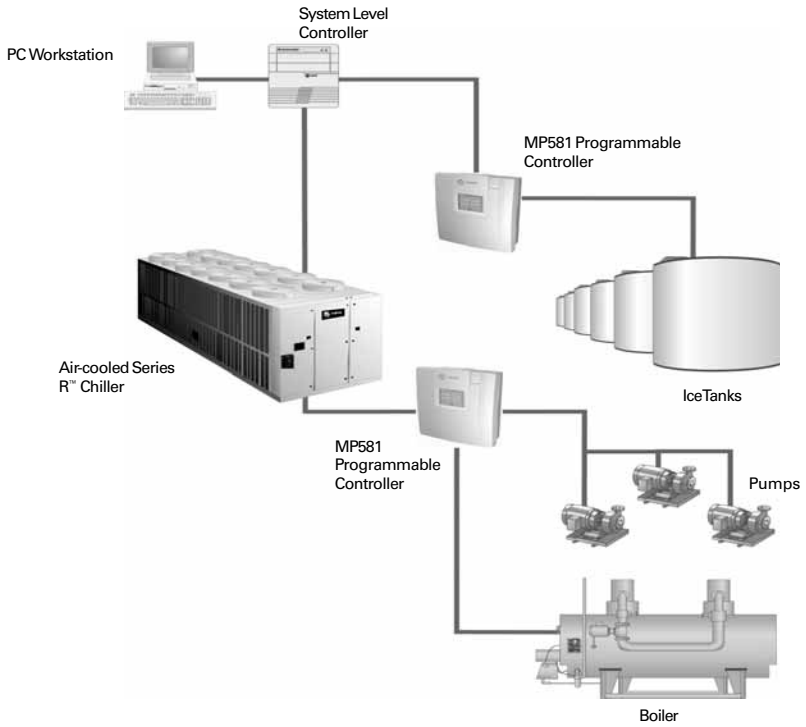
**Easy Interface to A Generic Building Management System**
Controlling the air-cooled Series R chiller with building management systems is state-of-the-art, yet simple with either the LonTalk Communications Interface for Chillers (LCI-C) or Generic Building Management System Hardwire Points.

**What are LonTalk, Echelon, and LonMark?**
LonTalk is a communications protocol developed by the Echelon Corporation. The LonMark association develops control profiles using the LonTalk communication protocol. LonTalk is a unit level communications protocol, unlike BACNet used at the system level.

**LonTalk Chiller Controls**
LonTalk Communications Interface for Chillers (LCI-C) provides a generic automation system with the LonMark chiller profile inputs/outputs. In addition to the standard points required by LonMark, Trane provides other commonly used network output variables for greater interoperability with any automation system. Note: LonMark network variable names are in parentheses when different from chiller naming convention.

**Chiller Inputs:**
- Chiller Enable/Disable
- Chilled Liquid Setpoint (Cool Setpoint)
- Current Limit Setpoint (Capacity Limit)
- Ice Making (Chiller Mode)

**Chiller Outputs:**
- On/Off
- Active Setpoint
- Average Percent RLA (Actual Capacity)
- Active Current Limit Setpoint
- Leaving Chilled Water Temperature
- Entering Chilled Water Temperature
- Alarm Descriptor
- Chiller Status
- Evaporator Water Pump Request
- Evaporator Refrigerant Temperature
- Evaporator Refrigerant Pressure
- Condenser Refrigerant Temperature
- Condenser Refrigerant Pressure
- Outdoor Air Temperature
- Condenser Air Flow
- Compressor Running
- Maximum Capacity Status
- Current Per Line
- Voltage Per Phase
- Oil Temperature Per Compressor
- Compressor Starts
- Compressor Run Time




Trane controls or another vendor's system can use these points with ease to give the operator a complete picture of how the system is running.

**Hardwire Points**
GBAS may be achieved via hardware input/output as well.

Chiller hardwire inputs include:
- Chiller enable/disable
- Circuit enable/disable
- External chilled water setpoint
- External current limit setpoint
- Ice making enable

Chiller hardwire outputs include:
- Compressor running indication
- Alarm indication (Ckt1/Ckt 2)
- Maximum capacity
- Ice making status

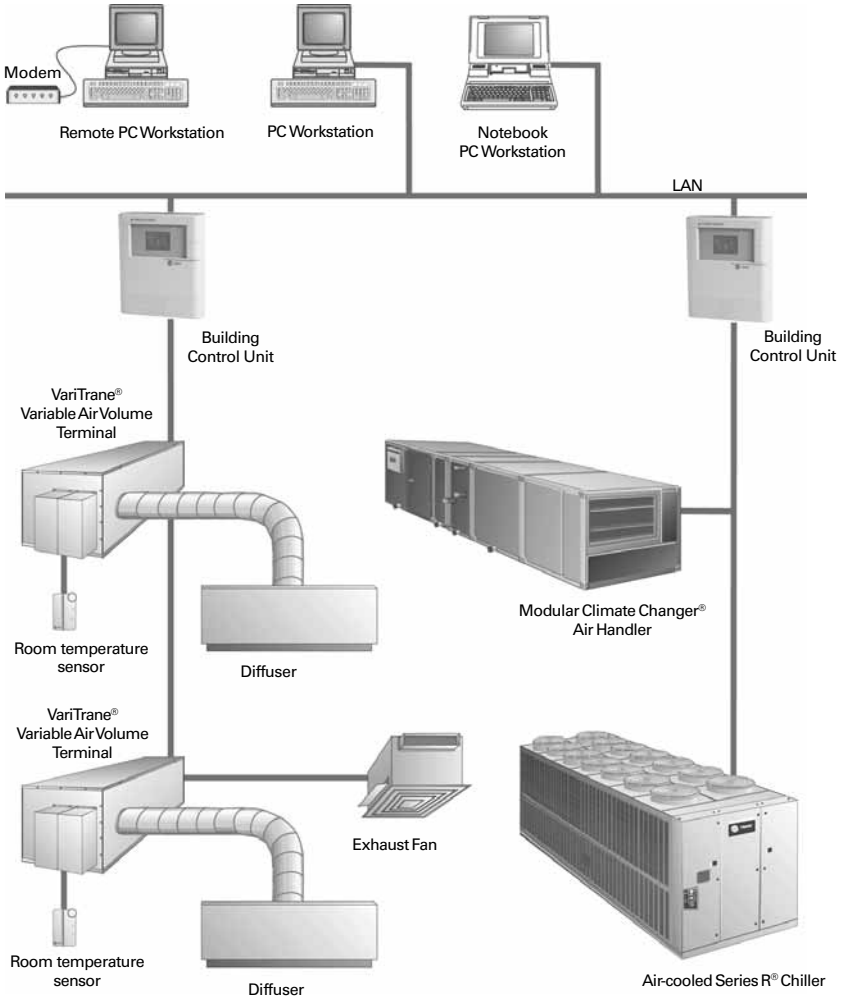
**External Chilled Water Setpoint**
Allows the external setting independent of the front panel setpoint by one of two means:
a) 2-10 VDC input
b) 4-20 mA input

**External Current Limit Setpoint**
Allows the external setting independent of the front panel setpoint by one of two means:
c) 2-10 VDC input
b) 4-20 mA input

**Alarm Indication Contacts**
The unit provides three single-pole/double-throw contact closures to indicate:
a) Compressor on/off status
b) Compressor running at maximum capacity
c) Failure has occurred (Ckt 1/Ckt 2)
These contact closures may be used to trigger jobsite supplied alarm lights or alarm bells.

**Ice Making Control**
Provides interface with ice making control systems.

# Controls




**Tracer Summit controls — Interface With The Trane Integrated Comfort System (ICS)**

**Trane Chiller Plant Control**
The Tracer Summit Chiller Plant Building Management System with Chiller Plant Control provides building automation and energy management functions through stand-alone control. The Chiller Plant Control is capable of monitoring and controlling your entire chiller plant system.

Application software available:
- Time-of-day scheduling
- Demand limiting
- Chiller sequencing
- Process control language
- Boolean processing
- Zone control
- Reports and logs
- Custom messages
- Run time and maintenance
- Trend log
- PID control loops

And of course, the Trane Chiller Plant Control can be used on a stand-alone basis or tied into a complete building automation system.

When the air-cooled Series R™ chiller is used in conjunction with a Trane Tracer™ Summit system, the unit can be monitored and controlled from a remote location. The air-cooled Series R chiller can be controlled to fit into the overall building automation strategy by using time of day scheduling, timed override, demand limiting, and chiller sequencing. A building owner can completely monitor the air-cooled Series R chiller from the Tracer system, since all of the monitoring information indicated on the unit controller's microcomputer can be read off the Tracer system display. In addition, all the powerful diagnostic information can be read back at the Tracer system. Best of all, this powerful capability comes over a single twisted pair of wires! Air-cooled Series R chillers can interface with many different external control systems, from simple stand-alone units to ice making systems. Each unit requires a single-source, three-phase power supply and a single-phase 115V/60Hz, [220V/50Hz] power supply. The added power supply powers the evaporator heaters.

A single twisted pair of wires tied directly between the air-cooled Series R™ chiller and a Tracer™ Summit system provides control, monitoring and diagnostic capabilities. Control functions include auto/stop, adjustment of leaving water temperature setpoint, compressor operation lockout for kW demand limiting and control of ice making mode. The Tracer system reads monitoring information such as entering and leaving evaporator water temperatures and outdoor air temperature. Over 60 individual diagnostic codes can be read by the Tracer system. In addition, the Tracer system can provide sequencing control for up to 25 units on the same chilled water loop. Pump sequencing control can be provided from the Tracer system. Tracer ICS is not available in conjunction with the remote display or the external setpoint capability.

**Required Options**
Tracer Interface

**External Trane Devices Required**
Tracer Summit™, Tracer 100 System or Tracer Chiller Plant Control

**Additional Features That May Be Used**
Ice Making Control

# Controls

## Trane Integrated Comfort System Controls

**Trane Chiller Plant Automation**
Trane's depth of experience in chillers and controls makes us a well-qualified choice for automation of chiller plants using air-cooled Series R® chillers®. The chiller plant control capabilities of the Trane Tracer Summit® building automation system are unequaled in the industry. Our chiller plant automation software is fully pre-engineered and tested. It is a standard software application, not custom programming which can prove to be difficult to support, maintain, and modify.

**Energy Efficiency**
Trane chiller plant automation intelligently sequences starting of chillers to optimize the overall chiller plant energy efficiency. Individual chillers are designated to operate as base, peak, or swing based on capacity and efficiency. Sophisticated software automatically determines which chiller to run in response to current conditions. The software also automatically rotates individual chiller operation to equalize runtime and wear between chillers.

Trane chiller plant automation enables unique energy-saving strategies. An example is controlling pumps, and chillers from the perspective of overall system energy consumption. The software intelligently evaluates and selects the lowest energy consumption alternative.

**Keeping Operators Informed**
A crucial part of efficiently running a chiller plant is assuring that the operations staff is instantly aware of what is happening in the plant. Graphics showing schematics of chillers, piping, pumps, and towers clearly depict the chiller plant system, enabling building operators to easily monitor overall conditions. Status screens display both current conditions and upcoming automated control actions to add or subtract chiller capacity. Series R and other chillers can be monitored and controlled from a remote location.

Tracer Summit features standard report templates listing key operating data for troubleshooting and verifying performance. Reports for each type of Trane chiller and three and six-chiller systems are also standard. Detailed reports showing chiller runtimes aid in planning for preventative maintenance.

**Swift Emergency Response**
We understand the importance of maintaining chilled water production while protecting your chillers from costly damage. If no water flow is detected to a chiller's piping, the start sequence is aborted to protect the chiller. The next chiller in the sequence is immediately started to maintain cooling.

In the event of a problem, the operator receives an alarm notification and diagnostic message to aid in quick and accurate troubleshooting. A snapshot report showing system status just prior to an emergency shutdown helps operators determine the cause. If emergency conditions justify an immediate manual shutdown, the operator can override the automatic control.

**Easy Documentation for Regulatory Compliance**
Comprehensive documentation of refrigerant management practices is now a fact of life. Trane chiller plant automation generates the reports mandated in ASHRAE Guideline 3.

**Integrated Comfort™ Capabilities**
When integrated with a Tracer Summit building management system performing building control, Trane chiller plant automation coordinates with Tracer Summit applications to optimize the total building operation. With this system option, the full breadth of Trane's HVAC and controls experience are applied to offer solutions to many facility issues. If your project calls for an interface to other systems, Tracer Summit can share data via BACnet™, the ASHRAE open systems protocol.

**Ice Making Systems Controls**
Simple and smart control strategies are another advantage the Model RTAC chiller offers for ice storage applications. Trane Tracer™ building management systems can actually anticipate how much ice needs to be made at night and operate the system accordingly. The controls are integrated right into the chiller. Two wires and preprogrammed software dramatically reduce field installation cost and complex programming.

When the ice making option is ordered, the air-cooled Series R chiller will have two operating modes, ice making and normal daytime cooling. In the ice making mode, the air-cooled Series R chiller will operate at full compressor capacity until the return chilled fluid temperature entering the evaporator meets the ice making setpoint. This ice making setpoint is manually adjusted on the unit's microcomputer. Two input signals are required to the air-cooled Series R chiller for the ice making option. The first is an auto/stop signal for scheduling and the second is required to switch the unit in between the ice making mode and normal daytime operation. The signals are provided by a remote job site building automation device such as a time clock or a manual switch. In addition, the signals may be provided over the twisted wire pair from a Tracer system or LonTalk Communication Interface but will require the communication boards provided with the Ice Making Control Option.

# Application Considerations

**Important**
Certain application constraints should be considered when sizing, selecting and installing Trane air-cooled Series R chillers. Unit and system reliability is often dependent upon proper and complete compliance with these considerations. When the application varies from the guidelines presented, it should be reviewed with your local Trane sales engineer.

**Unit Sizing**
Unit capacities are listed in the performance data section. Intentionally over-sizing a unit to assure adequate capacity is not recommended. Erratic system operation and excessive compressor cycling are often a direct result of an oversized chiller. In addition, an oversized unit is usually more expensive to purchase, install, and operate. If over-sizing is desired, consider using multiple units.

**Water Treatment**
Dirt, scale, products of corrosion and other foreign material will adversely affect heat transfer between the water and system components. Foreign matter in the chilled water system can also increase pressure drop and consequently, reduce water flow. Proper water treatment must be determined locally, depending on the type of system and local water characteristics. Neither salt nor brackish water is recommended for use in Trane air-cooled Series R chillers. Use of either will lead to a shortened life to an indeterminable degree. The Trane Company encourages the employment of a reputable water treatment specialist, familiar with local water conditions, to assist in this determination and in the establishment of a proper water treatment program.

**Effect Of Altitude On Capacity**
Air-cooled Series R chiller capacities given in the performance data tables are for use at sea level. At elevations substantially above sea level, the decreased air density will reduce condenser capacity and, therefore, unit capacity and efficiency.

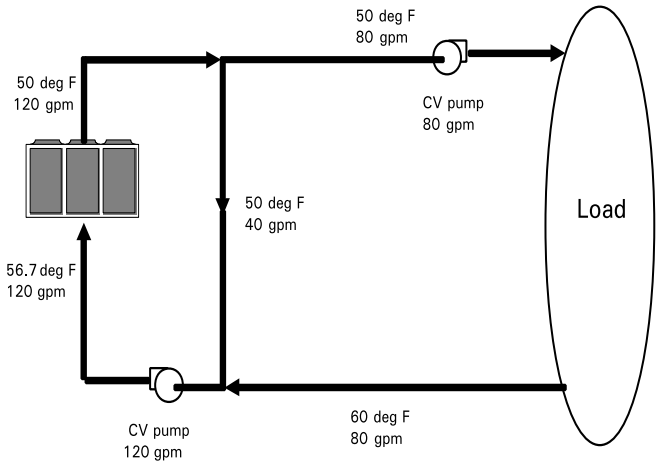
**Ambient Limitations**
Trane air-cooled Series R chillers are designed for year-round operation over a range of ambient temperatures. The Model RTAC chiller will operature as standard in ambient temperatures of 25 to 115°F [-4 to 46°C]. With the low ambient option, these units will operate down to 0°F [-18°C]. If an ambient temperature as high as 125°F [51°C] is the basis for design, the high ambient option will permit the chiller to run without going into a limiting condition. For installations in areas with large ambient differences, the wide ambient option will allow the chiller to perform uninhibited from 0 to 125°F [-18 to 51°C]. For operation outside these ranges, contact the local Trane sales office.

**Water Flow Limits**
The minimum and maximum water flow rates are given in Tables G-1 through G-4. Evaporator flow rates below the tabulated values will result in laminar flow causing freeze-up problems, scaling, stratification and poor control. Flow rates exceeding those listed may result in excessive tube erosion.

**Flow Rates out of Range**
Many process cooling jobs require flow rates that cannot be met with the minimum and maximum published values for the Model RTAC evaporator. A simple piping change can alleviate this problem. For example: A plastic injection molding process requires 80 gpm [5.1 l/s] of 50°F [10°C] water and returns that water at 60°F [15.6°C]. The selected chiller can operate at these temperatures, but has a minimum flow rate of 120 gpm [7.6 l/s]. The system layout in Figure A1 can satisfy the process.

**Flow Control**
Trane requires the chilled water flow control in conjunction with the Air-Cooled Series R Chiller to be done by the chiller. This will allow the chiller to protect itself in potentially harmful conditions.

***Figure A1. GPM out of range system layout***



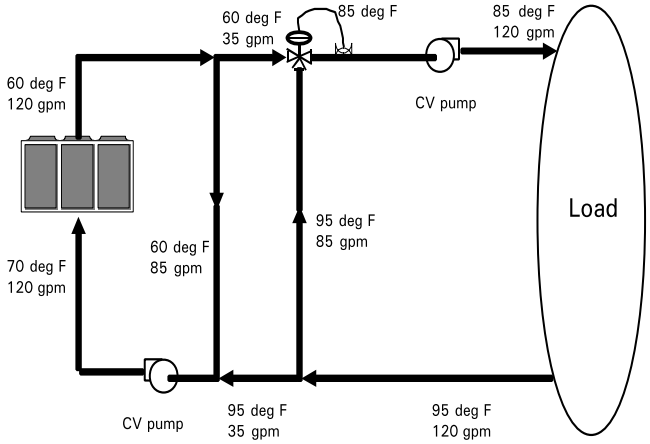
# Application Considerations

**Leaving Water Temperature Limits**
Trane air-cooled Series R chillers have three distinct leaving water categories: standard, low temperature, and ice making. The standard leaving solution temperature range is 40 to 60°F [4.4 to 15.6°C]. Low temperature machines produce leaving liquid temperatures less than 40°F [4.4°C]. Since liquid supply temperature setpoints less than 40°F [4.4°C] result in suction temperatures at or below the freezing point of water, a glycol solution is required for all low temperature machines. Ice making machines have a leaving liquid temperature range of 20 to 60°F [-6.7 to 15.6°C]. Ice making controls include dual setpoint controls and safeties for ice making and standard cooling capabilities. Consult your local Trane sales engineer for applications or selections involving low temperature or ice making machines. The maximum water temperature that can be circulated through an evaporator when the unit is not operating is 108°F [42°C].

**Leaving Water Temperature out of Range**
Many process cooling jobs require temperature ranges that cannot be met with the minimum and maximum published values for the Model RTAC evaporator. A simple piping change can alleviate this problem. For example: A laboratory load requires 120 gpm [7.6 l/s] of water entering the process at 85°F [29.4°C] and returning at 95°F [35°C]. The accuracy required is better than the cooling tower can give. The selected chiller has adequate capacity, but a maximum leaving chilled water temperature of 60°F [15.6°C].

In Figure A2, both the chiller and process flow rates are equal. This is not necessary. For example, if the chiller had a higher flow rate, there would simply be more water bypassing and mixing with warm water.

*Figure A2. Temperature out of range system layout*




**Supply Water Temperature Drop**
The performance data for the Trane air-cooled Series R chiller is based on a chilled water temperature drop of 10°F [5.6°C]. Chilled water temperature drops from 6 to 18°F [3.3 to 10°C] may be used as long as minimum and maximum water temperatures and flow rates are not violated. Temperature drops outside this range are beyond the optimum range for control and may adversely affect the microcomputer's ability to maintain an acceptable supply water temperature range. Further, temperature drops of less than 6°F [3.3°C] may result in inadequate refrigerant superheat. Sufficient superheat is always a primary concern in any refrigerant system and is especially important in a package chiller where the evaporator is closely coupled to the compressor. When temperature drops are less than 6°F [3.3°C], an evaporator runaround loop may be required.

**Variable Flow in the Evaporator**
An attractive chilled water system option may be a variable primary flow (VPF) system. VPF systems present building owners with several cost-saving benefits that are directly related to the pumps. The most obvious cost savings result from eliminating the secondary distribution pump, which in turn avoids the expense incurred with the associated piping connections (material, labor), electrical service, and variable-frequency drive. Building owners often cite pump-related energy savings as the reason that prompted them to install a VPF system. With the help of a software analysis tool such as Trace 700 or Trace System Analyzer™ or DOE-2, you can determine whether the anticipated energy savings justify the use of variable primary flow in a particular application. It may also be easier to apply variable primary flow in an existing chilled-water plant. Unlike the "decoupled" system design, the bypass can be positioned at various points in the chilled-water loop and an additional pump is unnecessary. The evaporator on the Model RTAC can withstand up to 50 percent water flow reduction as long as this flow is equal to or above the minimum flow rate requirements. The microprocessor and capacity control algorithms are designed to handle a maximum of 10% change in water flow rate per minute in order to maintain ± 0.5°F [0.28°C] leaving evaporator temperature control. For applications in which system energy savings is most important and tight temperature control is classified as +/- 2°F [1.1°C], up to 30 percent changes in flow per minute are possible.

# Application Considerations

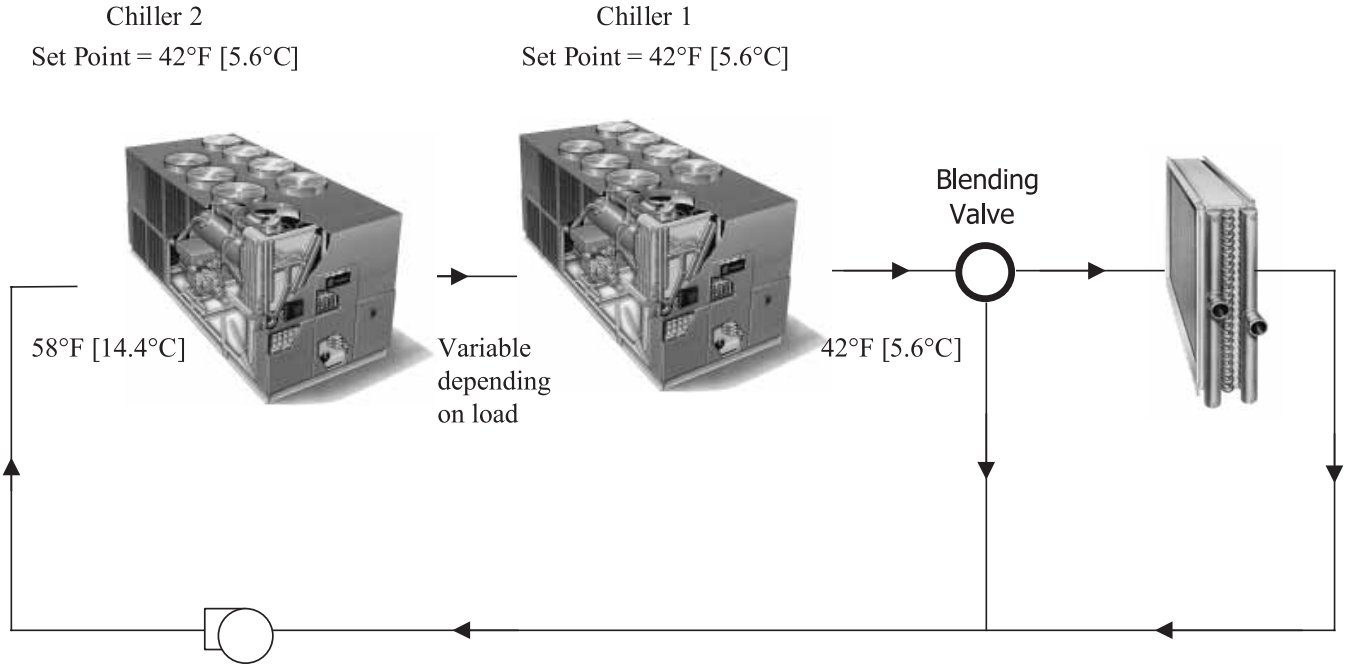
**Series Chiller Arrangements**
Another energy-saving strategy is to design the system around chillers arranged in series. The actual savings possible with such strategies depends on the application dynamics and should be researched by consulting your Trane Systems Solutions Representative and applying an analysis tool from the Trace software family. It is possible to operate a pair of chillers more efficiently in a series chiller arrangement than in a parallel arrangement. It is also possible to achieve higher entering-to-leaving chiller differentials, which may, in turn, provide the opportunity for lower chilled water design temperature, lower design flow, and resulting installation and operational cost savings. The Trane screw compressor also has excellent capabilities for "lift," which affords an opportunity for savings on the evaporator water loop.

Series chiller arrangements can be controlled in several ways. Figure A3 shows a strategy where each chiller is trying to achieve the system design set point. If the cooling load is less than 50 percent of the systems capabilities, either chiller can fulfill the demand. As system loads increase, the Chiller 2 becomes preferentially loaded as it attempts to meet the leaving chilled water setpoint. Chiller 1 will finish cooling the leaving water from Chiller 2 down to the system design setpoint.

Staggering the chiller set points is another control technique that works well for preferentially loading Chiller 1. If the cooling load is less than 50 percent of the system capacity, Chiller 1 would be able to satisfy the entire call for cooling. As system loads increase, Chiller 2 is started to meet any portion of the load that Chiller 1 can not meet.

**Typical Water Piping**
All building water piping must be flushed prior to making the final connections to the chiller. To reduce heat loss and prevent condensation, insulation should be installed. Expansion tanks are also usually required so that chilled water volume changes can be accommodated.

***Figure A3. Typical series chiller arrangement***



# Application Considerations

**Short Water Loops**
The proper location of the temperature control sensor is in the supply (outlet) water connection or pipe. This location allows the building to act as a buffer and assures a slowly changing return water temperature. If there is not a sufficient volume of water in the system to provide an adequate buffer, temperature control can be lost, resulting in erratic system operation and excessive compressor cycling. A short water loop has the same effect as attempting to control from the building return water. Typically, a two-minute water loop is sufficient to prevent problems. Therefore, as a guideline, ensure the volume of water in the evaporator loop equals or exceeds two times the evaporator flow rate. For a rapidly changing load profile, the amount of volume should be increased. To prevent the effect of a short water loop, the following items should be given careful consideration: A storage tank or larger header pipe to increase the volume of water in the system and, therefore, reduce the rate of change of the return water temperature.

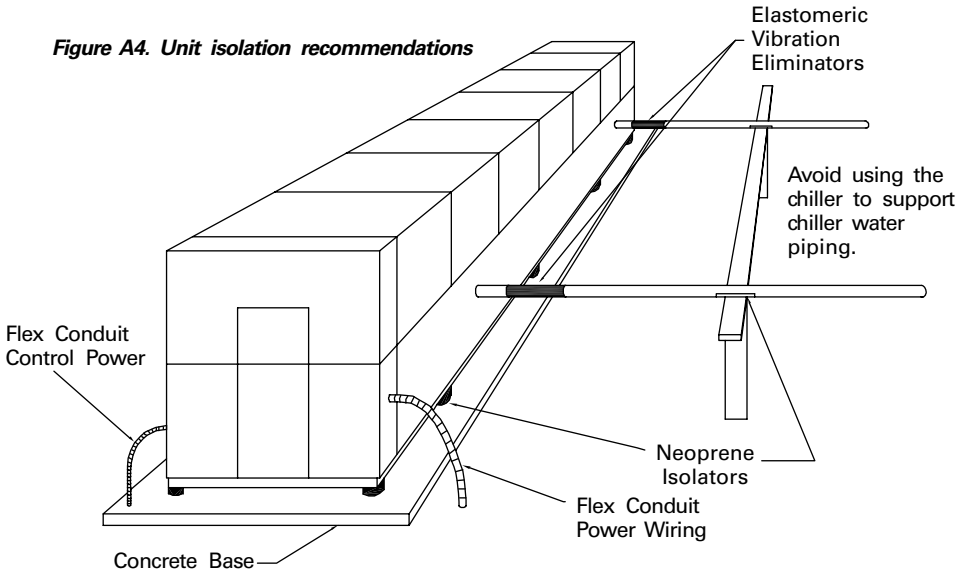
**Applications Types**
- Comfort cooling.
- Industrial process cooling.
- Ice/thermal storage.
- Low temperature process cooling.

**Typical Unit Installation**
Outdoor HVAC equipment must be located to minimize noise and vibration transmission to the occupied spaces of the building structure it serves. If the equipment must be located in close proximity to a building, it could be placed next to an unoccupied space such as a storage room, mechanical room, etc. It is not recommended to locate the equipment near occupied, sound sensitive areas of the building or near windows. Locating the equipment away from structures will also prevent sound reflection, which can increase levels at property lines, or other sensitive points.

When physically isolating the unit from structures, it is a good idea to not use rigid supports, and to eliminate any metal-to-metal or hard material contact, when possible. This includes replacing spring or metal weave isolation with elastomeric isolators. Figure A4 illustrates isolation recommendations for the RTAC.

For chiller sound ratings, installation tips and considerations on chiller location, pipe isolation, etc., refer to the *Trane Air-Cooled Series R Chillers Sound Data and Application Guide for Noise- Sensitive Installations.*

***Figure A4. Unit isolation recommendations***



# Application Considerations

**System Options — Ice Storage**
Trane air-cooled Series R Chillers are well suited for ice production. An air-cooled machine typically switches to ice production at night. Two things happen under this assumption. First, the leaving brine temperature from the evaporator is lowered to around 22 to 24°F [-5.5 to –4.4°C]. Second, the ambient temperature has typically dropped about 15 to 20°F [8.3 to 11°C] from the peak daytime ambient. This effectively places a lift on the compressors that is similar to daytime running conditions. The chiller can operate in lower ambient at night and successfully produce ice to supplement the next day's cooling demands.

The Model RTAC produces ice by supplying ice storage tanks with a constant supply of glycol solution. Air-cooled chillers selected for these lower leaving fluid temperatures are also selected for efficient production of chilled fluid at nominal comfort cooling conditions. The ability of Trane chillers to serve "double duty" in ice production and comfort cooling greatly reduces the capital cost of ice storage systems.

When cooling is required, ice chilled glycol is pumped from the ice storage tanks directly to the cooling coils. No expensive heat exchanger is required.

The glycol loop is a sealed system, eliminating expensive annual chemical treatment costs. The air-cooled chiller is also available for comfort cooling duty at nominal cooling conditions and efficiencies. The modular concept of glycol ice storage systems and the proven simplicity of Trane Tracer controllers allow the successful blend of reliability and energy saving performance in any ice storage application.

The ice storage system is operated in six different modes: each optimized for the utility cost of the hour.
1. Provide comfort cooling with chiller
2. Provide comfort cooling with ice
3. Provide comfort cooling with ice and chiller
4. Freeze ice storage
5. Freeze ice storage when comfort cooling is required
6. Off

Tracer optimization software controls operation of the required equipment and accessories to easily transition from one mode of operation to another. For example:

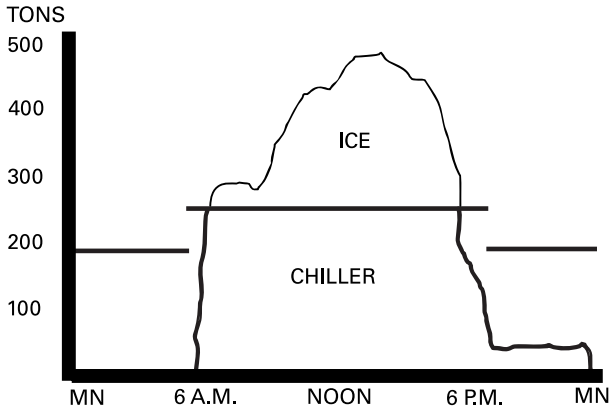
Even with ice storage systems there are numerous hours when ice is neither produced or consumed, but saved. In this mode the chiller is the sole source of cooling. For example, to cool the building after all ice is produced but before high electrical demand charges take effect, Tracer sets the air-cooled chiller leaving fluid setpoint to its most efficient setting and starts the chiller, chiller pump, and load pump.

When electrical demand is high, the ice pump is started and the chiller is either demand limited or shut down completely. Tracer controls have the intelligence to optimally balance the contribution of ice and chiller in meeting the cooling load.

The capacity of the chiller plant is extended by operating the chiller and ice in tandem. Tracer rations the ice, augmenting chiller capacity while reducing cooling costs. When ice is produced, Tracer will lower the air-cooled chiller leaving fluid setpoint and start the chiller, ice and chiller pumps, and other accessories. Any incidental loads that persist while producing ice can be addressed by starting the load pump and drawing spent cooling fluid from the ice storage tanks.

For specific information on ice storage applications, contact your local Trane sales office.

***Figure A5. Ice storage demand cost savings***



# Model Number Description

| RT | A | C | 350 | A | U | CO | N | N | A | F | N | N | 1 | N | X | 1 | T | E | N | N | N | 0 | N | N | 1 | 0 | N | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2 | 3 | 4 | 5,6,7 | 8 | 9 | 10,11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |

**140-500 Tons**

**Digits 1, 2 — Unit model**
RT Rotary chiller

**Digit 3 — Unit type**
A Air cooled

**Digit 4 — Development sequence**
C First sequence

**Digit 5, 6 & 7 — Nominal capacity**
140 140 Nominal tons
155 155 Nominal tons
170 170 Nominal tons
185 185 Nominal tons
200 200 Nominal tons
225 225 Nominal tons
250 250 Nominal tons
275 275 Nominal tons
300 300 Nominal tons
350 350 Nominal tons
375 375 Nominal tons
400 400 Nominal tons
450 450 Nominal tons
500 500 Nominal tons

**Digit 8 — Unit voltage**
A 200/60/3
C 230/60/3
J 380/60/3
D 400/50/3
4 460/60/3
5 575/60/3

**Digit 9 – Manufacturing location**
U Water Chiller Business Unit, Pueblo, CO USA

**Digit 10, 11 — Design sequence**
CO Factory Input

**Digit 12 — Unit basic configuration**
N Standard efficiency/performance configuration
H High efficiency/performance configuration

**Digit 13 — Agency listing**
N No agency listing
U UL/CUL listing

**Digit 14 — Pressure vessel code**
A ASME pressure vessel code
L Chinese code

**Digit 15 — Evaporator application**
F Standard (40-60 F) leaving temp
G Low (Less than 40 F) leaving temp
R Remote (40-60 F) leaving temp

**Digit 16 — Evaporator configuration**
N Standard pass arrangement, insulated
P 3 pass arrangement, insulated

**Digit 17 — Condenser application**
N Standard ambient range (25-115 F)
H High ambient capability (25-125 F)
L Low ambient capability (0-115 F)
W Wide ambient capability (0-125 F)

**Digit 18 — Condenser fin material**
1 Standard aluminum slit fins
2 Copper fins
4 CompleteCoat epoxy coated fins

**Digit 19 — Condenser fan/motor configuration**
N STD fans with ODP motors
T STD fans with TEAO motors
W Low noise fans

**Digit 20 — Compressor motor starter type**
X Across-the-line starter
Y Wye-delta closed transition starter

**Digit 21 — Incoming power line connection**
1 Single point power connection
2 Dual point power connection

**Digit 22 — Power line connection type**
T Terminal block connection for incoming line(s)
D Non-fused disconnect switch(es) for incoming line(s)
C HACR rated circuit breaker(s) for incoming line(s)

**Digit 23 — Unit operator interface**
D DynaView operator interface

**Digit 24 — Remote operator interface**
N No remote interface
C Tracer Comm 3 interface
L LonTalk compatible (LCI-C) interface

**Digit 25 — Control input accessories/ options**
N No remote inputs
R Ext. evaporator leaving water setpoint
C Ext. current limit setpoint
B Ext. leaving water and current limit setpoint

**Digit 26 — Control output accessories/ options**
N No output options
A Alarm relay outputs
C Icemaking I/O
D Alarm relay outputs and icemaking I/O

**Digit 27 — Electrical protection options**
0 No short circuit rating
5 10,000 Amp short circuit rating
4 35,000 Amp short circuit rating
6 65,000 Amp short circuit rating

**Digit 28 — Electrical accessories**
N No electrical accessories
F Vapor proof flow switch – 150 psi
E Nema-1 flow switch –150 psi

**Digit 29 — Control panel accessories**
N No convenience outlet
A 15A 115V convenience outlet (60Hz)

**Digit 30 — Service valves**
1 With suction service valves

**Digit 31 —- Compressor sound attenuation option**
0 No compressor sound attenuation
1 Factory installed compressor sound attenuation
2 Field installed compressor sound attenuation

**Digit 32 — Appearance options**
N No appearance options
A Architectural louvered panels
C Half louvers
G Access guards
B Access guards and half louvers

**Digit 33 — Installation accessories**
N No installation accessories
R Neoprene in shear unit isolators
F Flange kit for water connections
G Neoprene isolators and flange kit

**Digit 34 — Factory testing options**
0 Standard functional test
C Customer-witnessed performance test with report
R Non-witnessed performance test with report

# General Data

***Table G-1. General data — 140-500 ton 60 Hz units - standard efficiency***

| Size | | 140 | 155 | 170 | 185 | 200 | 225 | 250 | 275 | 300 | 350 | 400 | 450 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD |
| Compressor | | | | | | | | | | | | | | |
| Quantity (1) | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 |
| Nominal size (tons) | | | | | | | | | 85- | 100- | 120- | 100-100 / | 120-120 / | 120-120 / |
| @ 60 Hz | | 70/70 | 85/70 | 85/85 | 100/85 | 100/100 | 120/100 | 120/120 | 85/100 | 100/100 | 120/100 | 100-100 | 100-100 | 120-120 |
| Evaporator | | | | | | | | | | | | | | |
| Water storage | (gallons) | 29 | 32 | 33 | 35 | 39 | 38 | 42 | 60 | 65 | 70 | 81 | 84 | 89 |
| | (liters) | 111 | 121 | 127 | 134 | 146 | 145 | 158 | 229 | 245 | 264 | 306 | 316 | 337 |
| 2 Pass arrangement | | | | | | | | | | | | | | |
| Minimum flow | (gpm) | 193 | 214 | 202 | 217 | 241 | 217 | 241 | 309 | 339 | 375 | 404 | 422 | 461 |
| | (L/s) | 12 | 14 | 13 | 14 | 15 | 14 | 15 | 20 | 21 | 24 | 26 | 27 | 29 |
| Maximum flow | (gpm) | 709 | 785 | 741 | 796 | 883 | 796 | 883 | 1134 | 1243 | 1374 | 1483 | 1548 | 1690 |
| | (L/s) | 45 | 50 | 47 | 50 | 56 | 50 | 56 | 72 | 78 | 87 | 94 | 98 | 107 |
| 3 Pass arrangement | | | | | | | | | | | | | | |
| Minimum flow | (gpm) | 129 | 143 | 135 | 145 | 161 | 145 | 161 | 206 | 226 | 250 | 270 | 282 | 307 |
| | (L/s) | 8 | 9 | 9 | 9 | 10 | 9 | 10 | 13 | 14 | 16 | 17 | 18 | 19 |
| Maximum flow | (gpm) | 473 | 523 | 494 | 531 | 589 | 531 | 589 | 756 | 829 | 916 | 989 | 1032 | 1127 |
| | (L/s) | 30 | 33 | 31 | 33 | 37 | 33 | 37 | 48 | 52 | 58 | 62 | 65 | 71 |
| Condenser | | | | | | | | | | | | | | |
| Qty of coils | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 8 |
| Coil length | (inches) | 156/156 | 180/156 | 180/180 | 216/180 | 216/216 | 252/216 | 252/252 | 180/108 | 216/108 | 252/108 | 216/216 | 252/216 | 252/252 |
| | (millimeters) | 3962/3962 | 4572/3962 | 4572/4572 | 5486/4572 | 5486/5486 | 6401/5486 | 6401/6401 | 4572/2743 | 5486/2743 | 6401/4572 | 5486/5486 | 6401/5486 | 6401/6401 |
| Coil height | (inches) | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | (millimeters) | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 |
| Fins/Ft | | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 |
| Number of rows | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Condenser fans | | | | | | | | | | | | | | |
| Quantity (1) | | 4/4 | 5/4 | 5/5 | 6/5 | 6/6 | 7/6 | 7/7 | 10/6 | 12/6 | 14/6 | 12/12 | 14/12 | 14/14 |
| Diameter | (inches) | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | (millimeters) | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 |
| Total airflow | (cfm) | 77000 | 84542 | 92087 | 101296 | 110506 | 119725 | 128946 | 147340 | 165766 | 184151 | 221016 | 239456 | 257991 |
| | (m^3/hr) | 130811 | 143623 | 156441 | 172086 | 187732 | 203394 | 219059 | 250307 | 281610 | 312843 | 375471 | 406797 | 438285 |
| Nominal fan speed | rpm | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 |
| | rps | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Tip speed | (ft/min) | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 |
| | M/S | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| Minimum starting/operating ambient (2) | | | | | | | | | | | | | | |
| Standard unit | (F) | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | (C) | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 |
| Low ambient | (F) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | (C) | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 |
| General unit | | | | | | | | | | | | | | |
| Refrigerant | | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a |
| No. of independent refrigerant circuits | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| % Minimum load | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Refrigerant charge (1) | (pounds) | 165/165 | 175/165 | 175/175 | 215/210 | 215/215 | 225/215 | 225/225 | 365/200 | 415/200 | 460/200 | 415/415 | 460/415 | 460/460 |
| | (kilograms) | 75/75 | 79/75 | 79/79 | 98/95 | 98/98 | 102/98 | 102/102 | 166/91 | 188/91 | 209/91 | 188/188 | 209/188 | 209/209 |
| Oil charge (1) | [gallons] | 1.5/1.5 | 1.5/1.5 | 1.5/1.5 | 2.1/1.5 | 2.1/2.1 | 2.1/2.1 | 2.1/2.1 | 4.6/2.1 | 5.0/2.1 | 5.0/2.1 | 5.0/5.0 | 5.0/5.0 | 5.0/5.0 |
| | [liters] | 6/6 | 6/6 | 6/6 | 6/8 | 8/8 | 8/8 | 8/8 | 17/8 | 19/8 | 19/8 | 19/19 | 19/19 | 19/19 |

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

# General Data

***Table G-2. General data — 140-400 ton 60 Hz units - high efficiency***

| Size | | 140 | 155 | 170 | 185 | 200 | 225 | 250 | 275 | 300 | 350 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH |
| Compressor | | | | | | | | | | | | |
| Quantity (1) | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| Nominal size (tons) @ 60 Hz | | 70/70 | 85/70 | 85/85 | 100/85 | 100/100 | 120/100 | 120/120 | 85-85/100 | 100-100/100 | 85-85 / 85-85 | 100-100 / 100-100 |
| Evaporator | | | | | | | | | | | | |
| Water storage | (gallons) | 33 | 35 | 39 | 38 | 42 | 42 | 42 | 70 | 70 | 81 | 89 |
| | (liters) | 127 | 134 | 146 | 145 | 158 | 158 | 158 | 264 | 264 | 306 | 337 |
| 2 Pass arrangement | | | | | | | | | | | | |
| Minimum flow | (gpm) | 202 | 217 | 241 | 217 | 241 | 241 | 241 | 375 | 375 | 404 | 461 |
| | (L/s) | 13 | 14 | 15 | 14 | 15 | 15 | 15 | 24 | 24 | 26 | 29 |
| Maximum flow | (gpm) | 741 | 796 | 883 | 796 | 883 | 883 | 883 | 1374 | 1374 | 1483 | 1690 |
| | (L/s) | 47 | 50 | 56 | 50 | 56 | 56 | 56 | 87 | 87 | 94 | 107 |
| 3 Pass arrangement | | | | | | | | | | | | |
| Minimum flow | (gpm) | 135 | 145 | 161 | 145 | 161 | 161 | 161 | 250 | 250 | 270 | 307 |
| | (L/s) | 9 | 9 | 10 | 9 | 10 | 10 | 10 | 16 | 16 | 17 | 19 |
| Maximum flow | (gpm) | 494 | 531 | 589 | 531 | 589 | 589 | 589 | 916 | 916 | 989 | 1127 |
| | (L/s) | 31 | 33 | 37 | 33 | 37 | 37 | 37 | 58 | 58 | 62 | 71 |
| Condenser | | | | | | | | | | | | |
| Qty of coils | | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 8 |
| Coil length | (inches) | 180/180 | 216/180 | 216/216 | 252/216 | 252/252 | 144/144 | 144/144 | 216/144 | 252/144 | 216/216 | 252/252 |
| | (millimeters) | 4572/4572 | 5486/4572 | 5486/5486 | 6401/5486 | 6401/6401 | 3658/3658 | 4572/2743 | 5486/3658 | 6401/3658 | 5486/5486 | 6401/6401 |
| Coil height | (inches) | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | (millimeters) | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 |
| Fins/Ft | | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 |
| Number of rows | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Condenser fans | | | | | | | | | | | | |
| Quantity (1) | | 5/5 | 6/5 | 6/6 | 7/6 | 7/7 | 8/6 | 8/8 | 12/6 | 14/6 | 12/12 | 14/14 |
| Diameter | (inches) | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | (millimeters) | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 |
| Total airflow | (cfm) | 91993 | 101190 | 110387 | 119598 | 128812 | 136958 | 147242 | 173733 | 192098 | 220778 | 257626 |
| | (m^3/hr) | 156281 | 171906 | 187530 | 203178 | 218831 | 232670 | 250141 | 295145 | 326344 | 375066 | 437665 |
| Nominal fan speed | rpm | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 |
| | rps | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| Tip speed | (ft/min) | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 | 8954 |
| | M/S | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| Minimum starting/operating ambient (2) | | | | | | | | | | | | |
| Standard unit | (F) | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | (C) | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 |
| Low ambient | (F) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | (C) | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 |
| General unit | | | | | | | | | | | | |
| Refrigerant | | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a |
| No. of independent refrigerant circuits | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| % Minimum load | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Refrigerant charge (1) | (pounds) | 175/175 | 215/205 | 215/215 | 225/215 | 225/225 | 235/235 | 235/235 | 415/200 | 460/200 | 415/415 | 460/460 |
| | (kilograms) | 79/79 | 98/93 | 98/98 | 102/98 | 102/102 | 107/107 | 107/107 | 188/91 | 209/91 | 188/188 | 209/209 |
| Oil charge (1) | [gallons] | 1.5/1.5 | 1.5/1.5 | 1.5/1.5 | 2.1/1.5 | 2.1/2.1 | 2.1/2.1 | 2.1/2.1 | 4.6/2.2 | 5.0/2.2 | 4.6/4.6 | 5.0/5.0 |
| | [liters] | 6/6 | 6/6 | 6/6 | 6/8 | 8/8 | 8/8 | 8/8 | 17/8 | 19/8 | 17/17 | 19/19 |

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

# General Data

***Table G-3. General data — 140-400 ton 50 Hz units - standard efficiency***

| Size | | 140 | 155 | 170 | 185 | 200 | 250 | 275 | 300 | 350 | 375 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD |
| Compressor | | | | | | | | | | | | |
| Quantity (1) | | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 |
| Nominal size (tons) | | | | | | | 70-70 / | 85-85 / | 100-100 / | 85-85 / | 100-100 / | 100-100 / |
| @ 50 Hz | | 70/70 | 85/70 | 85/85 | 100/85 | 100/100 | 100 | 100 | 100 | 85-85 | 85-85 | 100-100 |
| Evaporator | | | | | | | | | | | | |
| Water storage | (gallons) | 29 | 32 | 33 | 35 | 39 | 54 | 60 | 65 | 73 | 77 | 81 |
| | (liters) | 111 | 121 | 127 | 134 | 146 | 205 | 229 | 245 | 277 | 293 | 306 |
| 2 Pass arrangement | | | | | | | | | | | | |
| Minimum flow | (gpm) | 193 | 214 | 202 | 217 | 241 | 265 | 309 | 339 | 351 | 381 | 404 |
| | (L/s) | 117 | 129 | 122 | 131 | 145 | 160 | 187 | 204 | 212 | 230 | 244 |
| Maximum flow | (gpm) | 709 | 785 | 741 | 796 | 883 | 970 | 1134 | 1243 | 1287 | 1396 | 1483 |
| | (L/s) | 45 | 50 | 47 | 50 | 56 | 61 | 72 | 78 | 81 | 88 | 94 |
| 3 Pass arrangement | | | | | | | | | | | | |
| Minimum flow | (gpm) | 129 | 143 | 135 | 145 | 161 | 176 | 206 | 226 | 234 | 254 | 270 |
| | (L/s) | 8 | 9 | 9 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 17 |
| Maximum flow | (gpm) | 473 | 523 | 494 | 531 | 589 | 647 | 756 | 829 | 858 | 930 | 989 |
| | (L/s) | 30 | 33 | 31 | 33 | 37 | 41 | 48 | 52 | 54 | 59 | 62 |
| Condenser | | | | | | | | | | | | |
| Qty of coils | | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 8 |
| Coil length | (inches) | 156/156 | 180/156 | 180/180 | 216/180 | 216/216 | 156/108 | 180/108 | 216/108 | 180/180 | 216/180 | 252/216 |
| | (millimeters) | 3962/3962 | 4572/3962 | 4572/4572 | 5486/4572 | 5486/5486 | 3962/4572 | 4572/2743 | 5486/2743 | 4572/4572 | 5486/4572 | 6401/5486 |
| Coil height | (inches) | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | (millimeters) | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 |
| Fins/Ft | | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 |
| Number of rows | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Condenser fans | | | | | | | | | | | | |
| Quantity (1) | | 4/4 | 5/4 | 5/5 | 6/5 | 6/6 | 8/6 | 10/6 | 12/6 | 10/10 | 12/10 | 12/12 |
| Diameter | (inches) | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | (millimeters) | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 |
| Total airflow | (cfm) | 63346 | 69507 | 75671 | 83236 | 90803 | 108698 | 121056 | 136210 | 151332 | 166467 | 181611 |
| | (m^3/hr) | 107615 | 118081 | 128553 | 141405 | 154260 | 184661 | 205655 | 231399 | 257089 | 282801 | 308528 |
| Nominal fan speed | rpm | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 |
| | rps | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 |
| Tip speed | (ft/min) | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 |
| | M/S | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| Minimum starting/operating ambient (2) | | | | | | | | | | | | |
| Standard unit | (F) | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | (C) | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 |
| Low ambient | (F) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | (C) | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 |
| General unit | | | | | | | | | | | | |
| Refrigerant | | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a |
| No. of independent refrigerant circuits | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| % Minimum load | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Refrigerant charge (1) | (pounds) | 165/165 | 175/165 | 175/175 | 215/210 | 215/215 | 335/200 | 365/200 | 415/200 | 365/365 | 415/365 | 415/415 |
| | (kilograms) | 75/75 | 79/75 | 79/79 | 98/95 | 98/98 | 152/91 | 166/91 | 188/91 | 166/166 | 188/166 | 188/188 |
| Oil charge (1) | [gallons] | 1.5/1.5 | 1.5/1.5 | 1.5/1.5 | 2.1/1.5 | 2.1/2.1 | 4.6/2.1 | 4.6/2.1 | 5.0/2.1 | 4.6/4.6 | 5.0/4.6 | 5.0/5.0 |
| | [liters] | 6/6 | 6/6 | 6/6 | 6/8 | 8/8 | 17/8 | 17/8 | 19/8 | 17/17 | 19/17 | 19/19 |

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

# General Data

***Table G-4. General data — 140-400 ton 50 Hz units - high efficiency***

| Size | | 140 | 155 | 170 | 185 | 200 | 250 | 275 | 300 | 350 | 375 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH | HIGH |
| Compressor | | | | | | | | | | | | |
| Quantity (1) | | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 |
| Nominal Size (tons) | | | | | | | 70-70 / | 85-85 / | 100-100 / | 85-85 / | 100-100 / | 100-100 / |
| @ 50 Hz | | 70/70 | 85/70 | 85/85 | 100/85 | 100/100 | 100 | 100 | 100 | 85-85 | 85-85 | 100-100 |
| Evaporator | | | | | | | | | | | | |
| Water storage | (gallons) | 33 | 35 | 39 | 38 | 42 | 65 | 70 | 70 | 81 | 84 | 89 |
| | (liters) | 127 | 134 | 146 | 145 | 158 | 245 | 264 | 264 | 306 | 316 | 337 |
| 2 Pass arrangement | | | | | | | | | | | | |
| Minimum flow | (gpm) | 202 | 217 | 241 | 217 | 241 | 339 | 375 | 375 | 404 | 422 | 461 |
| | (L/s) | 13 | 14 | 15 | 14 | 15 | 21 | 24 | 24 | 26 | 27 | 29 |
| Maximum flow | (gpm) | 741 | 796 | 883 | 796 | 883 | 1243 | 1374 | 1374 | 1483 | 1548 | 1690 |
| | (L/s) | 47 | 50 | 56 | 50 | 56 | 78 | 87 | 87 | 94 | 98 | 107 |
| 3 Pass arrangement | | | | | | | | | | | | |
| Minimum flow | (gpm) | 135 | 145 | 161 | 145 | 161 | 226 | 250 | 250 | 270 | 282 | 307 |
| | (L/s) | 9 | 9 | 10 | 9 | 10 | 14 | 16 | 16 | 17 | 18 | 19 |
| Maximum flow | (gpm) | 494 | 531 | 589 | 531 | 589 | 829 | 916 | 916 | 989 | 1032 | 1127 |
| | (L/s) | 31 | 33 | 37 | 33 | 37 | 52 | 58 | 58 | 62 | 65 | 71 |
| Condenser | | | | | | | | | | | | |
| Qty of coils | | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 8 |
| Coil length | (inches) | 180/180 | 216/180 | 216/216 | 252/216 | 252/252 | 180/108 | 216/144 | 252/144 | 216/216 | 252/216 | 252/252 |
| | (millimeters) | 4572/4572 | 5486/4572 | 5486/5486 | 6401/5486 | 6401/6401 | 4572/2743 | 5486/3658 | 6401/3658 | 5486/5486 | 6401/5486 | 6401/6401 |
| Coil height | (inches) | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | (millimeters) | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 | 1067 |
| Fins/Ft | | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 | 192 |
| Number of rows | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Condenser fans | | | | | | | | | | | | |
| Quantity (1) | | 5/5 | 6/5 | 6/6 | 7/6 | 7/7 | 10/6 | 12/6 | 14/6 | 12/12 | 14/12 | 14/14 |
| Diameter | (inches) | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | (millimeters) | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 762 |
| Total airflow | (cfm) | 75575 | 83130 | 90687 | 98256 | 105826 | 120971 | 142969 | 158112 | 181371 | 194731 | 211648 |
| | (m^3/hr) | 128390 | 141225 | 154063 | 166921 | 179781 | 205510 | 242881 | 268607 | 308120 | 330817 | 359556 |
| Nominal fan speed | rpm | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 950 |
| | rps | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 |
| Tip speed | (ft/min) | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 | 7461 |
| | M/S | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| Minimum starting/operating ambient (2) | | | | | | | | | | | | |
| Standard unit | (F) | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | (C) | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 | -3.9 |
| Low ambient | (F) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | (C) | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 | -17.8 |
| General unit | | | | | | | | | | | | |
| Refrigerant | | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a | HFC-134a |
| No. of independent refrigerant circuits | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| % Minimum load | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Refrigerant charge (1) | (pounds) | 175/175 | 215/205 | 215/215 | 225/215 | 225/225 | 365/200 | 415/200 | 460/200 | 415/415 | 460/415 | 460/460 |
| | (kilograms) | 79/79 | 98/93 | 98/98 | 102/95 | 102/102 | 166/91 | 188/91 | 209/91 | 188/188 | 209/188 | 209/209 |
| Oil charge (1) | (pounds) | 1.5/1.5 | 1.5/1.5 | 1.5/1.5 | 2.1/1.5 | 2.1/2.1 | 4.6/2.1 | 4.6/2.1 | 5.0/2.1 | 4.6/4.6 | 5.0/5.0 | 5.0/5.0 |
| | (kilograms) | 6/6 | 6/6 | 6/6 | 8/6 | 8/8 | 17/8 | 17/8 | 19/8 | 17/17 | 19/19 | 19/19 |

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

# Selection Procedure

Trane air-cooled Series R chiller performance is rated in accordance with the ARI Standard 550/590-1998 Certification Program. Chiller selection assistance and performance information can be obtained by using the Series R chiller selection program, available through local Trane sales offices.

The chiller capacity tables cover the most frequently encountered leaving liquid temperatures. The tables reflect a 10°F [5.6°C] temperature drop through the evaporator. For other temperature drops, apply the appropriate Performance Data Adjustment Factors from Table A-1. For chilled brine selections, contact your local Trane sales engineer. To select a Trane air-cooled Series R™ chiller, the following information is required:

**1**
Design load in tons of refrigeration

**2**
Design chilled water temperature drop

**3**
Design leaving chilled water temperature

**4**
Design ambient temperature

Evaporator flow rates can be determined by using the following formulas:
GPM = (Tons x 24) /Temperature Drop (Degrees F)
OR
L/S = (kW (Capacity) x .239) /Temperature Drop (Degrees C)

NOTE: Flow rates must fall within the limits specified in Tables G-1 through G-4 (for GPM or for L/s).

**Selection Example**
Given:
Required System Load = 140 Tons
Leaving Chilled Water Temperature (LCWT) = 44°F Chilled Water Temperature Drop = 10°F Design
Ambient Temperature = 95°F
Evaporator Fouling Factor = 0.0001

**1**
To calculate the required chilled water flow rate we use the formula given below:
GPM = (140 Tons x 24) / 10°F = 336 GPM

**2**
From Table P-1 (RTAC performance data), an RTAC 140 standard at the given conditions will produce 138.2 tons with compressor power input of 158.6 kW and a unit EER of 9.7.

**3**
To determine the evaporator pressure drop use the flow rate (GPM) and pressure drop chart on page 37. Entering the curve at 336 gpm, the pressure drop for a nominal 140 standard evaporator is approximately 16 feet.

**Minimum Leaving Chilled Water Temperature Setpoint**
The minimum leaving chilled water temperature setpoint for water is 40°F. For those applications requiring lower setpoints, a glycol solution must be used. Contact the local Trane sales engineer for additional information.

***Table S-1. Performance data adjustment factors***

| Fouling Factor | Chilled Water Temp. | Elevation | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sea Level | | | 2000 ft | | | 4000 ft | | | 6000 ft | | |
| | | CAP | GPM | KW | CAP | GPM | KW | CAP | GPM | KW | CAP | GPM | KW |
| 0.0001 | 8 | 0.997 | 1.246 | 0.999 | 0.987 | 1.233 | 1.012 | 0.975 | 1.217 | 1.027 | 0.960 | 1.200 | 1.045 |
| | 10 | 1.000 | 1.000 | 1.000 | 0.989 | 0.989 | 1.013 | 0.977 | 0.977 | 1.028 | 0.963 | 0.963 | 1.047 |
| | 12 | 1.003 | 0.835 | 1.001 | 0.992 | 0.826 | 1.014 | 0.979 | 0.816 | 1.030 | 0.965 | 0.804 | 1.048 |
| | 14 | 1.004 | 0.717 | 1.002 | 0.993 | 0.710 | 1.016 | 0.981 | 0.701 | 1.031 | 0.966 | 0.690 | 1.049 |
| | 16 | 1.006 | 0.629 | 1.003 | 0.995 | 0.622 | 1.016 | 0.982 | 0.614 | 1.032 | 0.968 | 0.605 | 1.050 |
| 0.00025 | 8 | 0.982 | 1.227 | 0.991 | 0.972 | 1.215 | 1.003 | 0.961 | 1.200 | 1.018 | 0.947 | 1.183 | 1.036 |
| | 10 | 0.986 | 0.985 | 0.992 | 0.975 | 0.975 | 1.005 | 0.963 | 0.963 | 1.020 | 0.950 | 0.950 | 1.038 |
| | 12 | 0.988 | 0.823 | 0.994 | 0.978 | 0.815 | 1.006 | 0.966 | 0.805 | 1.022 | 0.952 | 0.793 | 1.040 |
| | 14 | 0.991 | 0.708 | 0.995 | 0.980 | 0.700 | 1.008 | 0.968 | 0.692 | 1.023 | 0.954 | 0.682 | 1.041 |
| | 16 | 0.992 | 0.621 | 0.996 | 0.982 | 0.614 | 1.009 | 0.970 | 0.606 | 1.024 | 0.956 | 0.598 | 1.042 |

# Performance Data

## Full Load Performance

***Table P-1. 60 Hz standard efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 140 STD | 138.0 | 139.9 | 10.9 | 128.4 | 152.4 | 9.4 | 118.5 | 166.4 | 8.0 | 108.4 | 182.1 | 6.7 |
| | 155 STD | 151.4 | 152.3 | 10.9 | 141.1 | 165.9 | 9.4 | 130.4 | 181.2 | 8.0 | 119.5 | 198.3 | 6.8 |
| | 170 STD | 165.6 | 165.0 | 11.0 | 154.5 | 179.8 | 9.5 | 143.1 | 196.5 | 8.1 | 131.5 | 215.0 | 6.9 |
| | 185 STD | 180.5 | 183.4 | 10.8 | 168.6 | 199.4 | 9.4 | 156.2 | 217.5 | 8.0 | 143.5 | 237.8 | 6.8 |
| | 200 STD | 196.6 | 202.7 | 10.7 | 183.6 | 219.8 | 9.3 | 170.1 | 239.3 | 7.9 | 156.2 | 261.2 | 6.7 |
| | 225 STD | 215.5 | 221.8 | 10.7 | 201.6 | 240.7 | 9.3 | 187.1 | 262.1 | 8.0 | 172.0 | 286.2 | 6.8 |
| | 250 STD | 236.1 | 242.2 | 10.8 | 220.9 | 262.7 | 9.4 | 205.1 | 285.9 | 8.0 | 188.8 | 312.0 | 6.8 |
| | 275 STD | 267.1 | 268.2 | 11.0 | 249.4 | 291.5 | 9.5 | 231.2 | 317.8 | 8.1 | 212.5 | 347.2 | 6.9 |
| | 300 STD | 298.4 | 307.1 | 10.7 | 278.8 | 332.7 | 9.3 | 258.5 | 361.8 | 8.0 | 237.5 | 394.5 | 6.8 |
| | 350 STD | 338.2 | 348.1 | 10.7 | 316.4 | 376.8 | 9.3 | 293.7 | 409.5 | 8.0 | 270.2 | 446.3 | 6.8 |
| | 400 STD | 400.8 | 412.7 | 10.7 | 374.7 | 447.0 | 9.3 | 347.6 | 485.9 | 8.0 | 319.5 | 529.6 | 6.8 |
| | 450 STD | 440.2 | 453.6 | 10.7 | 412.0 | 491.1 | 9.3 | 382.6 | 533.7 | 8.0 | 352.2 | 581.6 | 6.8 |
| | 500 STD | 481.1 | 495.5 | 10.7 | 450.4 | 536.1 | 9.4 | 418.5 | 582.3 | 8.1 | 385.4 | 634.2 | 6.9 |
| 42 | 140 STD | 143.2 | 142.9 | 11.1 | 133.3 | 155.5 | 9.5 | 123.1 | 169.6 | 8.1 | 112.6 | 185.4 | 6.9 |
| | 155 STD | 157.1 | 155.5 | 11.1 | 146.4 | 169.2 | 9.6 | 135.4 | 184.7 | 8.2 | 124.2 | 201.8 | 6.9 |
| | 170 STD | 171.7 | 168.5 | 11.2 | 160.3 | 183.4 | 9.7 | 148.6 | 200.2 | 8.3 | 136.6 | 218.8 | 7.0 |
| | 185 STD | 187.2 | 187.4 | 11.0 | 174.8 | 203.5 | 9.5 | 162.1 | 221.7 | 8.2 | 149.0 | 242.1 | 6.9 |
| | 200 STD | 203.8 | 207.2 | 10.8 | 190.3 | 224.4 | 9.4 | 176.4 | 244.1 | 8.1 | 162.1 | 266.1 | 6.9 |
| | 225 STD | 223.4 | 226.9 | 10.9 | 208.9 | 245.9 | 9.5 | 193.9 | 267.5 | 8.1 | 178.4 | 291.7 | 6.9 |
| | 250 STD | 244.8 | 247.9 | 10.9 | 229.0 | 268.5 | 9.5 | 212.7 | 292.0 | 8.2 | 195.7 | 318.2 | 6.9 |
| | 275 STD | 276.9 | 274.0 | 11.1 | 258.6 | 297.4 | 9.7 | 239.9 | 323.9 | 8.3 | 220.6 | 353.4 | 7.0 |
| | 300 STD | 309.2 | 314.0 | 10.9 | 288.9 | 339.7 | 9.5 | 268.0 | 369.0 | 8.1 | 246.3 | 401.9 | 6.9 |
| | 350 STD | 350.6 | 356.2 | 10.9 | 327.9 | 385.2 | 9.5 | 304.4 | 418.1 | 8.2 | 280.1 | 455.1 | 6.9 |
| | 400 STD | 415.1 | 421.9 | 10.9 | 388.1 | 456.4 | 9.5 | 360.1 | 495.5 | 8.1 | 331.2 | 539.5 | 6.9 |
| | 450 STD | 455.9 | 464.0 | 10.9 | 426.7 | 501.8 | 9.5 | 396.4 | 544.7 | 8.2 | 364.9 | 592.8 | 6.9 |
| | 500 STD | 498.3 | 507.3 | 10.9 | 466.6 | 548.2 | 9.5 | 433.6 | 594.7 | 8.2 | 399.3 | 646.9 | 7.0 |
| 44 | 140 STD | 148.4 | 146.0 | 11.3 | 138.2 | 158.6 | 9.7 | 127.7 | 172.9 | 8.3 | 116.9 | 188.7 | 7.0 |
| | 155 STD | 162.9 | 158.8 | 11.3 | 151.9 | 172.6 | 9.8 | 140.5 | 188.2 | 8.4 | 128.9 | 205.4 | 7.1 |
| | 170 STD | 177.9 | 172.0 | 11.4 | 166.2 | 187.0 | 9.9 | 154.1 | 203.9 | 8.5 | 141.8 | 222.6 | 7.2 |
| | 185 STD | 193.9 | 191.4 | 11.2 | 181.2 | 207.6 | 9.7 | 168.0 | 226.0 | 8.3 | 154.5 | 246.4 | 7.1 |
| | 200 STD | 211.0 | 211.8 | 11.0 | 197.2 | 229.2 | 9.6 | 182.8 | 248.9 | 8.2 | 168.0 | 271.1 | 7.0 |
| | 225 STD | 231.3 | 232.1 | 11.0 | 216.4 | 251.2 | 9.6 | 200.9 | 272.9 | 8.3 | 184.8 | 297.3 | 7.0 |
| | 250 STD | 253.5 | 253.8 | 11.1 | 237.2 | 274.6 | 9.6 | 220.3 | 298.2 | 8.3 | 202.7 | 324.5 | 7.1 |
| | 275 STD | 286.8 | 279.9 | 11.3 | 268.0 | 303.4 | 9.8 | 248.7 | 330.1 | 8.4 | 228.8 | 359.8 | 7.2 |
| | 300 STD | 320.2 | 321.0 | 11.0 | 299.2 | 346.9 | 9.6 | 277.6 | 376.3 | 8.3 | 255.3 | 409.4 | 7.0 |
| | 350 STD | 363.1 | 364.6 | 11.0 | 339.6 | 393.8 | 9.6 | 315.3 | 426.9 | 8.3 | 290.1 | 464.0 | 7.1 |
| | 400 STD | 429.5 | 431.3 | 11.0 | 401.7 | 465.9 | 9.6 | 372.9 | 505.3 | 8.3 | 343.1 | 549.6 | 7.0 |
| | 450 STD | 471.8 | 474.7 | 11.0 | 441.6 | 512.7 | 9.6 | 410.3 | 555.9 | 8.3 | 377.8 | 604.3 | 7.1 |
| | 500 STD | 515.8 | 519.3 | 11.0 | 483.0 | 560.6 | 9.6 | 448.8 | 607.4 | 8.3 | 413.3 | 659.7 | 7.1 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

***Table P-1 (Continued). 60 Hz standard efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | 140 STD | 153.8 | 149.1 | 11.4 | 143.3 | 161.8 | 9.9 | 132.4 | 176.2 | 8.4 | 121.2 | 192.1 | 7.1 |
| | 155 STD | 168.7 | 162.2 | 11.5 | 157.4 | 176.1 | 10.0 | 145.7 | 191.7 | 8.5 | 133.7 | 209.1 | 7.2 |
| | 170 STD | 184.2 | 175.6 | 11.6 | 172.2 | 190.7 | 10.0 | 159.8 | 207.7 | 8.6 | 147.1 | 226.5 | 7.3 |
| | 185 STD | 200.7 | 195.6 | 11.3 | 187.6 | 211.9 | 9.9 | 174.1 | 230.3 | 8.5 | 160.2 | 250.9 | 7.2 |
| | 200 STD | 218.4 | 216.5 | 11.2 | 204.1 | 234.0 | 9.7 | 189.3 | 253.9 | 8.4 | 174.0 | 276.2 | 7.1 |
| | 225 STD | 239.3 | 237.4 | 11.2 | 223.9 | 256.7 | 9.7 | 207.9 | 278.5 | 8.4 | 191.3 | 303.0 | 7.1 |
| | 250 STD | 262.4 | 259.8 | 11.2 | 245.6 | 280.8 | 9.8 | 228.0 | 304.5 | 8.4 | 209.8 | 331.0 | 7.2 |
| | 275 STD | 296.9 | 286.0 | 11.5 | 277.6 | 309.6 | 10.0 | 257.6 | 336.4 | 8.6 | 237.2 | 366.2 | 7.3 |
| | 300 STD | 331.3 | 328.2 | 11.2 | 309.7 | 354.2 | 9.8 | 287.4 | 383.8 | 8.4 | 264.3 | 417.1 | 7.2 |
| | 350 STD | 375.7 | 373.2 | 11.2 | 351.5 | 402.6 | 9.8 | 326.3 | 435.8 | 8.4 | 300.3 | 473.1 | 7.2 |
| | 400 STD | 444.2 | 440.9 | 11.2 | 415.5 | 475.7 | 9.8 | 385.8 | 515.3 | 8.4 | 355.1 | 559.8 | 7.2 |
| | 450 STD | 488.0 | 485.6 | 11.2 | 456.8 | 523.9 | 9.7 | 424.4 | 567.3 | 8.4 | 390.8 | 615.9 | 7.2 |
| | 500 STD | 533.6 | 531.8 | 11.2 | 499.6 | 573.3 | 9.8 | 464.2 | 620.3 | 8.4 | 424.0 | 665.5 | 7.2 |
| 48 | 140 STD | 159.2 | 152.4 | 11.6 | 148.4 | 165.2 | 10.0 | 137.1 | 179.6 | 8.6 | 125.6 | 195.6 | 7.3 |
| | 155 STD | 174.7 | 165.7 | 11.7 | 163.0 | 179.7 | 10.1 | 151.0 | 195.4 | 8.7 | 138.6 | 212.8 | 7.4 |
| | 170 STD | 190.6 | 179.3 | 11.8 | 178.2 | 194.5 | 10.2 | 165.5 | 211.6 | 8.8 | 152.4 | 230.5 | 7.5 |
| | 185 STD | 207.6 | 199.8 | 11.5 | 194.1 | 216.2 | 10.0 | 180.2 | 234.8 | 8.6 | 165.9 | 255.4 | 7.3 |
| | 200 STD | 225.8 | 221.3 | 11.3 | 211.1 | 238.9 | 9.9 | 195.9 | 258.9 | 8.5 | 180.1 | 281.3 | 7.2 |
| | 225 STD | 247.5 | 242.8 | 11.3 | 231.6 | 262.2 | 9.9 | 215.1 | 284.2 | 8.5 | 197.9 | 308.8 | 7.3 |
| | 250 STD | 271.4 | 266.0 | 11.4 | 254.0 | 287.1 | 9.9 | 235.8 | 311.0 | 8.5 | 216.9 | 337.6 | 7.3 |
| | 275 STD | 307.2 | 292.2 | 11.6 | 287.2 | 316.0 | 10.1 | 266.7 | 342.8 | 8.7 | 245.6 | 372.8 | 7.4 |
| | 300 STD | 342.6 | 335.6 | 11.3 | 320.3 | 361.7 | 9.9 | 297.3 | 391.5 | 8.5 | 273.5 | 424.9 | 7.3 |
| | 350 STD | 388.6 | 382.1 | 11.3 | 363.5 | 411.6 | 9.9 | 337.5 | 445.0 | 8.5 | 304.5 | 469.5 | 7.3 |
| | 400 STD | 459.1 | 450.7 | 11.3 | 429.5 | 485.7 | 9.9 | 398.9 | 525.6 | 8.5 | 367.2 | 570.2 | 7.3 |
| | 450 STD | 504.3 | 496.8 | 11.3 | 472.1 | 535.3 | 9.9 | 438.7 | 578.9 | 8.5 | 394.8 | 608.1 | 7.3 |
| | 500 STD | 551.6 | 544.5 | 11.3 | 516.4 | 586.3 | 9.9 | 479.8 | 633.5 | 8.5 | 427.8 | 655.7 | 7.4 |
| 50 | 140 STD | 164.7 | 155.7 | 11.8 | 153.5 | 168.5 | 10.2 | 141.9 | 183.0 | 8.7 | 130.1 | 199.1 | 7.4 |
| | 155 STD | 180.7 | 169.3 | 11.9 | 168.7 | 183.3 | 10.3 | 156.3 | 199.1 | 8.8 | 143.6 | 216.5 | 7.5 |
| | 170 STD | 197.1 | 183.1 | 11.9 | 184.4 | 198.4 | 10.4 | 171.2 | 215.5 | 8.9 | 157.8 | 234.5 | 7.6 |
| | 185 STD | 214.6 | 204.1 | 11.7 | 200.7 | 220.6 | 10.2 | 186.4 | 239.3 | 8.8 | 170.9 | 258.6 | 7.5 |
| | 200 STD | 233.3 | 226.2 | 11.5 | 218.2 | 243.9 | 10.0 | 202.5 | 264.0 | 8.6 | 186.3 | 286.5 | 7.4 |
| | 225 STD | 255.8 | 248.4 | 11.5 | 239.4 | 267.9 | 10.0 | 222.3 | 290.0 | 8.6 | 203.1 | 311.4 | 7.4 |
| | 250 STD | 280.6 | 272.3 | 11.5 | 262.5 | 293.6 | 10.0 | 243.7 | 317.5 | 8.7 | 218.2 | 330.7 | 7.5 |
| | 275 STD | 317.6 | 298.5 | 11.8 | 297.0 | 322.4 | 10.3 | 275.9 | 349.4 | 8.9 | 250.8 | 373.1 | 7.6 |
| | 300 STD | 354.0 | 343.1 | 11.5 | 331.0 | 369.4 | 10.0 | 307.3 | 399.3 | 8.7 | 278.7 | 424.3 | 7.4 |
| | 350 STD | 401.7 | 391.1 | 11.4 | 375.7 | 420.8 | 10.0 | 348.8 | 454.3 | 8.7 | 307.4 | 462.5 | 7.5 |
| | 400 STD | 474.2 | 460.7 | 11.5 | 443.7 | 496.0 | 10.0 | 412.1 | 536.0 | 8.7 | 369.9 | 560.7 | 7.5 |
| | 450 STD | 520.9 | 508.3 | 11.4 | 487.7 | 547.0 | 10.0 | 453.1 | 590.8 | 8.7 | 396.9 | 595.5 | 7.5 |
| | 500 STD | 569.9 | 557.5 | 11.4 | 533.5 | 599.6 | 10.0 | 495.5 | 647.0 | 8.7 | 431.5 | 644.4 | 7.6 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

# Performance Data

## Full Load Performance

***Table P-2. 60 Hz high efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 140 HIGH | 142.8 | 134.5 | 11.4 | 133.3 | 146.1 | 9.9 | 123.3 | 159.3 | 8.5 | 113.1 | 174.2 | 7.2 |
| | 155 HIGH | 155.9 | 145.9 | 11.5 | 145.6 | 158.7 | 10.0 | 134.9 | 173.3 | 8.5 | 124.0 | 189.6 | 7.2 |
| | 170 HIGH | 169.9 | 157.6 | 11.6 | 158.7 | 171.7 | 10.0 | 147.2 | 187.5 | 8.6 | 135.4 | 205.3 | 7.3 |
| | 185 HIGH | 185.7 | 176.5 | 11.3 | 173.7 | 191.5 | 9.9 | 161.3 | 208.7 | 8.5 | 148.5 | 228.0 | 7.2 |
| | 200 HIGH | 202.5 | 196.0 | 11.2 | 189.5 | 212.1 | 9.8 | 176.0 | 230.5 | 8.4 | 162.1 | 251.4 | 7.2 |
| | 225 HIGH | 221.9 | 216.0 | 11.2 | 208.0 | 233.6 | 9.8 | 193.5 | 253.7 | 8.5 | 178.5 | 276.5 | 7.2 |
| | 250 HIGH | 240.9 | 235.6 | 11.1 | 226.0 | 254.9 | 9.7 | 210.5 | 276.9 | 8.4 | 194.4 | 301.8 | 7.2 |
| | 275 HIGH | 274.8 | 257.8 | 11.6 | 257.1 | 279.7 | 10.1 | 238.7 | 304.6 | 8.7 | 219.9 | 332.7 | 7.4 |
| | 300 HIGH | 306.4 | 296.7 | 11.2 | 286.9 | 320.6 | 9.8 | 266.7 | 348.0 | 8.5 | 245.8 | 379.1 | 7.2 |
| | 350 HIGH | 347.1 | 320.3 | 11.7 | 324.7 | 348.3 | 10.1 | 301.7 | 380.0 | 8.7 | 278.0 | 415.5 | 7.4 |
| | 400 HIGH | 412.6 | 399.4 | 11.2 | 386.4 | 431.4 | 9.8 | 359.3 | 468.0 | 8.5 | 331.2 | 509.5 | 7.2 |
| 42 | 140 HIGH | 148.4 | 137.3 | 11.7 | 138.5 | 149.0 | 10.1 | 128.3 | 162.3 | 8.7 | 117.7 | 177.3 | 7.4 |
| | 155 HIGH | 162.0 | 148.9 | 11.7 | 151.3 | 161.8 | 10.2 | 140.3 | 176.4 | 8.7 | 129.0 | 192.8 | 7.4 |
| | 170 HIGH | 176.4 | 160.9 | 11.8 | 164.9 | 175.0 | 10.3 | 153.1 | 190.9 | 8.8 | 140.9 | 208.7 | 7.5 |
| | 185 HIGH | 192.7 | 180.2 | 11.6 | 180.3 | 195.3 | 10.1 | 167.6 | 212.6 | 8.7 | 154.4 | 232.0 | 7.4 |
| | 200 HIGH | 210.2 | 200.3 | 11.4 | 196.8 | 216.5 | 9.9 | 182.8 | 235.0 | 8.6 | 168.4 | 255.9 | 7.3 |
| | 225 HIGH | 230.2 | 220.9 | 11.4 | 215.9 | 238.6 | 10.0 | 200.9 | 258.9 | 8.6 | 185.4 | 281.8 | 7.4 |
| | 250 HIGH | 249.9 | 241.1 | 11.3 | 234.5 | 260.5 | 9.9 | 218.5 | 282.6 | 8.6 | 201.8 | 307.7 | 7.3 |
| | 275 HIGH | 285.3 | 263.3 | 11.8 | 267.0 | 285.3 | 10.3 | 248.1 | 310.3 | 8.8 | 228.6 | 338.5 | 7.5 |
| | 300 HIGH | 317.9 | 303.2 | 11.4 | 297.8 | 327.2 | 10.0 | 276.9 | 354.8 | 8.7 | 255.3 | 386.0 | 7.4 |
| | 350 HIGH | 360.2 | 326.8 | 11.9 | 337.1 | 355.0 | 10.3 | 313.3 | 386.8 | 8.9 | 289.0 | 422.5 | 7.6 |
| | 400 HIGH | 427.9 | 408.2 | 11.4 | 400.9 | 440.3 | 10.0 | 372.9 | 477.1 | 8.6 | 343.9 | 518.8 | 7.4 |
| 44 | 140 HIGH | 154.1 | 140.1 | 11.9 | 143.9 | 151.9 | 10.3 | 133.3 | 165.3 | 8.9 | 122.4 | 180.4 | 7.5 |
| | 155 HIGH | 168.1 | 151.9 | 11.9 | 157.1 | 164.9 | 10.4 | 145.8 | 179.6 | 8.9 | 134.1 | 196.1 | 7.6 |
| | 170 HIGH | 183.1 | 164.2 | 12.0 | 171.2 | 178.3 | 10.5 | 159.0 | 194.4 | 9.0 | 146.5 | 212.3 | 7.7 |
| | 185 HIGH | 199.9 | 184.0 | 11.8 | 187.1 | 199.2 | 10.3 | 173.9 | 216.6 | 8.9 | 160.4 | 236.1 | 7.5 |
| | 200 HIGH | 217.9 | 204.7 | 11.6 | 204.1 | 221.0 | 10.1 | 189.7 | 239.6 | 8.8 | 174.9 | 260.6 | 7.5 |
| | 225 HIGH | 238.7 | 225.9 | 11.6 | 223.9 | 243.7 | 10.2 | 208.4 | 264.1 | 8.8 | 192.4 | 287.2 | 7.5 |
| | 250 HIGH | 259.2 | 246.7 | 11.5 | 243.2 | 266.2 | 10.1 | 226.6 | 288.5 | 8.7 | 209.3 | 313.7 | 7.5 |
| | 275 HIGH | 296.0 | 268.9 | 12.0 | 277.1 | 291.0 | 10.5 | 257.6 | 316.1 | 9.0 | 237.5 | 344.4 | 7.7 |
| | 300 HIGH | 329.6 | 309.9 | 11.6 | 308.8 | 334.1 | 10.2 | 287.3 | 361.8 | 8.8 | 265.0 | 393.1 | 7.5 |
| | 350 HIGH | 373.4 | 333.6 | 12.1 | 349.7 | 361.8 | 10.5 | 325.2 | 393.8 | 9.1 | 300.1 | 429.6 | 7.8 |
| | 400 HIGH | 443.4 | 417.2 | 11.6 | 415.6 | 449.4 | 10.2 | 386.6 | 486.4 | 8.8 | 356.7 | 528.3 | 7.5 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

***Table P-2 (Continued). 60 Hz high efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 140 HIGH | 159.9 | 143.1 | 12.1 | 149.4 | 154.9 | 10.5 | 138.5 | 168.4 | 9.1 | 127.2 | 183.5 | 7.7 |
| | 155 HIGH | 174.3 | 155.1 | 12.2 | 163.0 | 168.1 | 10.6 | 151.4 | 182.9 | 9.1 | 139.4 | 199.5 | 7.8 |
| | 170 HIGH | 189.8 | 167.6 | 12.3 | 177.6 | 181.8 | 10.7 | 165.1 | 197.9 | 9.2 | 152.2 | 215.9 | 7.8 |
| | 185 HIGH | 207.1 | 187.9 | 12.0 | 194.0 | 203.2 | 10.5 | 180.4 | 220.6 | 9.0 | 166.4 | 240.2 | 7.7 |
| | 200 HIGH | 225.8 | 209.2 | 11.8 | 211.5 | 225.5 | 10.3 | 196.7 | 244.2 | 8.9 | 181.4 | 265.3 | 7.6 |
| 46 | 225 HIGH | 247.4 | 231.1 | 11.8 | 232.0 | 249.0 | 10.3 | 216.1 | 269.5 | 8.9 | 199.5 | 292.6 | 7.7 |
| | 250 HIGH | 268.6 | 252.5 | 11.7 | 252.1 | 272.1 | 10.2 | 234.8 | 294.6 | 8.9 | 216.9 | 319.8 | 7.6 |
| | 275 HIGH | 306.8 | 274.7 | 12.2 | 287.3 | 296.8 | 10.7 | 267.2 | 322.1 | 9.2 | 246.6 | 350.5 | 7.9 |
| | 300 HIGH | 341.5 | 316.8 | 11.8 | 320.1 | 341.1 | 10.4 | 297.8 | 368.9 | 9.0 | 274.8 | 400.3 | 7.7 |
| | 350 HIGH | 387.0 | 340.4 | 12.3 | 362.5 | 368.8 | 10.7 | 337.3 | 400.9 | 9.3 | 311.5 | 436.8 | 7.9 |
| | 400 HIGH | 459.2 | 426.4 | 11.8 | 430.5 | 458.8 | 10.3 | 400.6 | 495.9 | 9.0 | 369.8 | 538.0 | 7.7 |
| | 140 HIGH | 165.7 | 146.1 | 12.3 | 154.9 | 158.0 | 10.7 | 143.7 | 171.5 | 9.2 | 132.1 | 186.7 | 7.9 |
| | 155 HIGH | 180.7 | 158.3 | 12.4 | 169.1 | 171.4 | 10.8 | 157.0 | 186.3 | 9.3 | 144.7 | 202.9 | 7.9 |
| | 170 HIGH | 196.7 | 171.0 | 12.5 | 184.2 | 185.3 | 10.9 | 171.3 | 201.5 | 9.4 | 158.0 | 219.5 | 8.0 |
| | 185 HIGH | 214.5 | 191.9 | 12.2 | 201.0 | 207.3 | 10.6 | 187.0 | 224.8 | 9.2 | 172.6 | 244.4 | 7.9 |
| | 200 HIGH | 233.8 | 213.9 | 11.9 | 219.1 | 230.2 | 10.5 | 203.8 | 249.0 | 9.1 | 188.0 | 270.2 | 7.8 |
| 48 | 225 HIGH | 256.2 | 236.4 | 12.0 | 240.3 | 254.4 | 10.5 | 223.8 | 275.0 | 9.1 | 206.7 | 298.2 | 7.8 |
| | 250 HIGH | 278.1 | 258.4 | 11.8 | 261.0 | 278.2 | 10.4 | 243.2 | 300.7 | 9.0 | 224.6 | 326.1 | 7.7 |
| | 275 HIGH | 317.9 | 280.5 | 12.4 | 297.8 | 302.8 | 10.8 | 277.0 | 328.1 | 9.4 | 255.8 | 356.6 | 8.0 |
| | 300 HIGH | 353.6 | 323.9 | 12.0 | 331.5 | 348.2 | 10.5 | 308.5 | 376.1 | 9.1 | 284.8 | 407.7 | 7.8 |
| | 350 HIGH | 400.7 | 347.4 | 12.5 | 375.5 | 375.9 | 10.9 | 349.7 | 408.1 | 9.5 | 323.1 | 444.1 | 8.1 |
| | 400 HIGH | 475.2 | 435.8 | 11.9 | 445.6 | 468.3 | 10.5 | 414.8 | 505.6 | 9.1 | 383.1 | 547.8 | 7.8 |
| | 140 HIGH | 171.7 | 149.2 | 12.5 | 160.5 | 161.2 | 10.9 | 149.0 | 174.7 | 9.4 | 137.0 | 189.9 | 8.0 |
| | 155 HIGH | 187.1 | 161.6 | 12.6 | 175.2 | 174.8 | 11.0 | 162.8 | 189.7 | 9.5 | 150.0 | 206.3 | 8.1 |
| | 170 HIGH | 203.7 | 174.5 | 12.7 | 190.8 | 188.9 | 11.1 | 177.5 | 205.1 | 9.6 | 163.9 | 223.2 | 8.2 |
| | 185 HIGH | 222.0 | 196.0 | 12.4 | 208.1 | 211.4 | 10.8 | 193.7 | 229.0 | 9.4 | 178.9 | 248.7 | 8.0 |
| | 200 HIGH | 242.0 | 218.6 | 12.1 | 226.8 | 235.0 | 10.6 | 211.0 | 253.8 | 9.2 | 194.7 | 275.1 | 7.9 |
| 50 | 225 HIGH | 265.1 | 241.8 | 12.1 | 248.7 | 259.9 | 10.6 | 231.7 | 280.6 | 9.2 | 214.0 | 303.9 | 7.9 |
| | 250 HIGH | 287.8 | 264.5 | 12.0 | 270.1 | 284.4 | 10.5 | 251.7 | 307.0 | 9.1 | 232.4 | 332.4 | 7.9 |
| | 275 HIGH | 329.1 | 286.6 | 12.6 | 308.4 | 308.9 | 11.0 | 287.0 | 334.3 | 9.6 | 265.1 | 362.8 | 8.2 |
| | 300 HIGH | 365.9 | 331.1 | 12.2 | 343.0 | 355.5 | 10.7 | 319.3 | 383.5 | 9.3 | 294.9 | 415.2 | 8.0 |
| | 350 HIGH | 414.7 | 354.6 | 12.7 | 388.8 | 383.2 | 11.1 | 362.2 | 415.5 | 9.6 | 334.9 | 451.5 | 8.3 |
| | 400 HIGH | 491.5 | 445.5 | 12.1 | 460.9 | 478.1 | 10.6 | 429.3 | 515.5 | 9.3 | 396.5 | 557.8 | 8.0 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

# Performance Data

## Full Load Performance

***Table P-3. 60 Hz standard efficiency machines in SI units***

| Evaporator Leaving Water Temperature (C) | Unit Size Model RTAC | Condenser Entering Air Temperature (C) 30 kW cooling | 30 kW input | 30 COP | 35 kW cooling | 35 kW input | 35 COP | 40 kW cooling | 40 kW input | 40 COP | 45 kW cooling | 45 kW input | 45 COP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 140 STD | 490.8 | 142.6 | 3.2 | 459.9 | 153.9 | 2.8 | 428.3 | 166.5 | 2.4 | 395.9 | 180.5 | 2.1 |
| | 155 STD | 538.7 | 155.2 | 3.2 | 505.6 | 167.5 | 2.8 | 471.1 | 181.3 | 2.4 | 436.3 | 196.5 | 2.1 |
| | 170 STD | 588.9 | 168.1 | 3.2 | 553.4 | 181.6 | 2.8 | 516.9 | 196.6 | 2.4 | 479.6 | 213.1 | 2.1 |
| | 185 STD | 642.4 | 186.9 | 3.2 | 603.7 | 201.5 | 2.8 | 564.0 | 217.7 | 2.4 | 523.2 | 235.7 | 2.1 |
| | 200 STD | 699.3 | 206.5 | 3.1 | 657.5 | 222.1 | 2.7 | 614.3 | 239.6 | 2.4 | 569.6 | 259.1 | 2.1 |
| 5 | 225 STD | 766.5 | 226.1 | 3.1 | 721.5 | 243.3 | 2.8 | 675.1 | 262.5 | 2.4 | 626.9 | 283.9 | 2.1 |
| | 250 STD | 840.0 | 247.0 | 3.1 | 791.1 | 265.6 | 2.8 | 740.1 | 286.5 | 2.4 | 687.7 | 309.7 | 2.1 |
| | 275 STD | 950.0 | 273.3 | 3.2 | 893.1 | 294.4 | 2.8 | 834.7 | 318.0 | 2.4 | 774.9 | 344.2 | 2.1 |
| | 300 STD | 1061.1 | 313.0 | 3.1 | 998.2 | 336.2 | 2.8 | 932.8 | 362.3 | 2.4 | 865.6 | 391.3 | 2.1 |
| | 350 STD | 1203.2 | 354.9 | 3.1 | 1132.9 | 381.0 | 2.8 | 1059.7 | 410.4 | 2.4 | 984.5 | 443.0 | 2.1 |
| | 400 STD | 1425.0 | 420.5 | 3.1 | 1341.0 | 451.7 | 2.8 | 1253.8 | 486.6 | 2.4 | 1164.2 | 525.4 | 2.1 |
| | 450 STD | 1565.3 | 462.3 | 3.1 | 1474.3 | 496.4 | 2.8 | 1380.0 | 534.7 | 2.4 | 1282.6 | 577.2 | 2.1 |
| | 500 STD | 1711.2 | 505.2 | 3.1 | 1612.1 | 542.2 | 2.8 | 1509.8 | 583.6 | 2.4 | 1403.6 | 629.7 | 2.1 |
| | 140 STD | 523.9 | 148.1 | 3.3 | 491.5 | 159.6 | 2.9 | 457.8 | 172.3 | 2.5 | 423.3 | 186.4 | 2.1 |
| | 155 STD | 574.9 | 161.2 | 3.3 | 539.7 | 173.7 | 2.9 | 503.8 | 187.6 | 2.5 | 466.6 | 202.9 | 2.2 |
| | 170 STD | 628.0 | 174.5 | 3.3 | 590.7 | 188.1 | 2.9 | 552.4 | 203.3 | 2.5 | 513.0 | 219.9 | 2.2 |
| | 185 STD | 684.6 | 194.2 | 3.2 | 643.8 | 208.9 | 2.9 | 601.9 | 225.3 | 2.5 | 559.0 | 243.5 | 2.2 |
| | 200 STD | 745.0 | 214.8 | 3.2 | 700.7 | 230.6 | 2.8 | 654.7 | 248.3 | 2.5 | 607.9 | 268.0 | 2.1 |
| 7 | 225 STD | 816.4 | 235.5 | 3.2 | 769.0 | 252.8 | 2.8 | 719.4 | 272.3 | 2.5 | 668.4 | 293.9 | 2.1 |
| | 250 STD | 895.2 | 257.5 | 3.2 | 843.1 | 276.4 | 2.8 | 789.0 | 297.6 | 2.5 | 732.7 | 321.0 | 2.2 |
| | 275 STD | 1012.6 | 283.9 | 3.3 | 952.5 | 305.3 | 2.9 | 891.0 | 329.2 | 2.5 | 827.7 | 355.5 | 2.2 |
| | 300 STD | 1130.0 | 325.6 | 3.2 | 1063.2 | 349.1 | 2.8 | 994.3 | 375.5 | 2.5 | 923.3 | 404.8 | 2.1 |
| | 350 STD | 1281.9 | 370.0 | 3.2 | 1206.7 | 396.4 | 2.8 | 1129.0 | 426.1 | 2.5 | 1049.2 | 459.0 | 2.2 |
| | 400 STD | 1516.1 | 437.4 | 3.2 | 1427.1 | 468.9 | 2.8 | 1335.0 | 504.2 | 2.5 | 1240.5 | 543.4 | 2.2 |
| | 450 STD | 1665.5 | 481.5 | 3.2 | 1568.8 | 516.1 | 2.8 | 1469.0 | 554.7 | 2.5 | 1365.6 | 597.7 | 2.2 |
| | 500 STD | 1820.9 | 527.0 | 3.2 | 1715.8 | 564.4 | 2.8 | 1606.5 | 606.3 | 2.5 | 1493.6 | 652.8 | 2.2 |
| | 140 STD | 558.0 | 153.9 | 3.4 | 523.5 | 165.5 | 3.0 | 488.0 | 178.4 | 2.6 | 451.5 | 192.6 | 2.2 |
| | 1155 STD | 612.1 | 167.4 | 3.4 | 575.2 | 180.1 | 3.0 | 536.9 | 194.1 | 2.6 | 497.9 | 209.5 | 2.2 |
| | 170 STD | 668.4 | 181.2 | 3.4 | 628.7 | 194.9 | 3.0 | 588.2 | 210.2 | 2.6 | 547.1 | 226.9 | 2.3 |
| | 185 STD | 727.8 | 201.8 | 3.3 | 684.9 | 216.7 | 2.9 | 640.6 | 233.3 | 2.6 | 595.6 | 251.6 | 2.2 |
| | 200 STD | 791.5 | 223.5 | 3.3 | 744.7 | 239.4 | 2.9 | 696.5 | 257.3 | 2.5 | 646.6 | 277.2 | 2.2 |
| 9 | 225 STD | 867.8 | 245.2 | 3.3 | 817.1 | 262.8 | 2.9 | 764.7 | 282.5 | 2.5 | 710.6 | 304.3 | 2.2 |
| | 250 STD | 951.8 | 268.6 | 3.3 | 896.2 | 287.8 | 2.9 | 838.6 | 309.1 | 2.5 | 778.8 | 332.7 | 2.2 |
| | 275 STD | 1077.0 | 295.1 | 3.4 | 1013.3 | 316.6 | 3.0 | 948.3 | 340.7 | 2.6 | 881.8 | 367.2 | 2.3 |
| | 300 STD | 1200.7 | 338.8 | 3.3 | 1130.0 | 362.5 | 2.9 | 1056.9 | 389.1 | 2.5 | 982.0 | 418.7 | 2.2 |
| | 350 STD | 1362.5 | 385.8 | 3.3 | 1282.6 | 412.5 | 2.9 | 1200.0 | 442.4 | 2.5 | 1114.9 | 475.6 | 2.2 |
| | 400 STD | 1609.3 | 455.0 | 3.3 | 1515.4 | 486.8 | 2.9 | 1418.4 | 522.4 | 2.5 | 1318.2 | 562.0 | 2.2 |
| | 450 STD | 1768.2 | 501.6 | 3.3 | 1665.5 | 536.5 | 2.9 | 1559.7 | 575.6 | 2.5 | 1450.0 | 618.8 | 2.2 |
| | 500 STD | 1933.8 | 549.7 | 3.3 | 1822.0 | 587.6 | 2.9 | 1705.6 | 629.9 | 2.5 | 1585.4 | 676.7 | 2.2 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C and the standard evaporator pass arrangement.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

***Table P-4. 60 Hz high efficiency machines in SI units***

| Evaporator Leaving Water Temperature (C) | Unit Size Model RTAC | Condenser Entering Air Temperature (C) 30 kW cooling | 30 kW input | 30 COP | 35 kW cooling | 35 kW input | 35 COP | 40 kW cooling | 40 kW input | 40 COP | 45 kW cooling | 45 kW input | 45 COP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 140 HIGH | 508.8 | 137.0 | 3.3 | 477.8 | 147.5 | 2.9 | 445.8 | 159.4 | 2.6 | 413.1 | 172.6 | 2.2 |
| | 155 HIGH | 555.2 | 148.6 | 3.4 | 522.1 | 160.2 | 3.0 | 487.7 | 173.3 | 2.6 | 452.5 | 187.8 | 2.2 |
| | 170 HIGH | 604.8 | 160.6 | 3.4 | 568.9 | 173.3 | 3.0 | 532.0 | 187.5 | 2.6 | 494.4 | 203.3 | 2.2 |
| | 185 HIGH | 661.0 | 179.7 | 3.3 | 622.3 | 193.4 | 2.9 | 582.6 | 208.8 | 2.6 | 541.8 | 226.0 | 2.2 |
| | 200 HIGH | 720.8 | 199.7 | 3.3 | 678.9 | 214.3 | 2.9 | 635.7 | 230.8 | 2.5 | 591.0 | 249.3 | 2.2 |
| | 225 HIGH | 790.1 | 220.1 | 3.3 | 745.0 | 236.1 | 2.9 | 698.6 | 254.2 | 2.5 | 650.5 | 274.4 | 2.2 |
| | 250 HIGH | 857.6 | 240.2 | 3.2 | 809.7 | 257.7 | 2.9 | 759.8 | 277.4 | 2.5 | 708.1 | 299.5 | 2.2 |
| | 275 HIGH | 978.5 | 262.6 | 3.4 | 921.2 | 282.5 | 3.0 | 862.5 | 304.8 | 2.6 | 802.0 | 329.7 | 2.3 |
| | 300 HIGH | 1090.7 | 302.2 | 3.3 | 1027.7 | 323.9 | 2.9 | 963.0 | 348.5 | 2.6 | 895.9 | 376.0 | 2.2 |
| | 350 HIGH | 1235.5 | 326.2 | 3.4 | 1163.4 | 351.6 | 3.0 | 1089.6 | 380.0 | 2.6 | 1013.7 | 411.5 | 2.3 |
| | 400 HIGH | 1468.3 | 406.8 | 3.3 | 1384.3 | 435.8 | 2.9 | 1297.1 | 468.7 | 2.5 | 1207.0 | 505.4 | 2.2 |
| 7 | 140 HIGH | 544.3 | 142.1 | 3.5 | 511.6 | 152.8 | 3.1 | 478.2 | 164.8 | 2.7 | 443.4 | 178.1 | 2.3 |
| | 155 HIGH | 593.9 | 154.1 | 3.5 | 558.7 | 165.9 | 3.1 | 522.5 | 179.1 | 2.7 | 485.6 | 193.7 | 2.3 |
| | 170 HIGH | 646.6 | 166.5 | 3.5 | 608.6 | 179.4 | 3.1 | 569.9 | 193.7 | 2.7 | 530.2 | 209.6 | 2.3 |
| | 185 HIGH | 706.0 | 186.6 | 3.4 | 665.2 | 200.4 | 3.0 | 623.0 | 216.0 | 2.7 | 580.1 | 233.2 | 2.3 |
| | 200 HIGH | 769.7 | 207.6 | 3.4 | 725.4 | 222.3 | 3.0 | 679.6 | 239.0 | 2.6 | 632.5 | 257.6 | 2.3 |
| | 225 HIGH | 843.5 | 229.1 | 3.4 | 795.7 | 245.3 | 3.0 | 746.5 | 263.6 | 2.6 | 695.5 | 284.0 | 2.3 |
| | 250 HIGH | 915.6 | 250.3 | 3.3 | 864.6 | 268.0 | 3.0 | 811.5 | 288.0 | 2.6 | 756.3 | 310.3 | 2.3 |
| | 275 HIGH | 1045.7 | 272.7 | 3.5 | 985.2 | 292.7 | 3.1 | 923.0 | 315.3 | 2.7 | 859.0 | 340.3 | 2.3 |
| | 300 HIGH | 1164.2 | 314.3 | 3.4 | 1097.7 | 336.2 | 3.0 | 1028.8 | 361.0 | 2.6 | 958.1 | 388.7 | 2.3 |
| | 350 HIGH | 1318.9 | 338.3 | 3.5 | 1242.9 | 363.9 | 3.1 | 1165.2 | 392.5 | 2.7 | 1085.4 | 424.3 | 2.4 |
| | 400 HIGH | 1566.0 | 423.0 | 3.4 | 1476.7 | 452.3 | 3.0 | 1384.6 | 485.4 | 2.6 | 1289.7 | 522.4 | 2.3 |
| 9 | 140 HIGH | 581.2 | 147.5 | 3.6 | 546.7 | 158.3 | 3.2 | 511.2 | 170.4 | 2.8 | 474.3 | 183.9 | 2.4 |
| | 155 HIGH | 633.6 | 159.9 | 3.6 | 596.7 | 171.8 | 3.2 | 558.3 | 185.0 | 2.8 | 519.3 | 199.8 | 2.4 |
| | 170 HIGH | 689.8 | 172.7 | 3.6 | 649.8 | 185.7 | 3.2 | 609.0 | 200.1 | 2.8 | 567.1 | 216.1 | 2.4 |
| | 185 HIGH | 752.4 | 193.8 | 3.5 | 709.2 | 207.7 | 3.1 | 664.9 | 223.3 | 2.7 | 619.5 | 240.7 | 2.4 |
| | 200 HIGH | 819.9 | 215.9 | 3.5 | 773.2 | 230.7 | 3.1 | 724.7 | 247.5 | 2.7 | 674.7 | 266.2 | 2.4 |
| | 225 HIGH | 898.3 | 238.6 | 3.5 | 848.1 | 254.9 | 3.1 | 795.7 | 273.4 | 2.7 | 741.5 | 293.9 | 2.4 |
| | 250 HIGH | 975.3 | 260.9 | 3.4 | 921.2 | 278.8 | 3.0 | 864.6 | 299.0 | 2.7 | 805.9 | 321.4 | 2.3 |
| | 275 HIGH | 1114.6 | 283.3 | 3.6 | 1050.9 | 303.4 | 3.2 | 985.2 | 326.1 | 2.8 | 917.7 | 351.3 | 2.4 |
| | 300 HIGH | 1240.1 | 326.9 | 3.5 | 1169.4 | 348.9 | 3.1 | 1096.6 | 373.9 | 2.7 | 1021.8 | 401.8 | 2.4 |
| | 350 HIGH | 1405.4 | 350.8 | 3.6 | 1325.2 | 376.6 | 3.2 | 1243.3 | 405.5 | 2.8 | 1159.2 | 437.4 | 2.5 |
| | 400 HIGH | 1666.2 | 439.9 | 3.5 | 1572.0 | 469.3 | 3.1 | 1474.6 | 502.7 | 2.7 | 1374.4 | 540.0 | 2.4 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C and the standard evaporator pass arrangement.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

***Table P-5. 50 Hz standard efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 140 STD | 134.2 | 144.4 | 10.6 | 124.5 | 158.0 | 9.0 | 114.5 | 173.1 | 7.6 | 104.3 | 189.8 | 6.4 |
| | 155 STD | 146.7 | 159.3 | 10.5 | 136.1 | 173.7 | 9.0 | 125.3 | 189.9 | 7.6 | 114.2 | 207.8 | 6.4 |
| | 170 STD | 159.8 | 174.7 | 10.4 | 148.4 | 190.1 | 8.9 | 136.7 | 207.4 | 7.6 | 124.7 | 226.6 | 6.4 |
| | 185 STD | 176.5 | 190.4 | 10.6 | 164.2 | 207.0 | 9.1 | 151.6 | 225.7 | 7.7 | 138.6 | 246.5 | 6.5 |
| | 200 STD | 194.3 | 206.8 | 10.7 | 181.1 | 224.8 | 9.2 | 167.4 | 244.9 | 7.9 | 153.3 | 267.2 | 6.6 |
| | 250 STD | 233.2 | 248.3 | 10.7 | 217.0 | 270.9 | 9.2 | 200.3 | 296.1 | 7.8 | 183.1 | 323.9 | 6.5 |
| | 275 STD | 260.0 | 279.9 | 10.6 | 241.9 | 304.2 | 9.1 | 223.3 | 331.4 | 7.8 | 204.2 | 361.7 | 6.5 |
| | 300 STD | 295.0 | 313.3 | 10.7 | 275.0 | 340.0 | 9.3 | 254.4 | 370.1 | 7.9 | 230.9 | 398.6 | 6.7 |
| | 350 STD | 326.4 | 354.5 | 10.5 | 303.5 | 385.4 | 9.0 | 279.9 | 420.0 | 7.7 | 254.5 | 456.0 | 6.5 |
| | 375 STD | 361.5 | 388.0 | 10.6 | 336.7 | 421.4 | 9.2 | 311.2 | 458.8 | 7.8 | 280.9 | 491.7 | 6.6 |
| | 400 STD | 396.1 | 421.1 | 10.7 | 369.5 | 457.0 | 9.3 | 342.0 | 497.2 | 7.9 | 305.8 | 525.6 | 6.7 |
| 42 | 140 STD | 139.1 | 147.6 | 10.8 | 129.0 | 161.3 | 9.2 | 118.8 | 176.5 | 7.8 | 107.1 | 190.7 | 6.5 |
| | 155 STD | 151.9 | 162.9 | 10.7 | 141.0 | 177.4 | 9.1 | 129.9 | 193.7 | 7.7 | 116.7 | 207.9 | 6.5 |
| | 170 STD | 165.4 | 178.7 | 10.6 | 153.7 | 194.2 | 9.1 | 141.6 | 211.6 | 7.7 | 127.5 | 227.1 | 6.5 |
| | 185 STD | 182.6 | 194.7 | 10.7 | 170.0 | 211.6 | 9.2 | 157.0 | 230.5 | 7.9 | 140.9 | 245.5 | 6.6 |
| | 200 STD | 201.1 | 211.6 | 10.9 | 187.5 | 229.8 | 9.4 | 173.3 | 250.1 | 8.0 | 154.9 | 264.4 | 6.8 |
| | 250 STD | 241.5 | 253.9 | 10.9 | 224.7 | 276.6 | 9.3 | 207.5 | 302.0 | 7.9 | 185.9 | 321.7 | 6.7 |
| | 275 STD | 269.1 | 286.4 | 10.7 | 250.4 | 310.8 | 9.2 | 231.2 | 338.3 | 7.9 | 206.6 | 358.2 | 6.7 |
| | 300 STD | 305.3 | 320.6 | 10.9 | 284.7 | 347.7 | 9.4 | 263.4 | 378.0 | 8.0 | 232.0 | 391.7 | 6.8 |
| | 350 STD | 337.6 | 362.6 | 10.6 | 314.0 | 393.7 | 9.2 | 289.7 | 428.6 | 7.8 | 256.5 | 448.8 | 6.6 |
| | 375 STD | 373.9 | 396.9 | 10.8 | 348.4 | 430.6 | 9.3 | 322.0 | 468.4 | 7.9 | 282.5 | 483.3 | 6.8 |
| | 400 STD | 409.7 | 430.9 | 10.9 | 382.2 | 467.2 | 9.4 | 353.8 | 507.8 | 8.0 | 308.7 | 519.2 | 6.9 |
| 44 | 140 STD | 144.0 | 150.8 | 10.9 | 133.7 | 164.6 | 9.3 | 123.1 | 180.0 | 7.9 | 108.1 | 187.6 | 6.7 |
| | 155 STD | 157.3 | 166.5 | 10.8 | 146.0 | 181.2 | 9.3 | 134.5 | 197.6 | 7.9 | 118.0 | 205.1 | 6.6 |
| | 170 STD | 171.1 | 182.8 | 10.7 | 159.0 | 198.4 | 9.2 | 146.6 | 216.0 | 7.8 | 128.5 | 223.4 | 6.6 |
| | 185 STD | 188.9 | 199.2 | 10.8 | 175.9 | 216.2 | 9.3 | 162.5 | 235.3 | 8.0 | 142.5 | 242.7 | 6.8 |
| | 200 STD | 208.0 | 216.6 | 11.0 | 193.9 | 234.9 | 9.5 | 179.4 | 255.5 | 8.1 | 155.6 | 259.4 | 6.9 |
| | 250 STD | 249.8 | 259.5 | 11.0 | 232.6 | 282.5 | 9.5 | 214.8 | 308.1 | 8.0 | 187.6 | 316.8 | 6.8 |
| | 275 STD | 278.3 | 293.0 | 10.9 | 259.0 | 317.7 | 9.4 | 239.2 | 345.3 | 8.0 | 207.8 | 351.8 | 6.8 |
| | 300 STD | 315.7 | 328.1 | 11.0 | 294.4 | 355.5 | 9.5 | 272.4 | 386.1 | 8.1 | 234.1 | 386.4 | 7.0 |
| | 350 STD | 349.0 | 370.8 | 10.8 | 324.6 | 402.2 | 9.3 | 299.6 | 437.3 | 7.9 | 258.1 | 440.8 | 6.8 |
| | 375 STD | 386.4 | 406.0 | 10.9 | 360.1 | 440.1 | 9.4 | 332.9 | 478.2 | 8.0 | 285.2 | 476.9 | 6.9 |
| | 400 STD | 423.4 | 440.9 | 11.0 | 395.1 | 477.6 | 9.5 | 365.8 | 518.7 | 8.1 | 311.4 | 511.7 | 7.0 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

***Table P-5 (Continued). 50 Hz standard efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 | | | 95 | | | 105 | | | 115 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tons | kW input | EER | Tons | kW input | EER | Ton | kW input | EER | Tons | kW input | EER |
| 46 | 140 STD | 149.0 | 154.1 | 11.1 | 138.4 | 168.0 | 9.5 | 127.5 | 183.5 | 8.0 | 109.0 | 184.2 | 6.8 |
| | 155 STD | 162.6 | 170.3 | 10.9 | 151.1 | 185.1 | 9.4 | 139.2 | 201.6 | 8.0 | 119.2 | 202.0 | 6.8 |
| | 170 STD | 176.8 | 187.0 | 10.8 | 164.3 | 202.7 | 9.3 | 151.6 | 220.4 | 7.9 | 130.0 | 220.5 | 6.8 |
| | 185 STD | 195.2 | 203.8 | 11.0 | 181.8 | 221.0 | 9.5 | 168.0 | 240.2 | 8.1 | 143.2 | 237.9 | 6.9 |
| | 200 STD | 215.0 | 221.6 | 11.1 | 200.4 | 240.2 | 9.6 | 185.4 | 261.0 | 8.2 | 157.0 | 255.5 | 7.1 |
| | 250 STD | 258.3 | 265.3 | 11.2 | 240.5 | 288.5 | 9.6 | 222.2 | 314.3 | 8.2 | 189.0 | 311.4 | 7.0 |
| | 275 STD | 287.6 | 299.7 | 11.0 | 267.7 | 324.6 | 9.5 | 247.3 | 352.5 | 8.1 | 209.9 | 346.9 | 7.0 |
| | 300 STD | 326.2 | 335.8 | 11.1 | 304.2 | 363.5 | 9.6 | 281.6 | 394.5 | 8.2 | 236.0 | 380.3 | 7.2 |
| | 350 STD | 360.5 | 379.3 | 10.9 | 335.4 | 410.8 | 9.4 | 309.6 | 446.1 | 8.0 | 260.7 | 434.6 | 6.9 |
| | 375 STD | 399.1 | 415.4 | 11.0 | 372.0 | 449.7 | 9.5 | 344.0 | 488.2 | 8.1 | 287.7 | 469.5 | 7.1 |
| | 400 STD | 437.3 | 451.2 | 11.1 | 408.1 | 488.3 | 9.6 | 377.9 | 529.9 | 8.2 | 313.8 | 503.1 | 7.2 |
| 48 | 140 STD | 154.0 | 157.4 | 11.2 | 143.1 | 171.5 | 9.6 | 131.9 | 187.1 | 8.2 | 109.7 | 180.4 | 7.0 |
| | 155 STD | 168.1 | 174.1 | 11.1 | 156.2 | 189.0 | 9.5 | 144.0 | 205.6 | 8.1 | 120.2 | 198.6 | 7.0 |
| | 170 STD | 182.6 | 191.2 | 10.9 | 169.8 | 207.1 | 9.4 | 156.6 | 224.8 | 8.0 | 130.6 | 215.9 | 7.0 |
| | 185 STD | 201.6 | 208.5 | 11.1 | 187.8 | 225.8 | 9.6 | 173.5 | 245.2 | 8.2 | 144.5 | 234.1 | 7.1 |
| | 200 STD | 222.0 | 226.8 | 11.2 | 207.0 | 245.6 | 9.7 | 191.6 | 266.6 | 8.3 | 158.3 | 251.1 | 7.3 |
| | 250 STD | 266.9 | 271.2 | 11.3 | 248.5 | 294.6 | 9.7 | 229.7 | 320.7 | 8.3 | 190.3 | 305.3 | 7.2 |
| | 275 STD | 297.0 | 306.7 | 11.1 | 276.5 | 331.8 | 9.6 | 255.5 | 359.9 | 8.2 | 210.6 | 339.0 | 7.2 |
| | 300 STD | 336.8 | 343.7 | 11.2 | 314.2 | 371.7 | 9.7 | 286.9 | 394.9 | 8.4 | 237.7 | 373.3 | 7.3 |
| | 350 STD | 372.1 | 387.9 | 11.0 | 346.2 | 419.6 | 9.5 | 317.0 | 449.5 | 8.1 | 263.1 | 427.7 | 7.1 |
| | 375 STD | 412.0 | 425.0 | 11.1 | 384.0 | 459.6 | 9.6 | 349.1 | 485.5 | 8.3 | 290.0 | 461.1 | 7.3 |
| | 400 STD | 451.4 | 461.8 | 11.2 | 421.3 | 499.3 | 9.7 | 381.5 | 523.0 | 8.4 | 315.9 | 493.3 | 7.4 |
| 50 | 140 STD | 159.1 | 160.9 | 11.4 | 147.9 | 175.0 | 9.7 | 134.3 | 186.5 | 8.3 | 111.0 | 177.7 | 7.2 |
| | 155 STD | 173.6 | 178.0 | 11.2 | 161.3 | 193.0 | 9.6 | 146.1 | 204.1 | 8.3 | 121.8 | 196.2 | 7.2 |
| | 170 STD | 188.4 | 195.6 | 11.1 | 175.2 | 211.5 | 9.5 | 159.1 | 223.7 | 8.2 | 131.8 | 212.3 | 7.2 |
| | 185 STD | 208.0 | 213.3 | 11.2 | 193.8 | 230.8 | 9.7 | 175.3 | 242.2 | 8.4 | 145.6 | 229.8 | 7.3 |
| | 200 STD | 229.1 | 232.1 | 11.3 | 213.7 | 251.1 | 9.8 | 192.5 | 261.3 | 8.5 | 159.7 | 246.8 | 7.5 |
| | 250 STD | 275.6 | 277.3 | 11.4 | 256.7 | 300.9 | 9.8 | 231.7 | 315.6 | 8.5 | 192.5 | 301.0 | 7.4 |
| | 275 STD | 306.5 | 313.8 | 11.2 | 285.4 | 339.0 | 9.7 | 257.0 | 353.1 | 8.4 | 212.8 | 334.2 | 7.3 |
| | 300 STD | 347.6 | 351.9 | 11.3 | 324.3 | 380.1 | 9.8 | 288.1 | 386.4 | 8.6 | 240.5 | 369.0 | 7.5 |
| | 350 STD | 383.8 | 396.7 | 11.1 | 357.2 | 428.6 | 9.6 | 319.1 | 441.0 | 8.4 | 264.9 | 420.0 | 7.3 |
| | 375 STD | 424.9 | 434.8 | 11.2 | 396.1 | 469.7 | 9.7 | 350.8 | 475.3 | 8.5 | 292.4 | 454.4 | 7.4 |
| | 400 STD | 465.6 | 472.6 | 11.3 | 434.6 | 510.5 | 9.8 | 382.9 | 511.2 | 8.6 | 319.3 | 488.3 | 7.5 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

# Performance Data

## Full Load Performance

***Table P-6. 50 Hz high efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 140 HIGH | 140.0 | 137.2 | 11.5 | 130.3 | 149.9 | 9.8 | 120.2 | 164.2 | 8.3 | 110.0 | 180.0 | 7.0 |
| | 155 HIGH | 152.2 | 151.3 | 11.3 | 141.6 | 164.9 | 9.7 | 130.8 | 180.2 | 8.3 | 119.6 | 197.2 | 6.9 |
| | 170 HIGH | 165.0 | 166.0 | 11.2 | 153.6 | 180.4 | 9.6 | 141.8 | 196.7 | 8.2 | 129.7 | 214.9 | 6.9 |
| | 185 HIGH | 182.7 | 181.9 | 11.3 | 170.5 | 197.6 | 9.8 | 157.8 | 215.3 | 8.4 | 144.8 | 235.0 | 7.1 |
| | 200 HIGH | 201.4 | 198.5 | 11.5 | 188.3 | 215.4 | 9.9 | 174.6 | 234.4 | 8.5 | 160.4 | 255.6 | 7.2 |
| | 250 HIGH | 240.8 | 242.2 | 11.3 | 224.3 | 263.8 | 9.7 | 207.2 | 288.0 | 8.2 | 189.7 | 314.8 | 6.9 |
| | 275 HIGH | 269.3 | 267.5 | 11.4 | 251.2 | 290.2 | 9.8 | 232.4 | 315.9 | 8.4 | 213.2 | 344.6 | 7.1 |
| | 300 HIGH | 304.9 | 300.4 | 11.5 | 285.1 | 325.5 | 10.0 | 264.5 | 353.8 | 8.6 | 243.3 | 385.5 | 7.3 |
| | 350 HIGH | 337.2 | 337.2 | 11.3 | 314.2 | 366.0 | 9.7 | 290.5 | 398.7 | 8.3 | 266.2 | 435.2 | 7.0 |
| | 375 HIGH | 373.4 | 370.5 | 11.4 | 348.7 | 401.7 | 9.9 | 323.2 | 437.0 | 8.4 | 296.9 | 476.5 | 7.1 |
| | 400 HIGH | 410.4 | 404.4 | 11.5 | 383.8 | 437.9 | 10.0 | 356.3 | 475.8 | 8.6 | 327.8 | 518.1 | 7.3 |
| 42 | 140 HIGH | 145.3 | 140.1 | 11.7 | 135.3 | 152.9 | 10.0 | 125.0 | 167.3 | 8.5 | 114.4 | 183.2 | 7.2 |
| | 155 HIGH | 157.9 | 154.6 | 11.5 | 147.0 | 168.3 | 9.9 | 135.8 | 183.7 | 8.4 | 124.3 | 200.8 | 7.1 |
| | 170 HIGH | 171.1 | 169.7 | 11.4 | 159.4 | 184.2 | 9.8 | 147.2 | 200.6 | 8.4 | 134.8 | 219.0 | 7.1 |
| | 185 HIGH | 189.4 | 186.0 | 11.5 | 176.7 | 201.8 | 9.9 | 163.7 | 219.6 | 8.5 | 150.3 | 239.5 | 7.2 |
| | 200 HIGH | 208.8 | 203.0 | 11.6 | 195.2 | 220.0 | 10.1 | 181.1 | 239.2 | 8.6 | 166.5 | 260.6 | 7.3 |
| | 250 HIGH | 249.7 | 247.6 | 11.4 | 232.6 | 269.3 | 9.8 | 215.0 | 293.7 | 8.4 | 193.8 | 314.6 | 7.1 |
| | 275 HIGH | 279.2 | 273.5 | 11.6 | 260.5 | 296.4 | 10.0 | 241.1 | 322.3 | 8.6 | 221.3 | 351.2 | 7.2 |
| | 300 HIGH | 316.0 | 307.3 | 11.7 | 295.5 | 332.6 | 10.1 | 274.3 | 361.2 | 8.7 | 252.4 | 393.2 | 7.4 |
| | 350 HIGH | 349.3 | 344.6 | 11.4 | 325.6 | 373.7 | 9.9 | 301.2 | 406.5 | 8.5 | 276.2 | 443.3 | 7.1 |
| | 375 HIGH | 386.8 | 378.8 | 11.5 | 361.3 | 410.3 | 10.0 | 335.0 | 445.9 | 8.6 | 307.9 | 485.7 | 7.3 |
| | 400 HIGH | 425.1 | 413.6 | 11.6 | 397.7 | 447.4 | 10.1 | 369.2 | 485.7 | 8.7 | 339.9 | 528.4 | 7.4 |
| 44 | 140 HIGH | 150.7 | 143.0 | 11.9 | 140.4 | 155.9 | 10.2 | 129.8 | 170.4 | 8.7 | 118.9 | 186.4 | 7.3 |
| | 155 HIGH | 163.6 | 157.9 | 11.7 | 152.4 | 171.7 | 10.1 | 140.9 | 187.2 | 8.6 | 129.1 | 204.5 | 7.2 |
| | 170 HIGH | 177.3 | 173.5 | 11.5 | 165.2 | 188.1 | 10.0 | 152.7 | 204.6 | 8.5 | 139.8 | 223.0 | 7.2 |
| | 185 HIGH | 196.1 | 190.2 | 11.7 | 183.1 | 206.1 | 10.1 | 169.7 | 224.0 | 8.7 | 155.8 | 244.1 | 7.3 |
| | 200 HIGH | 216.3 | 207.6 | 11.8 | 202.2 | 224.8 | 10.2 | 187.6 | 244.2 | 8.8 | 172.6 | 265.8 | 7.5 |
| | 250 HIGH | 258.7 | 253.1 | 11.6 | 241.1 | 275.0 | 10.0 | 222.9 | 299.6 | 8.5 | 195.6 | 310.0 | 7.2 |
| | 275 HIGH | 289.2 | 279.7 | 11.7 | 269.9 | 302.8 | 10.2 | 249.9 | 328.8 | 8.7 | 229.4 | 357.9 | 7.4 |
| | 300 HIGH | 327.2 | 314.3 | 11.8 | 306.1 | 339.9 | 10.3 | 284.2 | 368.8 | 8.8 | 261.6 | 401.0 | 7.5 |
| | 350 HIGH | 361.7 | 352.3 | 11.6 | 337.2 | 381.5 | 10.0 | 312.1 | 414.5 | 8.6 | 286.3 | 451.4 | 7.3 |
| | 375 HIGH | 400.4 | 387.3 | 11.7 | 374.1 | 419.0 | 10.2 | 347.0 | 454.9 | 8.7 | 319.0 | 495.0 | 7.4 |
| | 400 HIGH | 440.1 | 423.0 | 11.8 | 411.8 | 457.2 | 10.3 | 382.4 | 495.8 | 8.8 | 352.1 | 538.9 | 7.5 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

***Table P-6 (Continued). 50 Hz high efficiency machines in English units***

| Evaporator Leaving Water Temperature (F) | Unit Size Model RTAC | Condenser Entering Air Temperature (F) 85 Tons | 85 kW input | 85 EER | 95 Tons | 95 kW input | 95 EER | 105 Ton | 105 kW input | 105 EER | 115 Tons | 115 kW input | 115 EER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | 140 HIGH | 156.2 | 146.0 | 12.1 | 145.6 | 159.1 | 10.4 | 134.6 | 173.6 | 8.9 | 123.4 | 189.7 | 7.5 |
| | 155 HIGH | 169.5 | 161.4 | 11.9 | 158.0 | 175.2 | 10.2 | 146.1 | 190.8 | 8.7 | 133.9 | 208.2 | 7.4 |
| | 170 HIGH | 183.6 | 177.4 | 11.7 | 171.1 | 192.1 | 10.1 | 158.2 | 208.7 | 8.7 | 145.0 | 227.2 | 7.3 |
| | 185 HIGH | 203.0 | 194.4 | 11.8 | 189.6 | 210.5 | 10.3 | 175.7 | 228.6 | 8.8 | 161.5 | 248.7 | 7.5 |
| | 200 HIGH | 223.9 | 212.4 | 12.0 | 209.4 | 229.7 | 10.4 | 194.3 | 249.3 | 8.9 | 178.8 | 271.1 | 7.6 |
| | 250 HIGH | 267.8 | 258.7 | 11.8 | 249.6 | 280.8 | 10.2 | 230.9 | 305.6 | 8.7 | 197.1 | 304.7 | 7.4 |
| | 275 HIGH | 299.4 | 286.1 | 11.9 | 279.4 | 309.3 | 10.3 | 258.8 | 335.5 | 8.9 | 237.7 | 364.8 | 7.5 |
| | 300 HIGH | 338.7 | 321.6 | 12.0 | 316.8 | 347.4 | 10.4 | 294.3 | 376.5 | 9.0 | 271.0 | 409.1 | 7.6 |
| | 350 HIGH | 374.2 | 360.1 | 11.8 | 349.0 | 389.5 | 10.2 | 323.1 | 422.7 | 8.7 | 296.5 | 459.7 | 7.4 |
| | 375 HIGH | 414.1 | 396.0 | 11.9 | 387.1 | 428.0 | 10.3 | 359.1 | 464.1 | 8.9 | 330.3 | 504.5 | 7.5 |
| | 400 HIGH | 455.3 | 432.7 | 11.9 | 426.1 | 467.2 | 10.4 | 395.8 | 506.1 | 9.0 | 364.6 | 549.7 | 7.6 |
| 48 | 140 HIGH | 161.8 | 149.1 | 12.3 | 150.8 | 162.2 | 10.6 | 139.6 | 176.9 | 9.0 | 128.0 | 193.1 | 7.6 |
| | 155 HIGH | 175.4 | 164.9 | 12.0 | 163.6 | 178.8 | 10.4 | 151.3 | 194.5 | 8.9 | 138.8 | 211.9 | 7.5 |
| | 170 HIGH | 189.9 | 181.3 | 11.9 | 177.0 | 196.1 | 10.3 | 163.8 | 212.8 | 8.8 | 150.2 | 231.4 | 7.5 |
| | 185 HIGH | 210.0 | 198.8 | 12.0 | 196.1 | 214.9 | 10.4 | 181.9 | 233.2 | 8.9 | 167.2 | 253.5 | 7.6 |
| | 200 HIGH | 231.6 | 217.2 | 12.1 | 216.6 | 234.7 | 10.5 | 201.1 | 254.5 | 9.1 | 185.1 | 276.5 | 7.7 |
| | 250 HIGH | 277.1 | 264.5 | 11.9 | 258.3 | 286.8 | 10.3 | 239.1 | 311.7 | 8.8 | 198.5 | 298.8 | 7.6 |
| | 275 HIGH | 309.7 | 292.6 | 12.0 | 289.1 | 315.9 | 10.5 | 267.9 | 342.3 | 9.0 | 246.1 | 371.8 | 7.6 |
| | 300 HIGH | 350.3 | 329.0 | 12.1 | 327.8 | 355.0 | 10.6 | 304.5 | 384.4 | 9.1 | 280.5 | 417.3 | 7.8 |
| | 350 HIGH | 386.8 | 368.1 | 11.9 | 360.9 | 397.6 | 10.3 | 334.2 | 431.0 | 8.9 | 306.9 | 468.1 | 7.5 |
| | 375 HIGH | 428.1 | 404.9 | 12.0 | 400.2 | 437.1 | 10.4 | 371.5 | 473.5 | 9.0 | 341.8 | 514.2 | 7.6 |
| | 400 HIGH | 470.7 | 442.6 | 12.1 | 440.6 | 477.4 | 10.5 | 409.4 | 516.8 | 9.1 | 373.6 | 553.5 | 7.8 |
| 50 | 140 HIGH | 167.4 | 152.3 | 12.5 | 156.2 | 165.4 | 10.7 | 144.6 | 180.2 | 9.2 | 132.7 | 196.5 | 7.8 |
| | 155 HIGH | 181.4 | 168.4 | 12.2 | 169.2 | 182.5 | 10.6 | 156.7 | 198.2 | 9.0 | 143.8 | 215.7 | 7.7 |
| | 170 HIGH | 196.3 | 185.3 | 12.0 | 183.1 | 200.2 | 10.4 | 169.4 | 217.0 | 8.9 | 155.4 | 235.6 | 7.6 |
| | 185 HIGH | 217.0 | 203.2 | 12.1 | 202.8 | 219.5 | 10.5 | 188.1 | 237.9 | 9.1 | 173.0 | 258.4 | 7.7 |
| | 200 HIGH | 239.4 | 222.2 | 12.2 | 223.9 | 239.8 | 10.7 | 208.0 | 259.8 | 9.2 | 189.7 | 278.4 | 7.8 |
| | 250 HIGH | 286.5 | 270.4 | 12.1 | 267.1 | 292.9 | 10.4 | 242.3 | 309.0 | 9.0 | 199.6 | 292.2 | 7.8 |
| | 275 HIGH | 320.1 | 299.2 | 12.2 | 298.9 | 322.7 | 10.6 | 277.1 | 349.3 | 9.1 | 253.5 | 376.5 | 7.8 |
| | 300 HIGH | 362.1 | 336.6 | 12.3 | 338.8 | 362.8 | 10.7 | 314.8 | 392.5 | 9.2 | 283.2 | 411.9 | 7.9 |
| | 350 HIGH | 399.6 | 376.2 | 12.1 | 373.0 | 405.9 | 10.5 | 345.5 | 439.4 | 9.0 | 317.4 | 476.7 | 7.7 |
| | 375 HIGH | 442.3 | 414.0 | 12.1 | 413.6 | 446.5 | 10.6 | 383.9 | 483.1 | 9.1 | 343.7 | 504.4 | 7.8 |
| | 400 HIGH | 486.3 | 452.7 | 12.2 | 455.3 | 487.9 | 10.7 | 423.2 | 527.6 | 9.2 | 377.1 | 545.9 | 7.9 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F and the standard evaporator pass arrangement.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

# Performance Data

## Full Load Performance

***Table P-7. 50 Hz standard efficiency machines in SI units***

| Evaporator Leaving Water Temperature (C) | Unit Size Model RTAC | Condenser Entering Air Temperature (C) 30 kW cooling | 30 kW input | 30 COP | 35 kW cooling | 35 kW input | 35 COP | 40 kW cooling | 40 kW input | 40 COP | 45 kW cooling | 45 kW input | 45 COP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 140 STD | 477.1 | 147.3 | 3.1 | 445.8 | 159.6 | 2.7 | 413.8 | 173.2 | 2.3 | 381.1 | 188.0 | 2.0 |
| | 155 STD | 521.1 | 162.4 | 3.1 | 487.3 | 175.6 | 2.7 | 452.5 | 190.1 | 2.3 | 417.0 | 206.0 | 2.0 |
| | 170 STD | 567.5 | 178.2 | 3.0 | 530.9 | 192.2 | 2.6 | 493.7 | 207.7 | 2.3 | 455.3 | 224.8 | 2.0 |
| | 185 STD | 626.9 | 194.1 | 3.1 | 587.5 | 209.3 | 2.7 | 547.1 | 226.1 | 2.3 | 505.6 | 244.6 | 2.0 |
| | 200 STD | 690.5 | 210.9 | 3.1 | 648.0 | 227.3 | 2.7 | 604.1 | 245.4 | 2.4 | 558.7 | 265.3 | 2.0 |
| | 250 STD | 828.7 | 253.2 | 3.1 | 776.7 | 273.8 | 2.7 | 722.9 | 296.4 | 2.3 | 668.0 | 321.2 | 2.0 |
| | 275 STD | 924.0 | 285.4 | 3.1 | 865.6 | 307.5 | 2.7 | 805.9 | 332.0 | 2.3 | 744.7 | 358.9 | 2.0 |
| | 300 STD | 1048.1 | 319.5 | 3.1 | 984.1 | 343.9 | 2.7 | 917.7 | 370.9 | 2.4 | 849.8 | 400.6 | 2.0 |
| | 350 STD | 1159.2 | 361.5 | 3.1 | 1085.4 | 389.5 | 2.7 | 1009.8 | 420.6 | 2.3 | 932.4 | 454.9 | 2.0 |
| | 375 STD | 1284.0 | 395.6 | 3.1 | 1204.6 | 426.0 | 2.7 | 1122.3 | 459.7 | 2.3 | 1038.3 | 496.7 | 2.0 |
| | 400 STD | 1407.5 | 429.4 | 3.1 | 1321.7 | 462.1 | 2.7 | 1233.1 | 498.3 | 2.4 | 1142.4 | 538.0 | 2.0 |
| 7 | 140 STD | 508.1 | 153.1 | 3.2 | 475.0 | 165.6 | 2.8 | 441.3 | 179.4 | 2.4 | 404.7 | 193.1 | 2.0 |
| | 155 STD | 554.8 | 169.0 | 3.1 | 519.0 | 182.4 | 2.7 | 482.0 | 197.1 | 2.4 | 440.6 | 210.6 | 2.0 |
| | 170 STD | 603.4 | 185.5 | 3.1 | 564.7 | 199.7 | 2.7 | 524.9 | 215.4 | 2.3 | 482.4 | 231.4 | 2.0 |
| | 185 STD | 666.3 | 202.2 | 3.1 | 624.8 | 217.7 | 2.8 | 581.9 | 234.7 | 2.4 | 533.0 | 250.5 | 2.1 |
| | 200 STD | 733.8 | 219.8 | 3.2 | 688.8 | 236.5 | 2.8 | 642.4 | 255.0 | 2.4 | 583.3 | 268.4 | 2.1 |
| | 250 STD | 881.5 | 263.4 | 3.2 | 826.3 | 284.3 | 2.8 | 769.3 | 307.3 | 2.4 | 700.7 | 325.9 | 2.1 |
| | 275 STD | 981.7 | 297.3 | 3.2 | 919.8 | 319.8 | 2.8 | 856.9 | 344.6 | 2.4 | 777.7 | 363.0 | 2.1 |
| | 300 STD | 1113.5 | 333.0 | 3.2 | 1045.7 | 357.9 | 2.8 | 975.3 | 385.4 | 2.4 | 878.0 | 400.0 | 2.1 |
| | 350 STD | 1230.6 | 376.4 | 3.1 | 1152.9 | 404.8 | 2.7 | 1072.7 | 436.2 | 2.4 | 969.7 | 457.2 | 2.0 |
| | 375 STD | 1363.2 | 412.1 | 3.2 | 1278.8 | 443.0 | 2.8 | 1191.9 | 477.2 | 2.4 | 1068.2 | 492.9 | 2.1 |
| | 400 STD | 1493.6 | 447.5 | 3.2 | 1402.9 | 480.8 | 2.8 | 1309.4 | 517.7 | 2.4 | 1162.0 | 526.6 | 2.1 |
| 9 | 140 STD | 539.7 | 159.1 | 3.2 | 504.9 | 171.9 | 2.8 | 469.4 | 185.8 | 2.4 | 411.0 | 187.1 | 2.1 |
| | 155 STD | 588.9 | 175.9 | 3.2 | 551.0 | 189.4 | 2.8 | 512.3 | 204.3 | 2.4 | 448.6 | 205.1 | 2.1 |
| | 170 STD | 639.6 | 193.2 | 3.2 | 598.8 | 207.5 | 2.8 | 557.3 | 223.4 | 2.4 | 488.0 | 223.8 | 2.1 |
| | 185 STD | 706.4 | 210.6 | 3.2 | 662.4 | 226.3 | 2.8 | 617.4 | 243.7 | 2.4 | 540.4 | 243.3 | 2.1 |
| | 200 STD | 777.7 | 229.1 | 3.2 | 730.3 | 246.2 | 2.9 | 681.4 | 265.0 | 2.5 | 593.2 | 261.7 | 2.2 |
| | 250 STD | 935.3 | 274.1 | 3.3 | 876.9 | 295.3 | 2.9 | 817.1 | 318.6 | 2.5 | 711.3 | 316.4 | 2.2 |
| | 275 STD | 1040.4 | 309.8 | 3.2 | 975.3 | 332.5 | 2.8 | 908.5 | 357.7 | 2.5 | 788.3 | 352.3 | 2.2 |
| | 300 STD | 1180.3 | 347.2 | 3.3 | 1108.2 | 372.6 | 2.9 | 1034.4 | 400.6 | 2.5 | 887.1 | 386.7 | 2.2 |
| | 350 STD | 1303.4 | 391.8 | 3.2 | 1221.1 | 420.5 | 2.8 | 1137.1 | 452.3 | 2.4 | 983.8 | 443.8 | 2.1 |
| | 375 STD | 1443.3 | 429.3 | 3.2 | 1354.4 | 460.6 | 2.8 | 1263.3 | 495.4 | 2.5 | 1080.8 | 476.9 | 2.2 |
| | 400 STD | 1581.9 | 466.4 | 3.2 | 1486.2 | 500.4 | 2.9 | 1387.4 | 538.1 | 2.5 | 1179.3 | 511.6 | 2.2 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C and the standard evaporator pass arrangement.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

***Table P-8. 50 Hz high efficiency machines in SI units***

| | | Condenser Entering Air Temperature (C) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 30 | | | 35 | | | 40 | | | 45 | | |
| Evaporator Leaving Water Temperature (C) | Unit Size Model RTAC | kW cooling | kW input | COP | kW cooling | kW input | COP | kW cooling | kW input | COP | kW cooling | kW input | COP |
| 5 | 140 HIGH | 498.2 | 139.9 | 3.3 | 466.9 | 151.4 | 2.9 | 434.6 | 164.2 | 2.5 | 401.9 | 178.3 | 2.2 |
| | 155 HIGH | 541.5 | 154.2 | 3.3 | 507.4 | 166.6 | 2.9 | 472.6 | 180.3 | 2.5 | 437.0 | 195.4 | 2.1 |
| | 170 HIGH | 587.2 | 169.2 | 3.3 | 550.3 | 182.3 | 2.9 | 512.3 | 197.0 | 2.5 | 473.6 | 213.1 | 2.1 |
| | 185 HIGH | 649.8 | 185.4 | 3.3 | 610.4 | 199.7 | 2.9 | 569.9 | 215.6 | 2.5 | 528.1 | 233.1 | 2.2 |
| | 200 HIGH | 716.6 | 202.3 | 3.3 | 674.0 | 217.7 | 2.9 | 630.1 | 234.8 | 2.6 | 585.1 | 253.7 | 2.2 |
| | 250 HIGH | 856.5 | 246.9 | 3.3 | 803.1 | 266.5 | 2.9 | 748.6 | 288.3 | 2.5 | 692.3 | 312.2 | 2.1 |
| | 275 HIGH | 958.1 | 272.6 | 3.3 | 899.4 | 293.3 | 2.9 | 839.3 | 316.4 | 2.5 | 777.7 | 341.9 | 2.2 |
| | 300 HIGH | 1084.3 | 306.2 | 3.4 | 1020.7 | 329.0 | 2.9 | 954.6 | 354.5 | 2.6 | 886.7 | 382.7 | 2.2 |
| | 350 HIGH | 1199.0 | 343.6 | 3.3 | 1124.8 | 369.9 | 2.9 | 1048.8 | 399.2 | 2.5 | 971.1 | 431.6 | 2.2 |
| | 375 HIGH | 1327.6 | 377.6 | 3.3 | 1248.2 | 406.0 | 2.9 | 1166.3 | 437.7 | 2.5 | 1082.2 | 472.8 | 2.2 |
| | 400 HIGH | 1459.5 | 412.1 | 3.3 | 1374.1 | 442.6 | 2.9 | 1285.5 | 476.7 | 2.6 | 1194.4 | 514.4 | 2.2 |
| 7 | 140 HIGH | 532.0 | 145.2 | 3.5 | 498.9 | 156.9 | 3.0 | 465.2 | 169.8 | 2.6 | 430.4 | 184.1 | 2.2 |
| | 155 HIGH | 577.7 | 160.3 | 3.4 | 541.8 | 172.8 | 3.0 | 504.9 | 186.7 | 2.6 | 467.6 | 202.0 | 2.2 |
| | 170 HIGH | 625.9 | 176.0 | 3.4 | 586.8 | 189.3 | 2.9 | 547.1 | 204.1 | 2.6 | 506.3 | 220.4 | 2.2 |
| | 185 HIGH | 692.3 | 192.9 | 3.4 | 650.8 | 207.4 | 3.0 | 607.9 | 223.5 | 2.6 | 563.6 | 241.3 | 2.2 |
| | 200 HIGH | 763.7 | 210.7 | 3.4 | 718.7 | 226.3 | 3.0 | 671.9 | 243.7 | 2.6 | 624.1 | 262.9 | 2.3 |
| | 250 HIGH | 913.1 | 256.8 | 3.4 | 856.5 | 276.7 | 2.9 | 798.8 | 298.8 | 2.6 | 735.6 | 320.9 | 2.2 |
| | 275 HIGH | 1021.1 | 283.8 | 3.4 | 958.8 | 304.7 | 3.0 | 895.2 | 328.1 | 2.6 | 830.1 | 353.9 | 2.3 |
| | 300 HIGH | 1155.4 | 318.9 | 3.4 | 1087.5 | 342.1 | 3.0 | 1017.9 | 368.0 | 2.6 | 945.8 | 396.7 | 2.3 |
| | 350 HIGH | 1276.3 | 357.4 | 3.4 | 1198.3 | 383.9 | 3.0 | 1118.1 | 413.5 | 2.6 | 1035.8 | 446.2 | 2.2 |
| | 375 HIGH | 1413.1 | 392.9 | 3.4 | 1329.1 | 421.7 | 3.0 | 1242.6 | 453.9 | 2.6 | 1153.6 | 489.5 | 2.3 |
| | 400 HIGH | 1553.4 | 429.2 | 3.4 | 1463.0 | 460.2 | 3.0 | 1369.5 | 494.8 | 2.6 | 1273.1 | 533.1 | 2.3 |
| 9 | 140 HIGH | 567.1 | 150.7 | 3.6 | 532.3 | 162.5 | 3.1 | 496.5 | 175.7 | 2.7 | 459.9 | 190.0 | 2.3 |
| | 155 HIGH | 615.0 | 166.5 | 3.5 | 577.0 | 179.2 | 3.1 | 538.3 | 193.2 | 2.7 | 498.9 | 208.7 | 2.3 |
| | 170 HIGH | 665.6 | 183.1 | 3.4 | 624.4 | 196.5 | 3.0 | 582.6 | 211.5 | 2.6 | 539.4 | 227.9 | 2.3 |
| | 185 HIGH | 735.9 | 200.8 | 3.5 | 692.0 | 215.4 | 3.1 | 646.6 | 231.7 | 2.7 | 600.2 | 249.8 | 2.3 |
| | 200 HIGH | 811.8 | 219.4 | 3.5 | 764.0 | 235.2 | 3.1 | 715.2 | 252.9 | 2.7 | 664.5 | 272.5 | 2.3 |
| | 250 HIGH | 971.1 | 267.2 | 3.5 | 911.4 | 287.4 | 3.0 | 850.5 | 309.8 | 2.6 | 742.9 | 309.6 | 2.3 |
| | 275 HIGH | 1085.4 | 295.5 | 3.5 | 1020.0 | 316.6 | 3.1 | 952.8 | 340.2 | 2.7 | 883.9 | 366.3 | 2.3 |
| | 300 HIGH | 1228.1 | 332.2 | 3.5 | 1156.4 | 355.8 | 3.1 | 1082.6 | 382.1 | 2.7 | 1006.6 | 411.3 | 2.4 |
| | 350 HIGH | 1355.8 | 371.7 | 3.5 | 1273.1 | 398.5 | 3.0 | 1188.8 | 428.3 | 2.7 | 1102.3 | 461.3 | 2.3 |
| | 375 HIGH | 1500.6 | 408.8 | 3.5 | 1412.0 | 438.1 | 3.1 | 1321.0 | 470.7 | 2.7 | 1227.1 | 506.7 | 2.3 |
| | 4400 HIGH | 1650.1 | 446.9 | 3.5 | 1554.4 | 478.5 | 3.1 | 1455.6 | 513.7 | 2.7 | 1353.7 | 552.7 | 2.4 |

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C and the standard evaporator pass arrangement.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590.

# Performance Data

## Part Load Performance

*Table P-9. ARI part-load performance for 60 Hz standard efficiency machines in English units*

| Unit Size | Full Load Tons | Full Load EER | IPLV |
|---|---|---|---|
| 140 | 138.2 | 9.7 | **13.5** |
| 155 | 151.9 | 9.8 | **13.6** |
| 170 | 166.2 | 9.9 | **13.9** |
| 185 | 181.2 | 9.7 | **13.7** |
| 200 | 197.2 | 9.6 | **13.3** |
| 225 | 216.4 | 9.6 | **13.4** |
| 250 | 237.2 | 9.6 | **13.6** |
| 275 | 268.0 | 9.8 | **13.3** |
| 300 | 299.2 | 9.6 | **13.3** |
| 350 | 339.6 | 9.6 | **13.1** |
| 400 | 401.7 | 9.6 | **14.6** |
| 450 | 441.6 | 9.6 | **14.7** |
| 500 | 483.0 | 9.6 | **14.9** |

Notes:
1. IPLV values are rated in accordance with ARI Standard 550/590.
2. EER and IPLV values include compressors, condenser fans and control kW.

*Table P-10. ARI part-load performance for 60 Hz high efficiency machines in English units*

| Unit Size | Full Load Tons | Full Load EER | IPLV |
|---|---|---|---|
| 140 | 143.9 | 10.3 | **14.0** |
| 155 | 157.1 | 10.4 | **14.1** |
| 170 | 171.2 | 10.4 | **14.4** |
| 185 | 187.1 | 10.3 | **14.2** |
| 200 | 204.1 | 10.1 | **13.9** |
| 225 | 223.9 | 10.2 | **14.0** |
| 250 | 243.2 | 10.1 | **13.8** |
| 275 | 277.1 | 10.5 | **13.7** |
| 300 | 308.8 | 10.2 | **13.6** |
| 350 | 349.7 | 10.5 | **15.3** |
| 400 | 415.5 | 10.1 | **14.5** |

*Table P-11. ARI part-load performance for 50 Hz standard efficiency machines in English units*

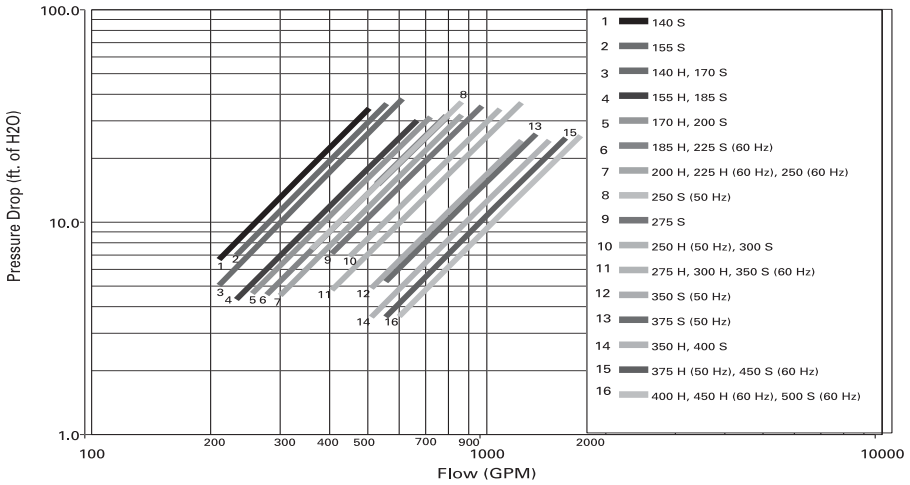
| Unit Size | Full Load Tons | Full Load EER | IPLV |
|---|---|---|---|
| 140 | 133.7 | 9.3 | **14.2** |
| 155 | 146.0 | 9.2 | **14.1** |
| 170 | 159.0 | 9.2 | **13.9** |
| 185 | 175.9 | 9.3 | **13.8** |
| 200 | 193.9 | 9.5 | **14.2** |
| 250 | 232.6 | 9.5 | **14.3** |
| 275 | 259.0 | 9.4 | **14.4** |
| 300 | 294.4 | 9.5 | **14.0** |
| 350 | 324.6 | 9.3 | **15.9** |
| 375 | 360.1 | 9.4 | **16.0** |
| 400 | 395.1 | 9.5 | **16.1** |

Notes:
1. IPLV values are rated in accordance with ARI Standard 550/590.
2. EER and IPLV values include compressors, condenser fans and control kW.

*Table P-12. ARI part-load performance for 50 Hz high efficiency machines in English units*

| Unit Size | Full Load Tons | Full Load EER | IPLV |
|---|---|---|---|
| 140 | 140.4 | 10.2 | **15.0** |
| 155 | 152.4 | 10.1 | **14.9** |
| 170 | 165.2 | 14.7 | **14.7** |
| 185 | 183.1 | 10.1 | **14.6** |
| 200 | 202.2 | 10.2 | **14.9** |
| 250 | 241.1 | 10.0 | **14.3** |
| 275 | 269.9 | 10.2 | **14.9** |
| 300 | 306.1 | 10.3 | **14.5** |
| 350 | 337.2 | 10.0 | **16.1** |
| 375 | 374.1 | 10.1 | **16.1** |
| 400 | 411.8 | 10.2 | **16.2** |

*Figure P-1. Evaporator water pressure drop, 2 compressor units, 2 pass evaporator*



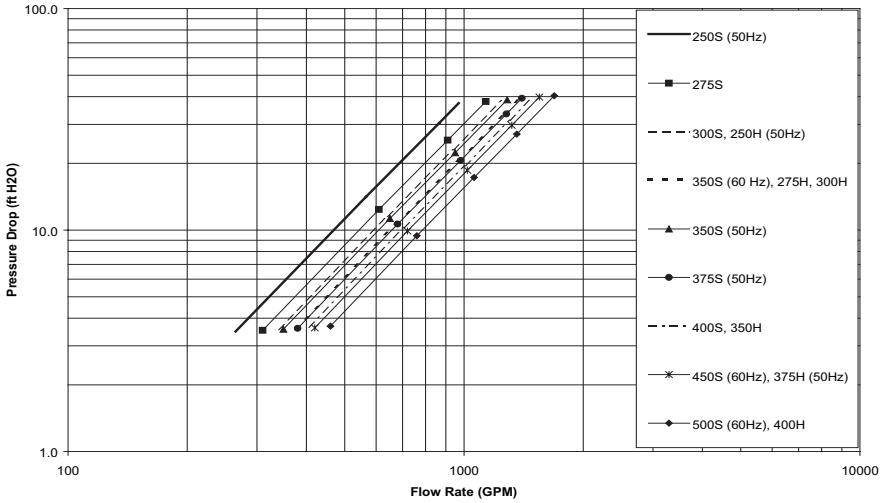
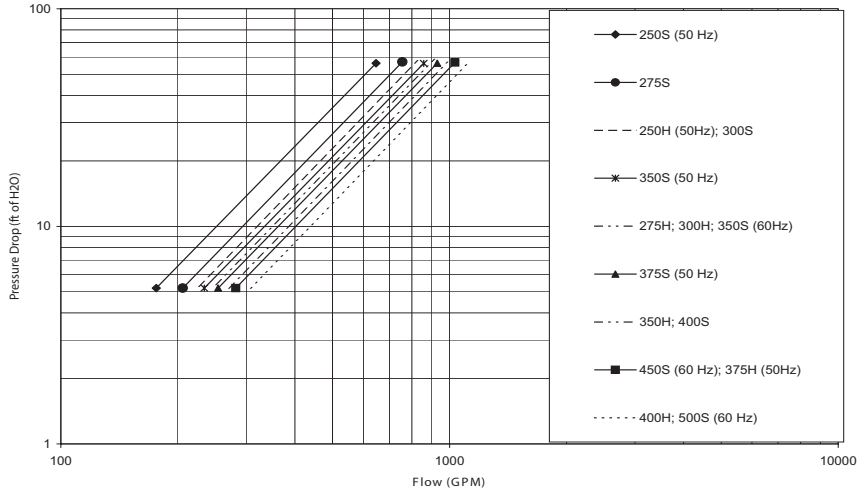




*Figure P-2. Evaporator water pressure drop, 3 and 4 compressor units, 2 pass evaporator*

*Figure P-3. Evaporator water pressure drop, 3 and 4 compressor units, 3 pass evaporator*



# Electrical Data and Connection

***Table E-1. Unit electrical data for standard efficiency at all ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | Compressor (Each) | | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 660 | 800 | 800 | 2 | 270-270 | NA | 487-487 | 8 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 364/364 | 600/600 | 450/450 | 2 | 270/270 | NA | 487/487 | 4/4 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 581 | 800 | 700 | 2 | 235-235 | NA | 427-427 | 8 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 320/320 | 500/500 | 400/400 | 2 | 235/235 | NA | 427/427 | 4/4 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 348 | 450 | 400 | 2 | 142-142 | 801-801 | 260-260 | 8 | 1.5 | 3.5 | 0.83 |
| 140 | 380/60/3 | 2 | 192/192 | 300/300 | 250/250 | 2 | 142/142 | 801/801 | 260/260 | 4/4 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 288 | 400 | 350 | 2 | 118-118 | 652-652 | 212-212 | 8 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 159/159 | 250/250 | 200/200 | 2 | 118/118 | 652/652 | 212/212 | 4/4 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 230 | 300 | 300 | 2 | 94-94 | 520-520 | 172-172 | 8 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 127/127 | 200/200 | 175/175 | 2 | 94/94 | 520/520 | 172/172 | 4/4 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 333 | 450 | 400 | 2 | 138-138 | 774-774 | 259-259 | 8 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 184/184 | 300/300 | 250/250 | 2 | 138/138 | 774/774 | 259/259 | 4/4 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 730 | 1000 | 1000 | 2 | 320-270 | NA | 600-701 | 9 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 433/364 | 700/600 | 600/450 | 2 | 320/270 | NA | 600/701 | 5/4 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 641 | 800 | 800 | 2 | 278-235 | NA | 506-571 | 9 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 380/320 | 600/500 | 450/400 | 2 | 278/235 | NA | 506/571 | 5/4 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 380 | 500 | 450 | 2 | 168-142 | 973-801 | 316-260 | 9 | 1.5 | 3.5 | 0.83 |
| 155 | 380/60/3 | 2 | 228/192 | 350/300 | 300/250 | 2 | 168/142 | 973/801 | 316/260 | 5/4 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 317 | 450 | 400 | 2 | 139-118 | 774-652 | 252-212 | 9 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 188/159 | 300/250 | 225/200 | 2 | 139/118 | 774/652 | 252/212 | 5/4 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 254 | 350 | 300 | 2 | 111-94 | 631-528 | 205-172 | 9 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 150/127 | 250/200 | 200/175 | 2 | 111/94 | 631/528 | 205/172 | 5/4 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 373 | 500 | 450 | 2 | 168-138 | 896-796 | 291-259 | 9 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 224/184 | 350/300 | 300/250 | 2 | 168/138 | 896/796 | 291/259 | 5/4 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 785 | 1000 | 1000 | 2 | 320-320 | NA | 600-600 | 10 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 433/433 | 700/700 | 600/600 | 2 | 320/320 | NA | 600/600 | 5/5 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 691 | 800 | 800 | 2 | 278-278 | NA | 506-506 | 10 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 380/380 | 600/600 | 450/450 | 2 | 278/278 | NA | 506/506 | 5/5 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 413 | 500 | 500 | 2 | 168-168 | 973-973 | 316-316 | 10 | 1.5 | 3.5 | 0.83 |
| 170 | 380/60/3 | 2 | 228/228 | 350/350 | 300/300 | 2 | 168/168 | 973/973 | 316/316 | 5/5 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 341 | 450 | 400 | 2 | 139-139 | 774-774 | 252-252 | 10 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 188/188 | 300/300 | 225/225 | 2 | 139/139 | 774/774 | 252/252 | 5/5 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 273 | 350 | 350 | 2 | 111-111 | 631-631 | 205-205 | 10 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 150/150 | 250/250 | 200/200 | 2 | 111/111 | 631/631 | 205/205 | 5/5 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 406 | 500 | 450 | 2 | 168-168 | 896-896 | 291-291 | 10 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 224/224 | 350/350 | 300/300 | 2 | 168/168 | 896/896 | 291/291 | 5/5 | 0.8 | 2.8 | 0.83 |

# Electrical Data and Connection

***Table E-1 (Continued). Unit electrical data for standard efficiency at all ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 874 | 1200 | 1000 | 2 | 386-320 | NA | 701-600 | 11 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 522/433 | 800/700 | 700/600 | 2 | 386/320 | NA | 701/600 | 6/5 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 770 | 1000 | 1000 | 2 | 336-278 | NA | 571-506 | 11 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 459/380 | 700/600 | 600/450 | 2 | 336/278 | NA | 571/506 | 6/5 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 460 | 600 | 600 | 2 | 203-168 | 1060-973 | 345-316 | 11 | 1.5 | 3.5 | 0.83 |
| 185 | 380/60/3 | 2 | 275/228 | 450/350 | 350/300 | 2 | 203/168 | 1060/973 | 345/316 | 6/5 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 380 | 500 | 450 | 2 | 168-139 | 878-774 | 285-252 | 11 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 227/188 | 350/300 | 300/225 | 2 | 168/139 | 878/774 | 285/252 | 6/5 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 304 | 400 | 350 | 2 | 134-111 | 705-631 | 229-205 | 11 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 181/150 | 300/250 | 225/200 | 2 | 134/111 | 705/631 | 229/205 | 6/5 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 446 | 600 | 500 | 2 | 198-168 | 1089-896 | 354-291 | 11 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 264/224 | 450/350 | 350/300 | 2 | 198/168 | 1089/896 | 354/291 | 6/5 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 947 | 1200 | 1200 | 2 | 386-386 | NA | 701-701 | 12 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 522/522 | 800/800 | 700/700 | 2 | 386/386 | NA | 701/701 | 6/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 834 | 1000 | 1000 | 2 | 336-336 | NA | 571-571 | 12 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 459/459 | 700/700 | 600/600 | 2 | 336/336 | NA | 571/571 | 6/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 499 | 700 | 600 | 2 | 203-203 | 1060-1060 | 345-345 | 12 | 1.5 | 3.5 | 0.83 |
| 200 | 380/60/3 | 2 | 275/275 | 450/450 | 350/350 | 2 | 203/203 | 1060/1060 | 345/345 | 6/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 412 | 500 | 500 | 2 | 168-168 | 878-878 | 285-285 | 12 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 227/227 | 350/350 | 300/300 | 2 | 168/168 | 878/878 | 285/285 | 6/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 329 | 450 | 400 | 2 | 134-134 | 705-705 | 229-229 | 12 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 181/181 | 300/300 | 225/225 | 2 | 134/134 | 705/705 | 229/229 | 6/6 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 479 | 600 | 600 | 2 | 198-198 | 1089-1089 | 354-354 | 12 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 264/264 | 450/450 | 350/350 | 2 | 198/198 | 1089/1089 | 354/354 | 6/6 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 1045 | 1200 | 1200 | 2 | 459-386 | NA | 821-701 | 13 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 620/522 | 1000/800 | 800/700 | 2 | 459/386 | NA | 821/701 | 7/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 920 | 1200 | 1200 | 2 | 399-336 | NA | 691-571 | 13 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 545/459 | 800/700 | 700/600 | 2 | 399/336 | NA | 691/571 | 7/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 551 | 700 | 700 | 2 | 242-203 | 1306-1060 | 424-345 | 13 | 1.5 | 3.5 | 0.83 |
| 225 | 380/60/3 | 2 | 327/275 | 500/450 | 400/350 | 2 | 242/203 | 1306/1060 | 424/345 | 7/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 454 | 600 | 600 | 2 | 200-168 | 1065-878 | 346-285 | 13 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 270/227 | 450/350 | 350/300 | 2 | 200/168 | 1065/878 | 346/285 | 7/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 364 | 500 | 450 | 2 | 160-134 | 853-705 | 277-229 | 13 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 216/181 | 350/300 | 300/225 | 2 | 160/134 | 853/705 | 277/229 | 7/6 | 1.5 | 2.3 | 0.83 |
| | 200/60/3 | 1 | 1124 | 1200 | 1200 | 2 | 459-459 | NA | 821-821 | 14 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 620/620 | 1000/1000 | 800/800 | 2 | 459/459 | NA | 821/821 | 7/7 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 989 | 1200 | 1200 | 2 | 399-399 | NA | 691-691 | 14 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 545/545 | 800/800 | 700/700 | 2 | 399/399 | NA | 691/691 | 7/7 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 594 | 800 | 700 | 2 | 242-242 | 1306-1306 | 424-424 | 14 | 1.5 | 3.5 | 0.83 |
| 250 | 380/60/3 | 2 | 327/327 | 500/500 | 400/400 | 2 | 242/242 | 1306/1306 | 424/424 | 7/7 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 489 | 600 | 600 | 2 | 200-200 | 1065-1065 | 346-346 | 14 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 270/270 | 450/450 | 350/350 | 2 | 200/200 | 1065/1065 | 346/346 | 7/7 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 392 | 500 | 500 | 2 | 160-160 | 853-853 | 277-277 | 14 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 216/216 | 350/350 | 300/300 | 2 | 160/160 | 853/853 | 277/277 | 7/7 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 563 | 700 | 700 | 3 | 138-138-198 | 796-796-1089 | 259-259-354 | 14 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 333/265 | 450/450 | 400/350 | 3 | 138-138/198 | 796-796/1089 | 259-259/354 | 8/6 | 0.8 | 2.8 | 1.2 |

# Electrical Data and Connection

***Table E-1 (Continued). Unit electrical data for standard efficiency at all ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt | 2kW | FLA | kW (7) |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 785/522 | 1000/800 | 1000/700 | 3 | 320-320/386 | NA | 600-600/701 | 10/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 681/459 | 800/700 | 800/600 | 3 | 278-278/336 | NA | 506-506/571 | 10/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 275 | 380/60/3 | 2 | 413/275 | 500/450 | 500/350 | 3 | 168-168/203 | 973-973/1060 | 316-316/345 | 10/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 533 | 700 | 600 | 3 | 139-139-168 | 774-774-878 | 252-252-285 | 16 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 341/227 | 450/350 | 400/300 | 3 | 139-139/168 | 774-774/878 | 252-252/285 | 10/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 427 | 500 | 500 | 3 | 111-111-134 | 631-631-705 | 205-205-229 | 16 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 273/182 | 350/300 | 350/225 | 3 | 111-111/134 | 631-631/705 | 205-205/229 | 10/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 629 | 800 | 700 | 3 | 168-168-198 | 896-896-1089 | 291-291-354 | 16 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 406/265 | 500/450 | 450/350 | 3 | 168-168/198 | 896-896/1089 | 291-291/254 | 10/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 947/522 | 1200/800 | 1200/700 | 3 | 386-386/386 | NA | 701-701/701 | 12/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 834/459 | 1000/700 | 1000/600 | 3 | 336-336/336 | NA | 571-571/571 | 12/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 300 | 380/60/3 | 2 | 499/275 | 700/450 | 600/350 | 3 | 203-203/203 | 1060-1060/1060 | 345-345/345 | 12/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 597 | 700 | 700 | 3 | 168-168-168 | 878-878-878 | 285-285-285 | 18 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 412/227 | 500/350 | 500/300 | 3 | 168-168/168 | 878-878/878 | 285-285/285 | 12/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 477 | 600 | 600 | 3 | 134-134-134 | 705-705-705 | 229-229-229 | 18 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 330/182 | 450/300 | 400/225 | 3 | 134-134/134 | 705-705/705 | 229-229/229 | 12/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 694 | 800 | 800 | 3 | 198-198-198 | 1089-1089-1089 | 354-354-354 | 18 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 480/265 | 600/450 | 600/350 | 3 | 198-198/198 | 1089-1089/1089 | 354-354/354 | 12/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 1124/522 | 1200/800 | 1200/700 | 3 | 459-459/386 | NA | 821-821/701 | 14/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 989/459 | 1200/700 | 1200/600 | 3 | 399-399/336 | NA | 691-691/571 | 14/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 350 | 380/60/3 | 2 | 594/275 | 800/450 | 700/350 | 3 | 242-242/203 | 1306-1306/1060 | 424-424/345 | 14/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 674 | 800 | 800 | 3 | 200-200-168 | 1065-1065-973 | 346-346-285 | 20 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 490/227 | 600/350 | 600/300 | 3 | 200-200/168 | 1065-1065/973 | 346-346/285 | 14/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 540 | 700 | 600 | 3 | 160-160-134 | 853-853-705 | 277-277-229 | 20 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 393/182 | 500/300 | 450/225 | 3 | 160-160/134 | 853-853/705 | 277-277/229 | 14/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 770 | 800 | 800 | 4 | 168-168-168-168 | 896-896-896-896 | 291-291-291-291 | 20 | 0.8 | 2.8 | 1.59 |
| | 400/50/3 | 2 | 406/406 | 500/500 | 450/450 | 4 | 168-168/168-168 | 896-896/896-896 | 291-291/291-291 | 10/10 | 0.8 | 2.8 | 1.59 |
| RTAC | 400/50/3 | 1 | 844 | 1000 | 1000 | 4 | 198-198-168-168 | 1089-1089-896-896 | 354-354-291-291 | 22 | 0.8 | 2.8 | 1.59 |
| 375 | 400/50/3 | 2 | 480/406 | 600/500 | 600/450 | 4 | 198-198/168-168 | 1089-1089/896-896 | 354-354/291-291 | 12/10 | 0.8 | 2.8 | 1.59 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 947/947 | 1200/1200 | 1200/1200 | 4 | 386-386/386-386 | NA | 701-701/701-701 | 12/12 | 1.5 | 6.5 | 1.59 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 834/834 | 1000/1000 | 1000/1000 | 4 | 336-336/336-336 | NA | 571-571/571-571 | 12/12 | 1.5 | 6.5 | 1.59 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 400 | 380/60/3 | 2 | 499/499 | 700/700 | 600/600 | 4 | 203-203/203-203 | 1060-1060/1060-1060 | 345-345/345-345 | 12/12 | 1.5 | 3.5 | 1.59 |
| | 460/60/3 | 1 | 782 | 800 | 800 | 4 | 168-168-168-168 | 878-878-878-878 | 285-285-285-285 | 24 | 1.5 | 2.8 | 1.59 |
| | 460/60/3 | 2 | 412/412 | 500/500 | 500/500 | 4 | 168-168/168-168 | 878-878/878-878 | 285-285/285-285 | 12/12 | 1.5 | 2.8 | 1.59 |
| | 575/60/3 | 1 | 628 | 700 | 700 | 4 | 134-134-134-134 | 705-705-705-705 | 229-229-229-229 | 24 | 1.5 | 2.3 | 1.59 |
| | 575/60/3 | 2 | 330/330 | 450/450 | 400/400 | 4 | 134-134/134-134 | 705-705/705-705 | 229-229/229-229 | 12/12 | 1.5 | 2.3 | 1.59 |
| | 400/50/3 | 1 | 909 | 1000 | 1000 | 4 | 198-198-198-198 | 1089-1089-1089-1089 | 354-354-354-354 | 24 | 0.8 | 2.8 | 1.59 |
| | 400/50/3 | 2 | 480/480 | 600/600 | 600/600 | 4 | 198-198/198-198 | 1089-1089/1089-1089 | 354-354/354-354 | 12/12 | 0.8 | 2.8 | 1.59 |

# Electrical Data and Connection

***Table E-1 (Continued). Unit electrical data for standard efficiency at all ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW FLA | kW (7) |
| | 200/60/3 | 1 | NA | | | | | | | | | |
| | 200/60/3 | 2 | 1124/947 | 1200/1200 | 1200/1200 | 4 | 459-459/386-386 | NA | 821-821/701-701 | 14/12 | 1.5 6.5 | 1.59 |
| | 230/60/3 | 1 | NA | | | | | | | | | |
| | 230/60/3 | 2 | 989/834 | 1200/1000 | 1200/1000 | 4 | 399-399/336-336 | NA | 691-691/571-571 | 14/12 | 1.5 6.5 | 1.59 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | |
| 450 | 380/60/3 | 2 | 594/499 | 800/700 | 700/600 | 4 | 242-242/203-203 | 1306-1306/1060-1060 | 424-424/345-345 | 14/12 | 1.5 3.5 | 1.59 |
| | 460/60/3 | 1 | 859 | 1000 | 1000 | 4 | 200-200-168-168 | 1065-1065-878-878 | 346-346-285-285 | 26 | 1.5 2.8 | 1.59 |
| | 460/60/3 | 2 | 490/412 | 600/500 | 600/500 | 4 | 200-200/168-168 | 1065-1065/878-878 | 346-346/285-285 | 14/12 | 1.5 2.8 | 1.59 |
| | 575/60/3 | 1 | 688 | 800 | 800 | 4 | 160-160-134-134 | 853-853-705-705 | 277-277-229-229 | 26 | 1.5 2.3 | 1.59 |
| | 575/60/3 | 2 | 393/330 | 500/450 | 450/400 | 4 | 160-160/134-134 | 853-853/705-705 | 277-277/229-229 | 14/12 | 1.5 2.3 | 1.59 |
| | 200/60/3 | 1 | NA | | | | | | | | | |
| | 200/60/3 | 2 | 1124/1124 | 1200/1200 | 1200/1200 | 4 | 459-459/459-459 | NA | 821-821/821-821 | 14/14 | 1.5 6.5 | 1.59 |
| | 230/60/3 | 1 | NA | | | | | | | | | |
| | 230/60/3 | 2 | 989/989 | 1200/1200 | 1200/1200 | 4 | 399-399/399-399 | NA | 691-691/691-691 | 14/14 | 1.5 6.5 | 1.59 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | |
| 500 | 380/60/3 | 2 | 594/594 | 800/800 | 700/700 | 4 | 242-242/242-242 | 1306-1306/1306-1306 | 424-424/424-424 | 14/14 | 1.5 3.5 | 1.59 |
| | 460/60/3 | 1 | 929 | 1000 | 1000 | 4 | 200-200-200-200 | 1065-1065-1065-1065 | 346-346-346-346 | 28 | 1.5 2.8 | 1.59 |
| | 460/60/3 | 2 | 490/490 | 600/600 | 600/600 | 4 | 200-200/200-200 | 1065-1065/1065-1065 | 346-346/346-346 | 14/14 | 1.5 2.8 | 1.59 |
| | 575/60/3 | 1 | 745 | 800 | 800 | 4 | 160-160-160-160 | 853-853-853-853 | 277-277-277-277 | 28 | 1.5 2.3 | 1.59 |
| | 575/60/3 | 2 | 393/393 | 500/500 | 450/450 | 4 | 160-160/160-160 | 853-853/853-853 | 277-277/277-277 | 14/14 | 1.5 2.3 | 1.59 |

Notes:

1. As standard, all units have single point power connection. Optional dual point power connections are available.
2. Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
3. MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
4. RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
5. RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
6. Local codes may take precedence.
7. Control kW includes operational controls only. Does not include evaporator heaters.
8. XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
9. VOLTAGE UTILIZATION RANGE:

| Rated Voltage | Utilization Range |
|---|---|
| 200/60/3 | 180-220 |
| 230/60/3 | 208-254 |
| 380/60/3 | 342-418 |
| 460/60/3 | 414-506 |
| 575/60/3 | 516-633 |
| 400/50/3 | 360-440 |

10. A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
11. If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).

# Electrical Data and Connection

***Table E-2. Unit electrical data for high efficiency at standard ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 648 | 800 | 800 | 2 | 259-259 | NA | 487-487 | 10 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 356/356 | 600/600 | 450/450 | 2 | 259/259 | NA | 487/487 | 5/5 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 572 | 700 | 700 | 2 | 225-225 | NA | 427-427 | 10 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 314/314 | 500/500 | 400/400 | 2 | 225/225 | NA | 427/427 | 5/5 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 341 | 450 | 400 | 2 | 136-136 | 801-801 | 260-260 | 10 | 1.5 | 3.5 | 0.83 |
| 140 | 380/60/3 | 2 | 188/188 | 300/300 | 225/225 | 2 | 136/136 | 801/801 | 260/260 | 5/5 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 282 | 350 | 350 | 2 | 113-113 | 652-652 | 212-212 | 10 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 155/155 | 250/250 | 200/200 | 2 | 113/113 | 652/652 | 212/212 | 5/5 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 226 | 300 | 250 | 2 | 90-90 | 520-520 | 172-172 | 10 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 124/124 | 200/200 | 150/150 | 2 | 90/90 | 520/520 | 172/172 | 5/5 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 325 | 450 | 400 | 2 | 132-132 | 774-774 | 259-259 | 10 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 179/179 | 300/300 | 225/225 | 2 | 132/132 | 774/774 | 259/259 | 5/5 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 712 | 1000 | 800 | 2 | 305-259 | NA | 600-487 | 11 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 421/356 | 700/600 | 500/450 | 2 | 305/259 | NA | 600/487 | 6/5 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 628 | 800 | 700 | 2 | 265-225 | NA | 506-427 | 11 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 371/314 | 600/500 | 450/400 | 2 | 265/225 | NA | 506/427 | 6/5 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 376 | 500 | 416 | 2 | 161-136 | 973-801 | 316-260 | 11 | 1.5 | 3.5 | 0.83 |
| 155 | 380/60/3 | 2 | 222/188 | 350/300 | 300/225 | 2 | 161/136 | 973/801 | 316/260 | 6/5 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 310 | 400 | 350 | 2 | 133-113 | 774-652 | 252-212 | 11 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 183/155 | 300/250 | 225/200 | 2 | 133/113 | 774/652 | 252/212 | 6/5 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 248 | 350 | 300 | 2 | 106-90 | 631-528 | 205-172 | 11 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 146/124 | 250/200 | 175/150 | 2 | 106/90 | 631/528 | 205/172 | 6/5 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 363 | 500 | 450 | 2 | 160-132 | 896-796 | 291-259 | 11 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 217/179 | 350/300 | 300/225 | 2 | 160/132 | 896/796 | 291/259 | 6/5 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 765 | 1000 | 1000 | 2 | 305-305 | NA | 600-600 | 12 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 421/421 | 700/700 | 500/500 | 2 | 305/305 | NA | 600/600 | 6/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 675 | 800 | 800 | 2 | 265-265 | NA | 506-506 | 12 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 371/371 | 600/600 | 450/450 | 2 | 265/265 | NA | 506/506 | 6/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 404 | 500 | 450 | 2 | 161-161 | 973-973 | 316-316 | 12 | 1.5 | 3.5 | 0.83 |
| 170 | 380/60/3 | 2 | 222/222 | 350/350 | 300/300 | 2 | 161/161 | 973/973 | 316/316 | 6/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 333 | 450 | 400 | 2 | 133-133 | 774-774 | 252-252 | 12 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 183/183 | 300/300 | 225/225 | 2 | 133/133 | 774/774 | 252/252 | 6/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 266 | 350 | 300 | 2 | 106-106 | 631-631 | 205-205 | 12 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 146/146 | 250/250 | 175/175 | 2 | 106/106 | 631/631 | 205/205 | 6/6 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 394 | 500 | 450 | 2 | 160-160 | 896-896 | 291-291 | 12 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 217/217 | 350/350 | 300/300 | 2 | 160/160 | 896/896 | 291/291 | 6/6 | 0.8 | 2.8 | 0.83 |

# Electrical Data and Connection

***Table E-2 (Continued). Unit electrical data for high efficiency at standard ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 856 | 1200 | 1000 | 2 | 373-305 | NA | 701-600 | 13 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 512/421 | 800/700 | 700/500 | 2 | 373/305 | NA | 701/600 | 7/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 755 | 1000 | 1000 | 2 | 324-265 | NA | 571-506 | 13 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 451/371 | 700/600 | 600/450 | 2 | 324/265 | NA | 571/506 | 7/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 452 | 600 | 500 | 2 | 196-161 | 1060-973 | 345-316 | 13 | 1.5 | 3.5 | 0.83 |
| 185 | 380/60/3 | 2 | 270/222 | 450/350 | 350/300 | 2 | 196/161 | 1060/973 | 345/316 | 7/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 372 | 500 | 450 | 2 | 162-133 | 878-774 | 285-252 | 13 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 222/183 | 350/300 | 300/225 | 2 | 162/133 | 878/774 | 285/252 | 7/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 298 | 400 | 350 | 2 | 130-106 | 705-631 | 229-205 | 13 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 179/146 | 300/250 | 225/175 | 2 | 130/106 | 705/631 | 229/205 | 7/6 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 433 | 600 | 500 | 2 | 189-160 | 1089-896 | 354-291 | 13 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 256/217 | 400/350 | 350/300 | 2 | 189/160 | 1089/896 | 354/291 | 7/6 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 931 | 1200 | 1200 | 2 | 373-373 | NA | 701-701 | 14 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 512/512 | 800/800 | 700/700 | 2 | 373/373 | NA | 701/701 | 7/7 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 820 | 1000 | 1000 | 2 | 324-324 | NA | 571-571 | 14 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 451/451 | 700/700 | 600/600 | 2 | 324/324 | NA | 571/571 | 7/7 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 490 | 600 | 600 | 2 | 196-196 | 1060-1060 | 345-345 | 14 | 1.5 | 3.5 | 0.83 |
| 200 | 380/60/3 | 2 | 270/270 | 450/450 | 350/350 | 2 | 196/196 | 1060/1060 | 345/345 | 7/7 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 404 | 500 | 450 | 2 | 162-162 | 878-878 | 285-285 | 14 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 222/222 | 350/350 | 300/300 | 2 | 162/162 | 878/878 | 285/285 | 7/7 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 325 | 450 | 400 | 2 | 130-130 | 705-705 | 229-229 | 14 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 179/179 | 300/300 | 225/225 | 2 | 130/130 | 705/705 | 229/229 | 7/7 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 464 | 600 | 600 | 2 | 189-189 | 1089-1089 | 354-354 | 14 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 256/256 | 400/400 | 350/350 | 2 | 189/189 | 1089/1089 | 354/354 | 7/7 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 1023 | 1200 | 1200 | 2 | 447-373 | NA | 821-701 | 14 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 611/506 | 1000/800 | 800/600 | 2 | 447/373 | NA | 821/701 | 8/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 900 | 1200 | 1000 | 2 | 388-224 | NA | 691-571 | 14 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 537/544 | 800/700 | 700/600 | 2 | 388/324 | NA | 691/571 | 8/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 539 | 700 | 600 | 2 | 235-196 | 1306-1060 | 424-345 | 14 | 1.5 | 3.5 | 0.83 |
| 225 | 380/60/3 | 2 | 322/266 | 500/450 | 400/350 | 2 | 235/196 | 1306/1060 | 424/345 | 8/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 444 | 600 | 500 | 2 | 194-162 | 1065-878 | 346-285 | 14 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 265/220 | 450/350 | 350/300 | 2 | 194/162 | 1065/878 | 346/285 | 8/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 356 | 500 | 400 | 2 | 155-130 | 853-705 | 277-229 | 14 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 213/177 | 350/300 | 300/225 | 2 | 155/130 | 853/705 | 277/229 | 8/6 | 1.5 | 2.3 | 0.83 |

# Electrical Data and Connection

***Table E-2 (Continued). Unit electrical data for high efficiency at standard ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 1110 | 1200 | 1200 | 2 | 447-447 | NA | 821-821 | 16 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 611/611 | 1000/1000 | 800/800 | 2 | 447/447 | NA | 821/821 | 8/8 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 977 | 1200 | 1200 | 2 | 388-388 | NA | 691-691 | 16 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 537/537 | 800/800 | 700/700 | 2 | 388/388 | NA | 691/691 | 8/8 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 585 | 800 | 700 | 2 | 235-235 | 1306-1306 | 424-424 | 16 | 1.5 | 3.5 | 0.83 |
| 250 | 380/60/3 | 2 | 322/322 | 500/500 | 400/400 | 2 | 235/235 | 1306/1306 | 424/424 | 8/8 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 482 | 600 | 600 | 2 | 194/-194 | 1065-1065 | 346-346 | 16 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 265/265 | 450/450 | 350/350 | 2 | 194/194 | 1065/1065 | 346/346 | 8/8 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 386 | 500 | 450 | 2 | 155-155 | 853-853 | 277-277 | 794 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 213/213 | 350/350 | 300/300 | 2 | 155/155 | 853/853 | 277/277 | 8/8 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 546 | 700 | 600 | 3 | 132-132-189 | 796-796-1089 | 259-259-354 | 16 | 0.8 | 2.8 | 0.75 |
| | 400/50/3 | 2 | 325/254 | 450/400 | 400/350 | 3 | 132-132/189 | 796-796/1089 | 259-259/354 | 10/6 | 0.8 | 2.8 | 0.75 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 765/506 | 1000/800 | 1000/600 | 3 | 305-305/373 | NA | 600-600/701 | 12/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 675/444 | 800/700 | 800/600 | 3 | 265-265/324 | NA | 506-506/571 | 12/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 275 | 380/60/3 | 2 | 405/266 | 500/450 | 450/350 | 3 | 161-161/196 | 973-973/1060 | 316-316/345 | 12/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 519 | 600 | 600 | 3 | 133-133-162 | 774-774-878 | 252-252-285 | 18 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 333/220 | 450/350 | 400/300 | 3 | 133-133/162 | 774-774/878 | 252-252/285 | 12/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 416 | 500 | 450 | 3 | 106-106-130 | 631-631-705 | 205-205-229 | 18 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 267/177 | 350/300 | 300/225 | 3 | 106-106/130 | 631-631/705 | 205-205/229 | 12/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 607 | 700 | 700 | 3 | 160-160-189 | 896-896-1089 | 291-291-354 | 18 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 394/254 | 500/400 | 450/350 | 3 | 160-160/189 | 896-896/1089 | 291-291/254 | 12/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 931/506 | 1200/800 | 1200/600 | 3 | 373-373/373 | NA | 701-701/701 | 14/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 820/444 | 1000/700 | 1000/600 | 3 | 324-324/324 | NA | 571-571/571 | 14/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 300 | 380/60/3 | 2 | 490/266 | 600/450 | 600/350 | 3 | 196-196/196 | 1060-1060/1060 | 345-345/345 | 14/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 583 | 700 | 700 | 3 | 162-162-162 | 878-878-878 | 285-285-285 | 20 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 404/220 | 500/350 | 450/300 | 3 | 162-162/162 | 878-878/878 | 285-285/285 | 14/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 469 | 500 | 500 | 3 | 130-130-130 | 705-705-705 | 229-229-229 | 20 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 325/177 | 450/300 | 400/225 | 3 | 130-130/130 | 705-705/705 | 229-229/229 | 14/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 671 | 800 | 800 | 3 | 189-189-189 | 1089-1089-1089 | 354-354-354 | 20 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 465/254 | 600/400 | 600/350 | 3 | 189-189/189 | 1089-1089/1089 | 354-354/354 | 14/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 765/765 | 1000/1000 | 1000/1000 | 4 | 305-305/305-305 | NA | 600-600/600-600 | 12/12 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 675/675 | 800/800 | 800800 | 4 | 265-265/265-265 | NA | 506-506/506-506 | 12/12 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 350 | 380/60/3 | 2 | 405/405 | 500/500 | 450/450 | 4 | 161-161/161-161 | 973-973/973-973 | 316-316/316-316 | 12/12 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 633 | 700 | 700 | 4 | 133-133-133-133 | 774-774-774-774 | 252-252-252-252 | 24 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 333/333 | 450/450 | 400/400 | 4 | 133-133/133-133 | 774-774/774-774 | 252-252/252-252 | 12/12 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 506 | 600 | 600 | 4 | 106-106-106-106 | 631-631-631-631 | 205-205-205-205 | 24 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 267/267 | 350/350 | 300/300 | 4 | 106-106/106-106 | 631-631/631-631 | 205-205/205-205 | 12/12 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 748 | 800 | 800 | 4 | 160-160-160-160 | 896-896-896-896 | 291-291-291-291 | 24 | 0.8 | 2.8 | 1.59 |
| | 400/50/3 | 2 | 394/394 | 500/500 | 450/450 | 4 | 160-160/160-160 | 896-896/896-896 | 291-291/291-291 | 12/12 | 0.8 | 2.8 | 1.59 |

# Electrical Data and Connection

***Table E-2 (Continued). Unit electrical data for high efficiency at standard ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| RTAC | 400/50/3 | 1 | 819 | 1000 | 1000 | 4 | 189-189-160-160 | 1089-1089-896-896 | 354-354-291-291 | 2/6 | 0.8 | 2.8 | 1.59 |
| 375 | 400/50/3 | 2 | 465/394 | 600/500 | 600/450 | 4 | 189-189/160-160 | 1089-1089/896-896 | 254-254/291-291 | 1/4/1/2 | 0.8 | 2.8 | 1.59 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 931/931 | 1200/1200 | 1200/1200 | 4 | 373-373/373-373 | NA | 701-701/701-701 | 1/4/1/4 | 1.5 | 6.5 | 1.59 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 820/820 | 1000/1000 | 1000/1000 | 4 | 324-324/324-324 | NA | 571-571/571-571 | 1/4/1/4 | 1.5 | 6.5 | 1.59 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 400 | 380/60/3 | 2 | 490/490 | 600/600 | 600/600 | 4 | 196-196/196-196 | 1060-1060/1060-1060 | 345-345/345-345 | 1/4/1/4 | 1.5 | 3.5 | 1.59 |
| | 460/60/3 | 1 | 767 | 800 | 800 | 4 | 162-162-162-162 | 878-878-878-878 | 285-285-285-285 | 2/8 | 1.5 | 2.8 | 1.59 |
| | 460/60/3 | 2 | 404/404 | 500/500 | 450/450 | 4 | 162-162/162-162 | 878-878/878-878 | 285-285/285-285 | 1/4/1/4 | 1.5 | 2.8 | 1.59 |
| | 575/60/3 | 1 | 617 | 700 | 700 | 4 | 130-130-130-130 | 705-705-705-705 | 229-229-229-229 | 2/8 | 1.5 | 2.3 | 1.59 |
| | 575/60/3 | 2 | 325/325 | 450/450 | 400/400 | 4 | 130-130/130-130 | 705-705/705-705 | 229-229/229-229 | 1/4/1/4 | 1.5 | 2.3 | 1.59 |
| | 400/50/3 | 1 | 882 | 1000 | 1000 | 4 | 189-189-189-189 | 1089-1089-1089-1089 | 354-354-354-354 | 2/8 | 0.8 | 2.8 | 1.59 |
| | 400/50/3 | 2 | 465/465 | 600/600 | 600/600 | 4 | 189-189/189-189 | 1089-1089/1089-1089 | 354-354/354-354 | 1/4/1/4 | 0.8 | 2.8 | 1.59 |

Notes:

1. As standard, all units have single point power connection. Optional dual point power connections are available.
2. Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
3. MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
4. RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
5. RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
6. Local codes may take precedence.
7. Control kW includes operational controls only. Does not include evaporator heaters.
8. XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
9. VOLTAGE UTILIZATION RANGE:

| Rated Voltage | Utilization Range |
|---|---|
| 200/60/3 | 180-220 |
| 230/60/3 | 208-254 |
| 380/60/3 | 342-418 |
| 460/60/3 | 414-506 |
| 575/60/3 | 516-633 |
| 400/50/3 | 360-440 |

10. A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
11. If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).

# Electrical Data and Connection

***Table E-3. Unit electrical data for high efficiency at high ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 673 | 800 | 800 | 2 | 270-270 | NA | 487-487 | 10 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 370/370 | 600/600 | 450/450 | 2 | 270/270 | NA | 487/487 | 5/5 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 594 | 700 | 700 | 2 | 235-235 | NA | 427-427 | 10 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 327/327 | 500/500 | 400/400 | 2 | 235/235 | NA | 427/427 | 5/5 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 355 | 400 | 400 | 2 | 142-142 | 801-801 | 260-260 | 10 | 1.5 | 3.5 | 0.83 |
| 140 | 380/60/3 | 2 | 195/195 | 300/300 | 250/250 | 2 | 142/142 | 801/801 | 260/260 | 5/5 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 294 | 400 | 350 | 2 | 118-118 | 652-652 | 212-212 | 10 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 162/162 | 250/250 | 200/200 | 2 | 118/118 | 652/652 | 212/212 | 5/5 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 235 | 300 | 300 | 2 | 94-94 | 520-520 | 172-172 | 10 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 129/129 | 200/200 | 175/175 | 2 | 94/94 | 520/520 | 172/172 | 5/5 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 339 | 450 | 400 | 2 | 138-138 | 774-774 | 259-259 | 10 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 187/187 | 300/300 | 225/225 | 2 | 138/138 | 774/774 | 259/259 | 5/5 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 742 | 1000 | 1000 | 2 | 320-270 | NA | 600-487 | 11 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 439/370 | 700/600 | 600/450 | 2 | 320/270 | NA | 600/487 | 6/5 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 654 | 800 | 800 | 2 | 278-235 | NA | 506-427 | 11 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 387/327 | 600/500 | 500/400 | 2 | 278/235 | NA | 506/427 | 6/5 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 391 | 500 | 450 | 2 | 168-142 | 973-801 | 316-260 | 11 | 1.5 | 3.5 | 0.83 |
| 155 | 380/60/3 | 2 | 231/195 | 350/300 | 300/250 | 2 | 168/142 | 973/801 | 316/260 | 6/5 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 323 | 450 | 400 | 2 | 139-118 | 774-652 | 252-212 | 11 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 191/162 | 300/250 | 225/200 | 2 | 139/118 | 774/652 | 252/212 | 6/5 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 258 | 350 | 300 | 2 | 111-94 | 631-528 | 205-172 | 11 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 153/129 | 250/200 | 200/175 | 2 | 111/94 | 631/528 | 205/172 | 6/5 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 379 | 500 | 450 | 2 | 168-138 | 896-796 | 291-259 | 11 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 227/187 | 350/300 | 300/225 | 2 | 168/138 | 896/796 | 291/259 | 6/5 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 798 | 1000 | 1000 | 2 | 320-320 | NA | 600-600 | 12 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 439/439 | 700/700 | 600/600 | 2 | 320/320 | NA | 600/600 | 6/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 704 | 800 | 800 | 2 | 278-278 | NA | 506-506 | 12 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 387/387 | 600/600 | 500/500 | 2 | 278/278 | NA | 506/506 | 6/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 420 | 500 | 500 | 2 | 168-168 | 973-973 | 316-316 | 12 | 1.5 | 3.5 | 0.83 |
| 170 | 380/60/3 | 2 | 231/231 | 350/350 | 300/300 | 2 | 168/168 | 973/973 | 316/316 | 6/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 346 | 450 | 400 | 2 | 139-139 | 774-774 | 252-252 | 12 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 191/191 | 300/300 | 225/225 | 2 | 139/139 | 774/774 | 252/252 | 6/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 277 | 350 | 350 | 2 | 111-111 | 631-631 | 205-205 | 12 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 153/153 | 250/250 | 200/200 | 2 | 111/111 | 631/631 | 205/205 | 6/6 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 412 | 500 | 500 | 2 | 168-168 | 896-896 | 291-291 | 12 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 227/227 | 350/350 | 300/300 | 2 | 168/168 | 896/896 | 291/291 | 6/6 | 0.8 | 2.8 | 0.83 |

# Electrical Data and Connection

***Table E-3 (Continued). Unit electrical data for high efficiency at high ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 887 | 1200 | 1000 | 2 | 386-320 | NA | 701-600 | 13 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 528/439 | 800/700 | 700/600 | 2 | 386/320 | NA | 701/600 | 7/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 783 | 1000 | 1000 | 2 | 336-278 | NA | 571-506 | 13 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 466/387 | 800/600 | 600/500 | 2 | 336/278 | NA | 571/506 | 7/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 467 | 600 | 600 | 2 | 203-168 | 1060-973 | 345-316 | 13 | 1.5 | 3.5 | 0.83 |
| 185 | 380/60/3 | 2 | 278/231 | 450/350 | 350/300 | 2 | 203/168 | 1060/973 | 345/316 | 7/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 385 | 500 | 450 | 2 | 168-139 | 878-774 | 285-252 | 13 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 230/191 | 350/300 | 300/225 | 2 | 168/139 | 878/774 | 285/252 | 7/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 308 | 450 | 350 | 2 | 134-111 | 705-631 | 229-205 | 13 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 184/153 | 300/250 | 225/200 | 2 | 134/111 | 705/631 | 229/205 | 7/6 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 445 | 600 | 500 | 2 | 198-168 | 1089-896 | 354-291 | 13 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 267/227 | 450/350 | 350/300 | 2 | 198/168 | 1089/896 | 354/291 | 7/6 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 960 | 1200 | 1200 | 2 | 386-386 | NA | 701-701 | 14 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 528/528 | 800/800 | 700/700 | 2 | 386/386 | NA | 701/701 | 7/7 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 847 | 1000 | 1000 | 2 | 336-336 | NA | 571-571 | 14 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 466/466 | 800/800 | 600/600 | 2 | 336/336 | NA | 571/571 | 7/7 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 506 | 700 | 600 | 2 | 203-203 | 1060-1060 | 345-345 | 14 | 1.5 | 3.5 | 0.83 |
| 200 | 380/60/3 | 2 | 278/278 | 450/450 | 350/350 | 2 | 203/203 | 1060/1060 | 345/345 | 7/7 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 417 | 500 | 500 | 2 | 168-168 | 878-878 | 285-285 | 14 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 230/230 | 350/350 | 300/300 | 2 | 168/168 | 878/878 | 285/285 | 7/7 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 334 | 450 | 400 | 2 | 134-134 | 705-705 | 229-229 | 14 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 184/184 | 300/300 | 225/225 | 2 | 134/134 | 705/705 | 229/229 | 7/7 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 485 | 600 | 600 | 2 | 198-198 | 1089-1089 | 354-354 | 14 | 0.8 | 2.8 | 0.83 |
| | 400/50/3 | 2 | 267/267 | 450/450 | 350/350 | 2 | 198/198 | 1089/1089 | 354/354 | 7/7 | 0.8 | 2.8 | 0.83 |
| | 200/60/3 | 1 | 1051 | 1200 | 1200 | 2 | 459-358 | NA | 821-701 | 14 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 626/522 | 1000/800 | 800/700 | 2 | 459/358 | NA | 821/701 | 8/6 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 926 | 1200 | 1200 | 2 | 399-336 | NA | 691-571 | 14 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 551/459 | 800/700 | 700/600 | 2 | 399/336 | NA | 691/571 | 8/6 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 555 | 700 | 700 | 2 | 242-203 | 1306-1060 | 424-345 | 14 | 1.5 | 3.5 | 0.83 |
| 225 | 380/60/3 | 2 | 331/275 | 500/450 | 400/350 | 2 | 242/203 | 1306/1060 | 424/345 | 8/6 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 458 | 600 | 600 | 2 | 200-168 | 1065-878 | 346-285 | 14 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 273/227 | 450/350 | 350/300 | 2 | 200/168 | 1065/878 | 346/285 | 8/6 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 367 | 500 | 450 | 2 | 160-134 | 853-705 | 277-229 | 14 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 219/182 | 350/300 | 300/225 | 2 | 160/134 | 853/705 | 277/229 | 8/6 | 1.5 | 2.3 | 0.83 |

# Electrical Data and Connection

***Table E-3 (Continued). Unit electrical data for high efficiency at high ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | kW | FLA | kW (7) |
| | 200/60/3 | 1 | 1137 | 1200 | 1200 | 2 | 459-459 | NA | 821-821 | 16 | 1.5 | 6.5 | 0.83 |
| | 200/60/3 | 2 | 626/626 | 1000/1000 | 800/800 | 2 | 459/459 | NA | 821/821 | 8/8 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 1 | 1002 | 1200 | 1200 | 2 | 399-399 | NA | 691-691 | 16 | 1.5 | 6.5 | 0.83 |
| | 230/60/3 | 2 | 551/551 | 800/800 | 700/700 | 2 | 399/399 | NA | 691/691 | 8/8 | 1.5 | 6.5 | 0.83 |
| RTAC | 380/60/3 | 1 | 601 | 800 | 700 | 2 | 242-242 | 1306-1306 | 424-424 | 16 | 1.5 | 3.5 | 0.83 |
| 250 | 380/60/3 | 2 | 331/331 | 500/500 | 400/400 | 2 | 242/242 | 1306/1306 | 424/424 | 8/8 | 1.5 | 3.5 | 0.83 |
| | 460/60/3 | 1 | 495 | 600 | 600 | 2 | 200-200 | 1065-1065 | 346-346 | 16 | 1.5 | 2.8 | 0.83 |
| | 460/60/3 | 2 | 273/273 | 450/450 | 350/350 | 2 | 200/200 | 1065/1065 | 346/346 | 8/8 | 1.5 | 2.8 | 0.83 |
| | 575/60/3 | 1 | 397 | 500 | 450 | 2 | 160-160 | 853-853 | 277-277 | 16 | 1.5 | 2.3 | 0.83 |
| | 575/60/3 | 2 | 219/219 | 350/350 | 300/300 | 2 | 160/160 | 853/853 | 277/277 | 8/8 | 1.5 | 2.3 | 0.83 |
| | 400/50/3 | 1 | 569 | 700 | 700 | 3 | 138-138-198 | 796-796-1089 | 259-259-354 | 16 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 339/265 | 450/450 | 400/350 | 3 | 138-138/198 | 796-796/1089 | 259-259/354 | 10/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 798/522 | 1000/800 | 1000/700 | 3 | 320-320/386 | NA | 600-600/701 | 12/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 704/459 | 800/700 | 800/600 | 3 | 278-278/336 | NA | 506-506/571 | 12/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 275 | 380/60/3 | 2 | 420/275 | 500/450 | 500/350 | 3 | 168-168/203 | 973-973/1060 | 316-316/345 | 12/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 539 | 700 | 600 | 3 | 139-139-168 | 774-774-878 | 252-252-285 | 18 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 347/227 | 450/350 | 400/300 | 3 | 139-139/168 | 774-774/878 | 252-252/285 | 12/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 431 | 500 | 500 | 3 | 111-111-134 | 631-631-705 | 205-205-229 | 18 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 278/182 | 350/300 | 350/225 | 3 | 111-111/134 | 631-631/705 | 205-205/229 | 12/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 634 | 800 | 700 | 3 | 168-168-168 | 896-896-1089 | 291-291-354 | 18 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 412/265 | 500/450 | 500/350 | 3 | 168-168/168 | 896-896/1089 | 291-291/254 | 12/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 960/522 | 1200/800 | 1200/700 | 3 | 386-386/386 | NA | 701-701/701 | 14/6 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 847/459 | 1000/700 | 1000/600 | 3 | 336-336/336 | NA | 571-571/571 | 14/6 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 300 | 380/60/3 | 2 | 506/275 | 700/450 | 600/350 | 3 | 203-203/203 | 1060-1060/1060 | 345-345/345 | 14/6 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 602 | 700 | 700 | 3 | 168-168-168 | 878-878-878 | 285-285-285 | 20 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 418/227 | 500/350 | 500/300 | 3 | 168-168/168 | 878-878/87/ | 285-285/285 | 14/6 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 484 | 600 | 600 | 3 | 134-134-134 | 705-705-705 | 229-229-229 | 20 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 334/182 | 450/300 | 400/225 | 3 | 134-134/134 | 705-705/705 | 229-229/229 | 14/6 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 700 | 800 | 800 | 3 | 198-198-198 | 1089-1089-1089 | 354-354-354 | 20 | 0.8 | 2.8 | 1.2 |
| | 400/50/3 | 2 | 485/265 | 600/450 | 600/350 | 3 | 198-198/198 | 1089-1089/1089 | 354-354/354 | 14/6 | 0.8 | 2.8 | 1.2 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 798/798 | 10001000 | 10001000 | 4 | 320-320/320-320 | NA | 600-600/600-600 | 12/12 | 1.5 | 6.5 | 1.2 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 704/704 | 800/800 | 800/800 | 4 | 278-278/278-278 | NA | 506-506/506-506 | 12/12 | 1.5 | 6.5 | 1.2 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 350 | 380/60/3 | 2 | 420/420 | 500/500 | 500/500 | 4 | 168-168/168-168 | 973-973/973-973 | 316-316/316-316 | 12/12 | 1.5 | 3.5 | 1.2 |
| | 460/60/3 | 1 | 658 | 700 | 700 | 4 | 139-139-139-139 | 774-774-774-774 | 252-252-252-252 | 24 | 1.5 | 2.8 | 1.2 |
| | 460/60/3 | 2 | 347/347 | 450/450 | 400/400 | 4 | 139-139/139-139 | 774-774/774-774 | 252-252/252-252 | 12/12 | 1.5 | 2.8 | 1.2 |
| | 575/60/3 | 1 | 527 | 600 | 600 | 4 | 111-111-111-111 | 631-631-631-631 | 205-205-205-205 | 24 | 1.5 | 2.3 | 1.2 |
| | 575/60/3 | 2 | 278/278 | 350/350 | 350/350 | 4 | 111-111/111-111 | 631-631/631-631 | 205-205/205-205 | 12/12 | 1.5 | 2.3 | 1.2 |
| | 400/50/3 | 1 | 782 | 800 | 800 | 4 | 168-168-168-168 | 896-896-896-896 | 291-291-291-291 | 24 | 0.8 | 2.8 | 1.59 |
| | 400/50/3 | 2 | 412/412 | 500/500 | 500/500 | 4 | 168-168/168-168 | 896-896/896-896 | 291-291/291-291 | 12/12 | 0.8 | 2.8 | 1.59 |

# Electrical Data and Connection

***Table E-3 (Continued). Unit electrical data for high efficiency at high ambient operation***

| | | | Unit Wiring | | | | Motor Data | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # of | | Max. Fuse, HACR | Rec. Time | | | Compressor (Each) | | Fans (Each) | | | |
| Unit | Rated | Power | MCA (3) | Breaker or MOP (11) | Delay or RDE (4) | | RLA (5) | XLRA (8) | YLRA (8) | Qty. | | | Control |
| Size | Voltage | Conns (1) | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Qty | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | Ckt 1/Ckt 2 | 2kW | FLA | kW (7) |
| RTAC | 400/50/3 | 1 | 855 | 1000 | 1000 | 4 | 198-198-168-168 | 1089-1089-896-896 | 354-354-291-291 | 26 | 0.8 | 2.8 | 1.59 |
| 375 | 400/50/3 | 2 | 485/412 | 600/500 | 600/500 | 4 | 198-198/168-168 | 1089-1089/896-896 | 254-254/291-291 | 14/12 | 0.8 | 2.8 | 1.59 |
| | 200/60/3 | 1 | NA | | | | | | | | | | |
| | 200/60/3 | 2 | 960/960 | 1200/1200 | 12001200 | 4 | 386-386/386-386 | NA | 701-701/701-701 | 14/14 | 1.5 | 6.5 | 1.59 |
| | 230/60/3 | 1 | NA | | | | | | | | | | |
| | 230/60/3 | 2 | 847/847 | 1000/1000 | 1000/1000 | 4 | 336-336/336-336 | NA | 571-571/571-571 | 14/14 | 1.5 | 6.5 | 1.59 |
| RTAC | 380/60/3 | 1 | NA | | | | | | | | | | |
| 400 | 380/60/3 | 2 | 505/506 | 700/700 | 600/600 | 4 | 203-203/203-203 | 1060-1060/1060-1060 | 345-345/345-345 | 14/14 | 1.5 | 3.5 | 1.59 |
| | 460/60/3 | 1 | 793 | 800 | 800 | 4 | 168-168-168-168 | 878-878-878-878 | 285-285-285-285 | 28 | 1.5 | 2.8 | 1.59 |
| | 460/60/3 | 2 | 418/418 | 500/500 | 500/500 | 4 | 168-168/168-168 | 878-878/878-878 | 285-285/285-285 | 14/14 | 1.5 | 2.8 | 1.59 |
| | 575/60/3 | 1 | 634 | 700 | 700 | 4 | 134-134-134-134 | 705-705-705-705 | 229-229-229-229 | 28 | 1.5 | 2.3 | 1.59 |
| | 575/60/3 | 2 | 334/334 | 450/450 | 400/400 | 4 | 134-134/134-134 | 705-705/705-705 | 229-229/229-229 | 14/14 | 1.5 | 2.3 | 1.59 |
| | 400/50/3 | 1 | 920 | 1000 | 1000 | 4 | 198-198-198-198 | 1089-1089-1089-1089 | 354-354-354-354 | 28 | 0.8 | 2.8 | 1.59 |
| | 400/50/3 | 2 | 485/485 | 600/600 | 600/600 | 4 | 198-198/198-198 | 1089-1089/1089-1089 | 354-354/354-354 | 14/14 | 0.8 | 2.8 | 1.59 |

Notes:

1. As standard, all units have single point power connection. Optional dual point power connections are available.
2. Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
3. MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
4. RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
5. RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
6. Local codes may take precedence.
7. Control kW includes operational controls only. Does not include evaporator heaters.
8. XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
9. VOLTAGE UTILIZATION RANGE:

| Rated Voltage | Utilization Range |
|---|---|
| 200/60/3 | 180-220 |
| 230/60/3 | 208-254 |
| 380/60/3 | 342-418 |
| 460/60/3 | 414-506 |
| 575/60/3 | 516-633 |
| 400/50/3 | 360-440 |

10. A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
11. If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).

# Electrical Data and Connection

## Wire Size

*Table E-4. Customer wire selection for single point units*

| Unit Size | Rated Voltage | Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range | Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range | Wire Selection Size to Disconnect (2) Connector Wire Range | Wire Selection Size to Circuit Breaker (2) Connector Wire Range |
|---|---|---|---|---|---|
| | 200V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size F | Lug Size F | Lug Size A | Lug Size A |
| 140 | 460V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| STD | 575V-60Hz | Lug Size F | Lug Size F | Lug Size C | Lug Size C |
| | 400V-50Hz | Lug Size F | Lug Size F | Lug Size A | Lug Size A |
| | 200V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size F | Lug Size F | Lug Size A | Lug Size A |
| 140 | 460V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| HIGH | 575V-60Hz | Lug Size F | Lug Size F | Lug Size C | Lug Size C |
| | 400V-50Hz | Lug Size F | Lug Size F | Lug Size A | Lug Size A |
| | 200V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 155 | 460V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| STD | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size C | Lug Size C |
| | 400V-50Hz | Lug Size E or I | Lug Size E or I | Lug Size A | Lug Size A |
| | 200V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 155 | 460V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| HIGH | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size C | Lug Size C |
| | 400V-50Hz | Lug Size E or I | Lug Size E or I | Lug Size A | Lug Size A |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 170 | 460V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| STD | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| | 400V-50Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size G | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 170 | 460V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| HIGH | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| | 400V-50Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 185 | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| STD | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| | 400V-50Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 185 | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| HIGH | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| | 400V-50Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size H | Lug Size H |
| 200 | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| STD | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| | 400V-50Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size H | Lug Size H |
| 200 | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| HIGH | 575V-60Hz | Lug Size E or I | Lug Size F | Lug Size A | Lug Size A |
| | 400V-50Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |

# Electrical Data and Connection

## Wire Size

***Table E-4 (Continued). Customer wire selection for single point units***

| Unit Size | Rated Voltage | Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range | Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range | Wire Selection Size to Disconnect (2) Connector Wire Range | Wire Selection Size to Circuit Breaker (2) Connector Wire Range |
|---|---|---|---|---|---|
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| 225 | 380V-60Hz | Lug Size G | Lug Size G | Lug Size H | Lug Size H |
| STD | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 575V-60Hz | Lug Size E or I | Lug Size E or I | Lug Size A | Lug Size A |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| 225 | 380V-60Hz | Lug Size G | Lug Size G | Lug Size H | Lug Size H |
| HIGH | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| | 575V-60Hz | Lug Size E or I | Lug Size E or I | Lug Size A | Lug Size A |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 250 | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| STD | 575V-60Hz | Lug Size G | Lug Size N | Lug Size A | Lug Size A |
| | 400V-50Hz | NA | NA | NA | NA |
| | 200V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| | 230V-60Hz | NA | Lug Size L | Lug Size B | Lug Size B |
| RTAC | 380V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| 250 | 460V-60Hz | Lug Size G | Lug Size G | Lug Size B | Lug Size B |
| HIGH | 575V-60Hz | Lug Size G | Lug Size N | Lug Size B | Lug Size B |
| | 400V-50Hz | NA | NA | NA | NA |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 275 | 575V-60Hz | NA | NA | NA | Lug Size L |
| STD | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 275 | 575V-60Hz | NA | NA | NA | Lug Size L |
| HIGH | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 300 | 575V-60Hz | NA | NA | NA | Lug Size L |
| STD | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 300 | 575V-60Hz | NA | NA | NA | Lug Size L |
| HIGH | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 350 | 575V-60Hz | NA | NA | NA | Lug Size L |
| STD | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 350 | 575V-60Hz | NA | NA | NA | Lug Size L |
| HIGH | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC 375 STD | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC 375 HIGH | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 400 | 575V-60Hz | NA | NA | NA | Lug Size L |
| STD | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 400 | 575V-60Hz | NA | NA | NA | Lug Size L |
| HIGH | 400V-50Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 450 STD | 575V-60Hz | NA | NA | NA | Lug Size L |
| RTAC | 460V-60Hz | NA | NA | NA | Lug Size L |
| 500 STD | 575V-60Hz | NA | NA | NA | Lug Size L |

Lug Size A = (1) 4/0 to 600 MCM per phase
Lug Size B = (4) 4/0 to 500 MCM per phase
Lug Size C = (1) #3 to 350 MCM per phase
Lug Size D = (1) #2 to 500 MCM per phase
Lug Size E (5) = (2) 1/0 to 250 MCM per phase
Lug Size F = (2) #4 to 500 MCM per phase
Lug Size G = (2) #1 to 500 MCM per phase
Lug Size H = (2) 400 to 500 MCM per phase
Lug Size I (5) = (1) #2 to 750 MCM per phase

Lug Size J = (1) 250 to 500 MCM per phase
Lug Size K = (2) 3/0 to 350 MCM per phase
Lug Size L = (4) #2 to 600 MCM per phase
Lug Size M = (2) #4 to 600 MCM per phase
Lug Size N = (2) #2 to 600 MCM per phase
Lug Size O = (1) #2 to 250 MCM per phase

1. As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
2. Non-fused unit disconnect and circuit breaker are optional.
3. Copper wire only, sized per N.E.C., based on nameplate minimum circuit ampacity (MCA).
4. Circuit Breaker sizes are for factory mounted only. Field installed circuit breakers need to be sized using HACR breaker recommendations from Table E-1.
5. A single, dual-rated lug is associated with the "Lug Size E or I" designation. Each phase of the lug has a single, oval-shaped hole, into which a single #2 to 750 MCM wire OR two 1/0 to 250 MCM wires can be inserted.

# Electrical Data and Connection

## Wire Size

***Table E-5. Customer wire selection for dual point units***

| Unit Size | Rated Voltage | Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Disconnect (2) Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Circuit Breaker (2) Connector Wire Range Ckt 1 / Ckt 2 |
|---|---|---|---|---|---|
| | 200V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| | 230V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| 140 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| STD | 575V-60Hz | Lug Size F/Lug Size F | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| | 230V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| 140 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| HIGH | 575V-60Hz | Lug Size F/Lug Size F | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| | 230V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| 155 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| | 230V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| 155 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| | 230V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| 170 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Szie C/Lug Size C | Lug Szie C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| | 230V-60Hz | NA | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| 170 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| 185 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| 185 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| 200 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size K/Lug Size K | Lug Size K/Lug Size K |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| 200 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |

# Electrical Data and Connection

## Wire Size

***Table E-5 (Continued). Customer wire selection for dual point units***

| Unit Size | Rated Voltage | Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Disconnect (2) Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Circuit Breaker (2) Connector Wire Range Ckt 1 / Ckt 2 |
|---|---|---|---|---|---|
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| 225 | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| STD | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| 225 | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| HIGH | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| 250 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size G/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| RTAC | 380V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size J/Lug Size J | Lug Size J/Lug Size J |
| 250 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 400V-50Hz | Lug Size G/Lug Size I or E | Lug Size I or E/Lug Size I or E | Lug Size C/Lug Size C | Lug Size C/Lug Size C |
| | 200V-60Hz | NA | Lug Size L/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 380V-60Hz | Lug Size G/Lug Size I or E | Lug Size G/Lug Size I or E | Lug Size B/Lug Size A | Lug Size B/Lug Size A |
| 275 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size I or E | Lug Size A/Lug Size C | Lug Size A/Lug Size C |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size C | Lug Size A/Lug Size C |
| | 400V-50Hz | Lug Size G/Lug Size I or E | Lug Size N/Lug Size I or E | Lug Size B/Lug Size C | Lug Size B/Lug Size C |
| | 200V-60Hz | NA | Lug Size L/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 380V-60Hz | Lug Size G/Lug Size I or E | Lug Size G/Lug Size I or E | Lug Size B/Lug Size A | Lug Size B/Lug Size A |
| 275 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size I or E | Lug Size A/Lug Size C | Lug Size A/Lug Size C |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size C | Lug Size A/Lug Size C |
| | 400V-50Hz | Lug Size G/Lug Size I or E | Lug Size N/Lug Size I or E | Lug Size B/Lug Size C | Lug Size B/Lug Size C |
| | 200V-60Hz | NA | Lug Size L/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 380V-60Hz | Lug Size G/Lug Size I or E | Lug Size G/Lug Size I or E | Lug Size H/Lug Size A | Lug Size H/Lug Size A |
| 300 | 460V-60Hz | Lug Size L/Lug Size L | Lug Size M/Lug Size I or E | Lug Size B/Lug Size C | Lug Size B/Lug Size C |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size C | Lug Size A/Lug Size C |
| | 400V-50Hz | Lug Size G/Lug Size I or E | Lug Size N/Lug Size I or E | Lug Size B/Lug Size C | Lug Size B/Lug Size C |
| | 200V-60Hz | NA | Lug Size L/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 380V-60Hz | Lug Size G/Lug Size I or E | Lug Size G/Lug Size I or E | Lug Size H/Lug Size A | Lug Size H/Lug Size A |
| 300 | 460V-60Hz | Lug Size L/Lug Size L | Lug Size M/Lug Size I or E | Lug Size B/Lug Size C | Lug Size B/Lug Size C |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size C | Lug Size A/Lug Size C |
| | 400V-50Hz | Lug Size G/Lug Size I or E | Lug Size N/Lug Size I or E | Lug Size B/Lug Size C | Lug Size B/Lug Size C |
| | 200V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 380V-60Hz | Lug Size G/Lug Size G | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| 350 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| STD | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| | 400V-50Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 200V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC | 380V-60Hz | Lug Size G/Lug Size G | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| 350 | 460V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| HIGH | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| | 400V-50Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |

# Electrical Data and Connection Wire Size

***Table E-5 (Continued). Customer wire selection for dual point units***

| Unit Size | Rated Voltage | Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Disconnect (2) Connector Wire Range Ckt 1 / Ckt 2 | Wire Selection Size to Circuit Breaker (2) Connector Wire Range Ckt 1 / Ckt 2 |
|---|---|---|---|---|---|
| RTAC 375 STD | 400V-50Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC 375 HIGH | 400V-50Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC 400 STD | 200V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 380V-60Hz | Lug Size G/Lug Size G | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| | 460V-60Hz | Lug Size L/Lug Size L | Lug Size M/Lug Size M | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| | 400V-50Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC 400 HIGH | 200V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 380V-60Hz | Lug Size G/Lug Size G | Lug Size G/Lug Size G | Lug Size H/Lug Size H | Lug Size H/Lug Size H |
| | 460V-60Hz | Lug Size L/Lug Size L | Lug Size M/Lug Size M | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 575V-60Hz | Lug Size I or E/Lug Size I or E | Lug Size F/Lug Size F | Lug Size A/Lug Size A | Lug Size A/Lug Size A |
| | 400V-50Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| RTAC 450 STD | 200V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 380V-60Hz | Lug Size G/Lug Size G | Lug Size G/Lug Size G | Lug Size B/Lug Size H | Lug Size B/Lug Size H |
| | 460V-60Hz | Lug Size L/Lug Size L | Lug Size N/Lug Size M | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 575V-60Hz | Lug Size G/Lug Size G | Lug Size N/Lug Size F | Lug Size B/Lug Size A | Lug Size B/Lug Size A |
| RTAC 500 STD | 200V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 230V-60Hz | NA | Lug Size L/Lug Size L | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 380V-60Hz | Lug Size G/Lug Size G | Lug Size G/Lug Size G | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 460V-60Hz | Lug Size L/Lug Size L | Lug Size N/Lug Size N | Lug Size B/Lug Size B | Lug Size B/Lug Size B |
| | 575V-60Hz | Lug Size G/Lug Size G | Lug Size F/Lug Size L | Lug Size B/Lug Size A | Lug Size B/Lug Size A |

Lug Size A = (1) 4/0 to 600 MCM per phase
Lug Size B = (4) 4/0 to 500 MCM per phase
Lug Size C = (1) #3 to 350 MCM per phase
Lug Size D = (1) #2 to 500 MCM per phase
Lug Size E (5) = (2) 1/0 to 250 MCM per phase
Lug Size F = (2) #4 to 500 MCM per phase
Lug Size G = (2) #1 to 500 MCM per phase
Lug Size H = (2) 400 to 500 MCM per phase
Lug Size I (5) = (1) #2 to 750 MCM per phase
Lug Size J = (1) 250 to 500 MCM per phase
Lug Size K = (2) 3/0 to 350 MCM per phase
Lug Size L = (4) #2 to 600 MCM per phase
Lug Size M = (2) #4 to 600 MCM per phase
Lug Size N = (2) #2 to 600 MCM per phase
Lug Size O = (1) #2 to 250 MCM per phase

1. As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
2. Non-fused unit disconnect and circuit breaker are optional.
3. Copper wire only, sized per N.E.C., based on nameplate minimum circuit ampacity (MCA).
4. Circuit Breaker sizes are for factory mounted only. Field installed circuit breakers need to be sized using HACR breaker recommendations from Table E-1.
5. A single, dual-rated lug is associated with the "Lug Size E or I" designation. Each phase of the lug has a single, oval-shaped hole, into which a single #2 to 750 MCM wire OR two 1/0 to 250 MCM wires can be inserted.

# Electrical Data and Connection

## Field Layout

## Field Layout, 2-Compressor Units

**WARNING**

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRICAL AND REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT ALL ELECTRICAL POWER BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

**Avertissement**

VOLTAGE HASARDEUX!

DECONNECTEZ TOUTES LES SOURCES ELECTRIQUES INCLUANT LES DISJONCTEURS SITUES A DISTANCE AVANT D'EFFECTUER L'ENTRETIEN.

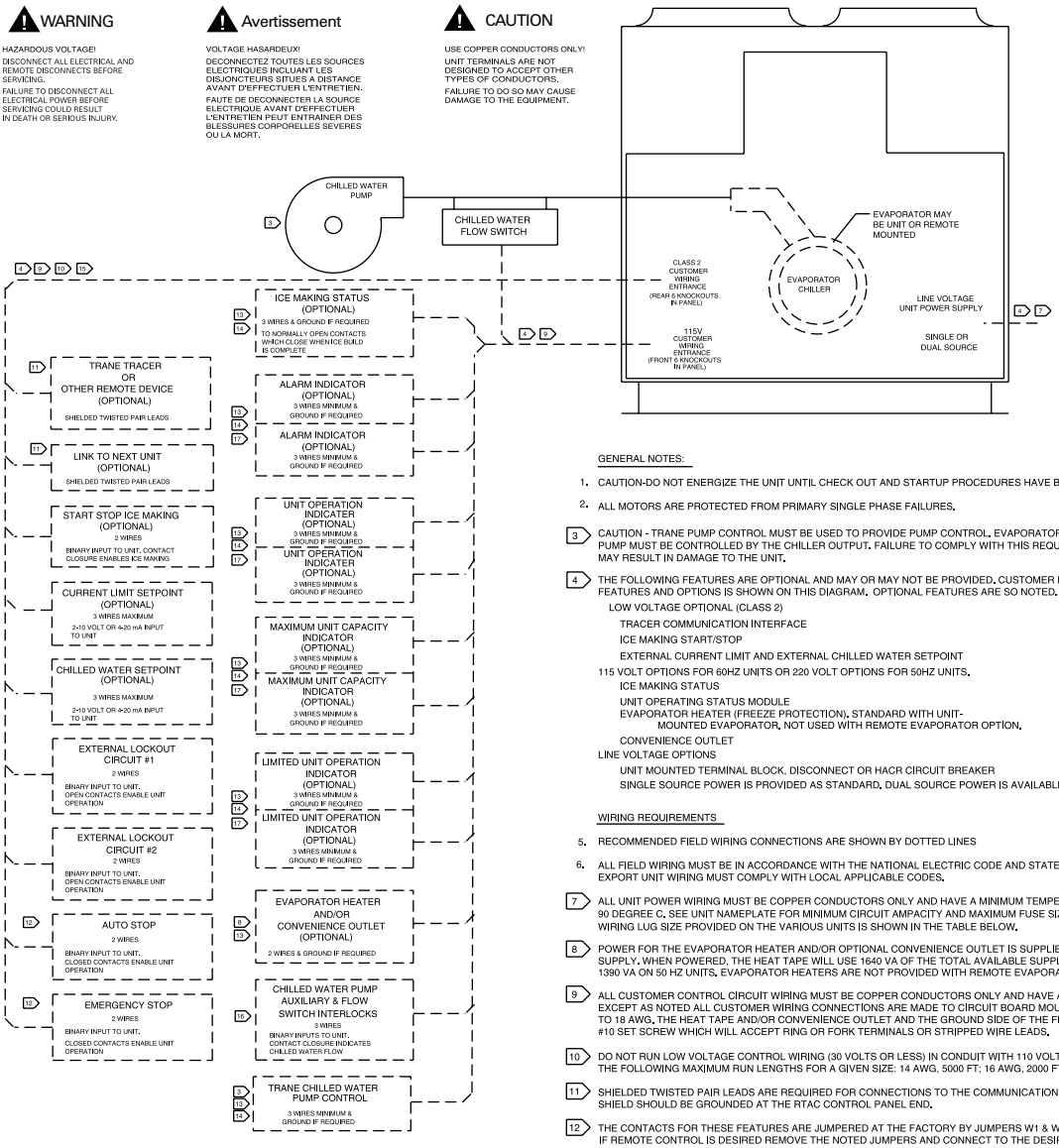
FAUTE DE DECONNECTER LA SOURCE ELECTRIQUE AVANT D'EFFECTUER L'ENTRETIEN PEUT ENTRAINER DES BLESSURES CORPORELLES SEVERES OU LA MORT.

**CAUTION**

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.




GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.
3. CAUTION - TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.
4. THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
   - LOW VOLTAGE OPTIONAL (CLASS 2)
     - TRACER COMMUNICATION INTERFACE
     - ICE MAKING START/STOP
     - EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT
   - 115 VOLT OPTIONS FOR 60HZ UNITS OR 220 VOLT OPTIONS FOR 50HZ UNITS.
     - ICE MAKING STATUS
     - UNIT OPERATING STATUS MODULE
     - EVAPORATOR HEATER (FREEZE PROTECTION). STANDARD WITH UNIT-MOUNTED EVAPORATOR. NOT USED WITH REMOTE EVAPORATOR OPTION.
     - CONVENIENCE OUTLET
   - LINE VOLTAGE OPTIONS
     - UNIT MOUNTED TERMINAL BLOCK, DISCONNECT OR HACR CIRCUIT BREAKER
     - SINGLE SOURCE POWER IS PROVIDED AS STANDARD. DUAL SOURCE POWER IS AVAILABLE AS AN OPTION.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
7. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN THE TABLE BELOW.
8. POWER FOR THE EVAPORATOR HEATER AND/OR OPTIONAL CONVENIENCE OUTLET IS SUPPLIED BY A COMMON CUSTOMER PROVIDED POWER SUPPLY. WHEN POWERED, THE HEAT TAPE WILL USE 1640 VA OF THE TOTAL AVAILABLE SUPPLY ON 60HZ UNITS AND APPROXIMATELY 1390 VA ON 50 HZ UNITS. EVAPORATOR HEATERS ARE NOT PROVIDED WITH REMOTE EVAPORATOR UNITS.
9. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.
10. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000FT
11. SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.
12. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF IF REMOTE CONTROL IS DESIRED REMOVE THE NOTED JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
13. FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED. THE MAX FUSE SIZE FOR EVAPORATOR HEATER AND CONVENIENCE OUTLET IS 20 AMPS ON 115 VOLT 60HZ PRODUCTS AND 15 AMPS ON 220 VOLT 50 HZ PRODUCTS. THE MAX FUSE SIZE FOR ALL OTHER FIELD PROVIDED CIRCUITS IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

14. UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL. THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ, CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.
15. CUSTOMER SUPPLIED CONTACTS FOR ALL CLASS 2 CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
16. FLOW SWITCH & INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1 mA CIRCUIT OR A 220 VOLT 2 mA CIRCUT.
17. THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE INDICATOR FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

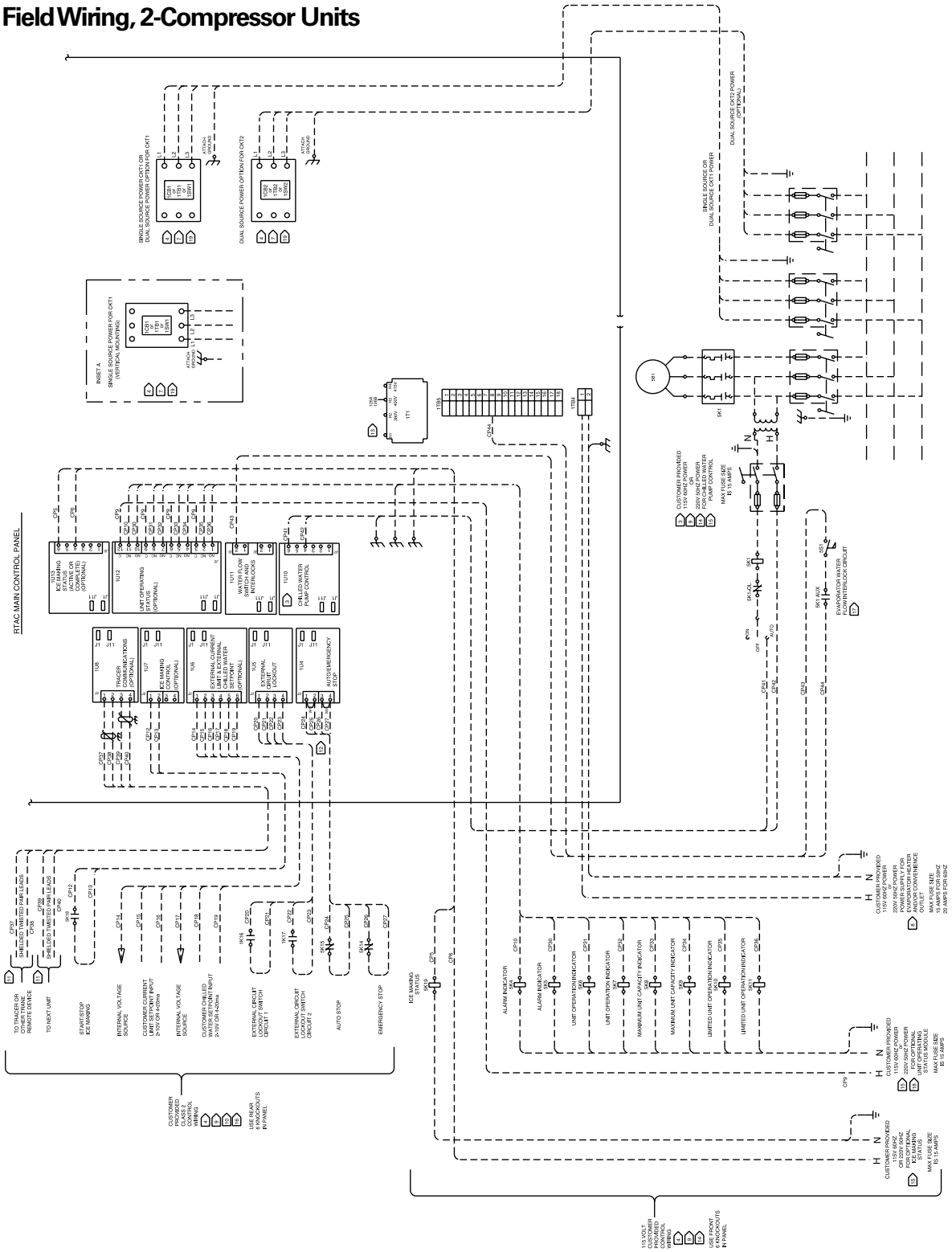
    THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. SEE IOM FOR DETAILS. DEFAULT FUNCTIONS ARE SHOWN.

    THE NORMALLY OPEN CONTACTS ON EACH RELAY OPERATE AS FOLLOWS:
    CONTACTS TO THE ALARM INDICATOR CLOSE ON A UNIT MALFUNCTION.
    CONTACTS TH THE UNIT OPERATION INDICATOR CLOSE WHEN ANY COMPRESSOR IS RUNNING.
    CONTACTS TO THE MAX UNIT CAPACITY INDICATOR CLOSE WHEN ALL UNIT COMPRESSORS ARE FULLY LOADED.
    CONTACTS TO THE LIMITED UNIT OPERATION INDICATOR CLOSE IF NORMAL UNIT OPERATION IS RESTRICTED BY SOME OPERATING PARAMETER.

# Electrical Data and Connection

## Typical Wiring Diagram

### Field Wiring, 2-Compressor Units



# Electrical Data and Connection

## Typical Wiring Diagram

## Field Wiring Notes, 2-Compressor Units

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.

3 CAUTION-TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.

4 THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.

LOW VOLTAGE OPTIONS (CLASS 2)

TRACER COMMUNICATION INTERFACE

ICE MAKING START/STOP

EXTERNAL CURENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT

115 VOLT OPTIONS FOR 60HZ UNITS OR 220 VOLT OPTIONS FOR 50HZ UNITS.

ICE MAKING STATUS

UNIT OPERATING STATUS MODULE

EVAPORATOR HEATER (FREEZE PROTECTION). STANDARD WITH UNIT-MOUNTED EVAPORATOR. NOT USED WITH REMOTE EVAPORATOR OPTION.

CONVENIENCE OUTLET

LINE VOLTAGE OPTIONS

UNIT MOUNTED TERMINAL BLOCK, DISCONNECT SWITCH OR HACR CIRCUIT BREAKER (TB, SW OR CB)

19 SINGLE SOURCE POWER IS PROVIDED AS STANDARD. DUAL SOURCE POWER IS AVAILABLE AS AN OPTION. COMPONENTS 1CB2, 1TB2 & 1SW2 ARE PROVIDED ONLY WITH THE DUAL SOURCE POWER OPTION. IF SINGLE SOURCE POWER IS PROVIDED, 1CB1, 1SW1 OR 1TB1 MAY BE MOUNTED VERTICALLY OR HORIZIONTALLY. REQUIRED PHASING FOR HORIZIONTAL ARRANGEMENT IS SHOWN. SEE INSET A FOR CORRECT PHASING WHEN THE NOTED COMPONENTS ARE MOUNTED VERTICALLY.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.

7 ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN THE ADJACENT TABLE.

8 POWER FOR THE EVAPORATOR HEATER AND/OR OPTIONAL CONVENIENCE OUTLET IS SUPPLIED BY A COMMON CUSTOMER PROVIDED POWER SUPPLY. WHEN POWERED, THE HEAT TAPE WILL USE 1640 VA OF THE TOTAL AVAILABLE SUPPLY ON 60 HZ UNITS AND APPROXIMATELY 1390 VA ON 50 HZ UNITS. EVAPORATOR HEATERS ARE NOT PROVIDED WITH REMOTE EVAPORATOR UNITS.

9 ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.

10 DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT.

11 SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.

12 THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.

13 AS SHIPPED THE NORMAL 400 VOLT UNIT CONTROL POWER TRANSFORMERS ARE WIRED ON THE 400 VOLT TAP (H3). TRANSFORMER LEADS 126A & 126B SHOULD BE RECONNECTED TO THE APPROPRIATE TAP FOR THE 380 (H2) OR 415 (H4) VOLT POWER SUPPLIES.

14 GROUND ALL CUSTOMER PROVIDED 115 VOLT POWER SUPPLIES AS REQUIRED BY CODES. GREEN GROUND SCREWS ARE PROVIDED IN THE UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

15 UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS & THE ICE MAKING STATUS RELAY (1U10, 1U12, & 1U13) ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS. THE MAX FUSE SIZE FOR ANY OF THESE CIRCUITS IS 15 AMPS.

16 CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.

17 FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.

18 THE FIELD PROVIDED INDICATORS MAY BE RELAYS (AS SHOWN), LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

**⚠ WARNING**

**Hazardous Voltage!**

**Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.**

**CAUTION**

**Use Copper Conductors Only!**

**Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.**

# Electrical Data and Connection

## Typical Wiring Diagram

## Field Wiring Notes, 3- & 4-Compressor Units, Dual-Point Power

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.

3 CAUTION-TRANE PUMP CONTROL MUST BE USED TO PROVIDED PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.

4 THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.

LOW VOLTAGE OPTIONS (CLASS 2)

TRACER COMMUNICATION INTERFACE

ICE MAKING START/STOP

EXTERNAL CURENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT

115 VOLT OPTIONS FOR 60HZ, OR 220 VOLT OPTIONS FOR 50HZ.

ICE MAKING STATUS
UNIT OPERATING STATUS MODULE
EVAPORATOR HEATER (FREEZE PROTECTION). STANDARD WITH UNIT MOUNTED EVAPORATOR. NOT USED WITH REMOTE EVAPORATOR OPTION.
CONVENIENCE OUTLET OPTION IS AVAILABLE ONLY ON 60HZ UNITS.

19 LINE VOLTAGE OPTIONS

SINGLE OR DUAL SOURCE POWER MAY BE SPECIFIED. THIS DRAWING COVERS THE DUAL SOURCE POWER OPTION.

WHEN SPECIFIED CUSTOMER POWER WIRING CONNECTIONS ARE MADE TO CIRCUIT 1 (CONTROL PANEL 1) AND CIRCUIT 2 (CONTROL PANEL 2). AVAILABLE OPTIONS IN PANELS 1 & 2 FOR CUSTOMER WIRING TERMINATION INCLUDE TERMINAL BLOCKS, DISCONNECT SWITCHES OR HACR TYPE CIRCUIT BREAKERS. (TB, SW, CB)

THE NOTED WIRE TERMINATION DEVICES MAY BE MOUNTED VERTICALLY OR HORIZONTALLY. SEE INSET A FOR CORRECT PHASING WHEN THE DEVICES ARE MOUNTED VERTICALLY.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES.
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS.
EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.

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9 ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.

10 DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000FT

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12 THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.

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14 GROUND ALL CUSTOMER PROVIDED 115 VOLT POWER SUPPLIES AS REQUIRED BY CODES. GREEN GROUND SCREWS ARE PROVIDED IN THE UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

15 UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS & THE ICE MAKING STATUS RELAY (1U10, 1U12, & 1U13) ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS. THE MAX FUSE SIZE FOR ANY OF THESE CIRCUITS IS 15 AMPS.

16 CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.

17 FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.

18 THE FIELD PROVIDED INDICATORS MAY BE RELAYS (AS SHOWN), LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

**⚠ WARNING**

**Hazardous Voltage!**

**Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.**

**CAUTION**

**Use Copper Conductors Only!**

**Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.**

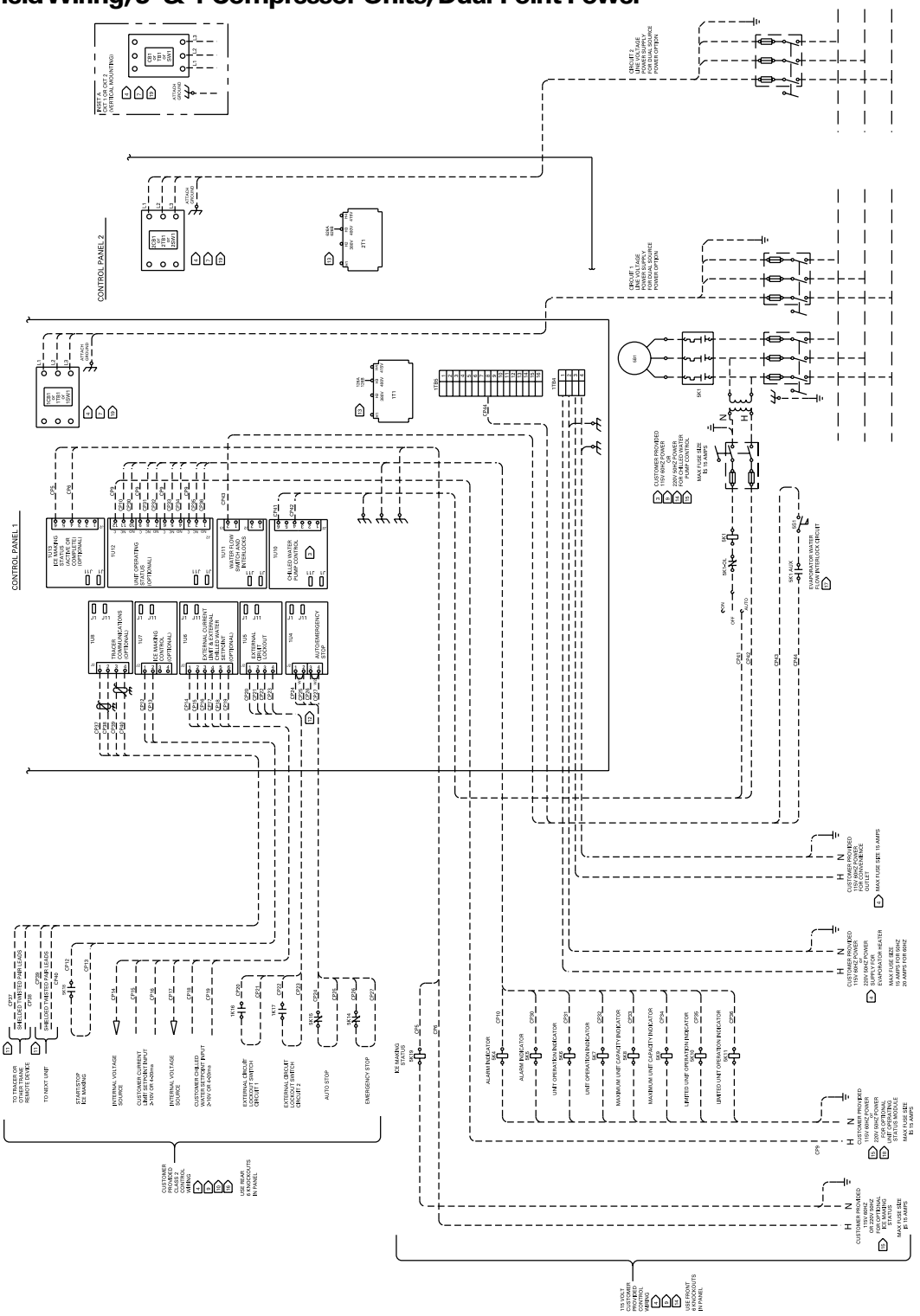
REPLACEMENT FUSE SIZES

| FUSE PROTECT FUNCTION | UNIT SIZE | UNIT VOLTAGE | DESIGNATION | VOLTS | | AMPS |
|---|---|---|---|---|---|---|
| CONDENSER FANS | 250 TO 500 | ALL | 1F1-1F6/1F23-1F28/2F7-2F12/2F23-2F28 | 600 | CLASS | 40 |
| CONTROL POWER TRANSFORMER PRIMARY | | 200/60 | 1F13,1F14/2F13,2F14 | | | 6.25 |
| | | 230/60 | | | CC | 6 |
| | | 380/60 | | | | 3.5 |
| | | 460/60 | | | | 5 |
| | | 575/60 | | | | 4 |
| | | 400/50 | | | | 5 |
| CONTROL POWER TRANSFORMER 115 VOLT SEC. | | ALL | 1F15/2F15 | | | 10 |
| CONTROL POWER TRANSFORMER 24 VOLT SEC. | | ALL | 1F16/2F16 | | | 5 |
| INVERTER DRIVE AND OR INVERTER TRANSFORMER PRI. | | 380/60 | 1F17-1F22/2F17-2F22 | | | 9 |
| | | 460/60,400/50 | | | | 10 |
| | | 575/60 | | | | 6.25 |

# Electrical Data and Connection

## Typical Wiring Diagram

### Field Wiring, 3- & 4-Compressor Units, Dual-Point Power



# Electrical Data and Connection

## Typical Wiring Diagram

## Field Wiring Notes, 3- & 4-Compressor Units, Single-Point Power

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.

3 CAUTION-TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.

4 THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.

LOW VOLTAGE OPTIONS (CLASS 2)

TRACER COMMUNICATION INTERFACE

ICE MAKING START/STOP

EXTERNAL CURENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT

115 VOLT OPTIONS FOR 60HZ, OR 220 VOLT OPTIONS FOR 50HZ.

ICE MAKING STATUS
UNIT OPERATING STATUS MODULE
EVAPORATOR HEATER (FREEZE PROTECTION). STANDARD WITH UNIT MOUNTED EVAPORATOR. NOT USED WITH REMOTE EVAPORATOR OPTION.
CONVENIENCE OUTLET IS AVAILABLE ONLY ON 60HZ UNITS.

19 LINE VOLTAGE OPTIONS

SINGLE OR DUAL SOURCE POWER MAY BE SPECIFIED. THIS DRAWING COVERS THE SINGLE SOURCE POWER OPTION.

WHEN SINGLE SOURCE POWER IS SPECIFIED AN ADDITIONAL PANEL IS PROVIDED FOR FIELD POWER WIRING. THIS PANEL IS AVAILABLE ONLY WITH TERMINAL BLOCKS OR LUGS. IN THIS CASE CONTROL PANELS 1 AND 2 ARE ALWAYS PROVIDED WITH A SINGLE HACR TYPE CIRCUIT BREAKER.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.

7 ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN ON DRAWING 2309-2246.

9 ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.

10 DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000FT

11 SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.

12 THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.

13 AS SHIPPED THE NORMAL 400 VOLT UNIT CONTROL POWER TRANSFORMERS ARE WIRED ON THE 400 VOLT TAP (H3). TRANSFORMER LEADS 126A & 126B SHOULD BE RECONNECTED TO THE APPROPRIATE TAP FOR THE 380 (H2) OR 415 (H4) VOLT POWER SUPPLIES.

14 GROUND ALL CUSTOMER PROVIDED 115 VOLT POWER SUPPLIES AS REQUIRED BY CODES. GREEN GROUND SCREWS ARE PROVIDED IN THE UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

15 UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS & THE ICE MAKING STATUS RELAY (1U10, 1U12, & 1U13) ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS. THE MAX FUSE SIZE FOR ANY OF THESE CIRCUITS IS 15 AMPS.

16 CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.

17 FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.

18 THE FIELD PROVIDED INDICATORS MAY BE RELAYS (AS SHOWN), LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

**⚠ WARNING**

**Hazardous Voltage!**

**Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.**

**CAUTION**

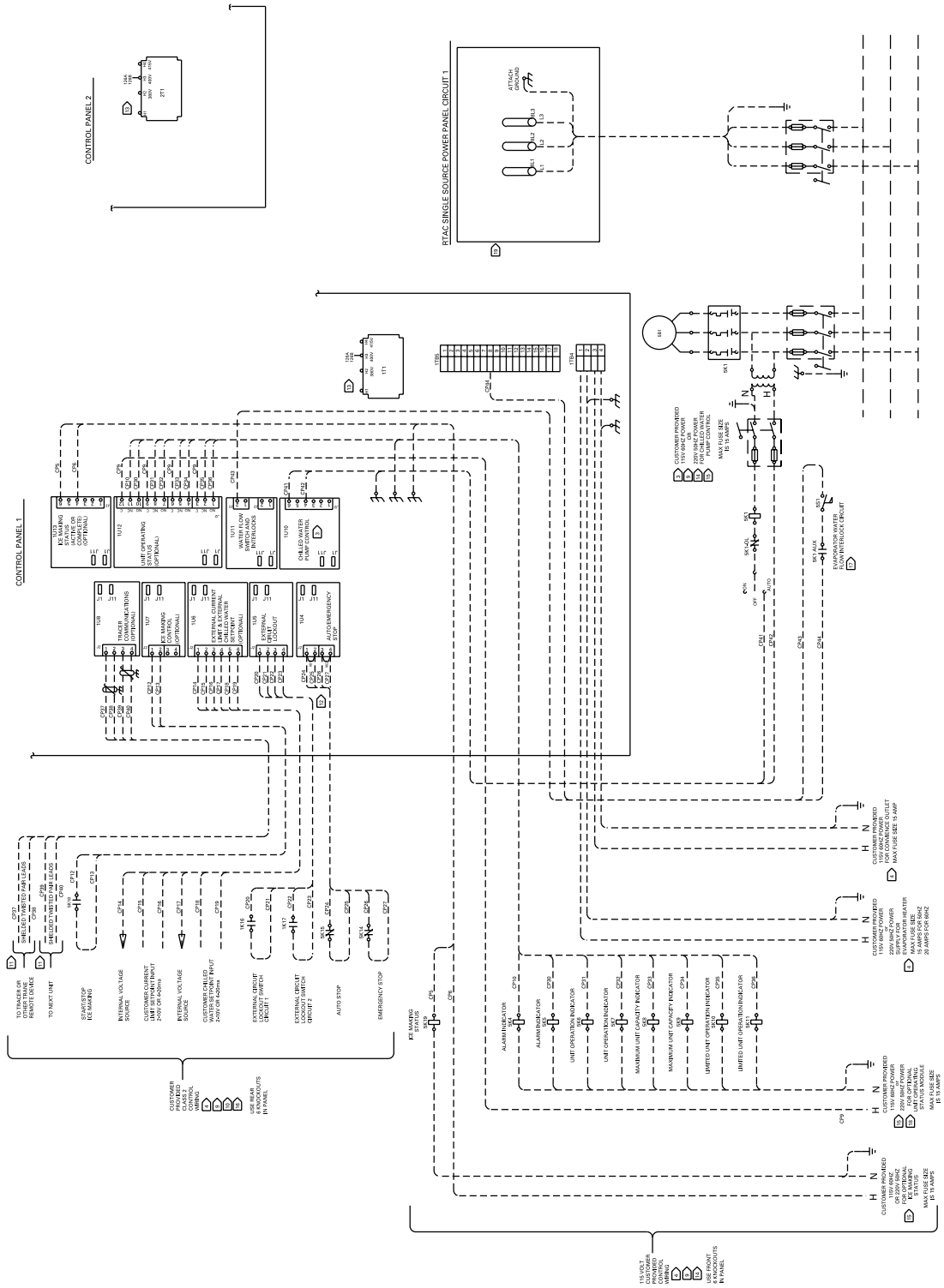
**Use Copper Conductors Only!**

**Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.**

REPLACEMENT FUSE SIZES

| FUSE PROTECT FUNCTION | UNIT SIZE | UNIT VOLTAGE | DESIGNATION | VOLTS | CLASS | AMPS |
|---|---|---|---|---|---|---|
| CONDENSER FANS | 250 TO 500 | ALL | 1F1-1F6/1F23-1F28/2F7-2F12/2F23-2F28 | 600 | R | 40 |
| CONTROL POWER TRANSFORMER PRIMARY | | 200/60 | 1F13,1F14/2F13,2F14 | | CC | 6.25 |
| | | 230/60 | | | | 6 |
| | | 380/60 | | | | 3.5 |
| | | 460/60 | | | | 5 |
| | | 575/60 | | | | 4 |
| | | 400/50 | | | | 5 |
| CONTROL POWER TRANSFORMER 115 VOLT SEC. | | ALL | 1F15/2F15 | | | 10 |
| CONTROL POWER TRANSFORMER 24 VOLT SEC. | | ALL | 1F16/2F16 | | | 5 |
| INVERTER DRIVE AND OR INVERTER TRANSFORMER PRI. | | 380/60 | 1F17-1F22/2F17-2F22 | | | 9 |
| | | 460/60,400/50 | | | | 10 |
| | | 575/60 | | | | 6.25 |

### Field Wiring, 3- & 4-Compressor Units, Single-Point Power



# Electrical Data and Connection

## Field Layout

## Field Layout Notes, 3- & 4-Compressor Units

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.

3 CAUTION- TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.

4 THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.

LOW VOLTAGE OPTIONAL (CLASS 2)

TRACER COMMUNICATION INTERFACE

ICE MAKING START/STOP

EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT

115 VOLT OPTIONS FOR 60HZ UNITS, OR 220 VOLT OPTIONS FOR 50HZ.

ICE MAKING STATUS

UNIT OPERATING STATUS MODULE

EVAPORATOR HEATER (FREEZE PROTECTION). STANDARD WITH UNIT MOUNTED EVAPORATOR. NOT USED WITH REMOTE EVAPORATOR OPTION.

CONVENIENCE OUTLET OPTION IS AVAILABLE ONLY ON 60HZ UNITS.

19 LINE VOLTAGE OPTIONS

SINGLE OR DUAL SOURCE POWER MAY BE SPECIFIED

WHEN SINGLE SOURCE POWER IS SPECIFIED AN ADDITIONAL PANEL IS PROVIDED FOR FIELD POWER WITING. THIS PANEL IS AVAILABLE ONLY WITH TERMINAL BLOCKS OR LUGS. IN THIS CASE CONTROL PANELS 1 AND 2 ARE ALWAYS PROVIDED WITH A SINGLE HACR TYPE CIRCUIT BREAKER.

WHEN DUAL SOURCE POWER IS SPECIFIED CUSTOMER POWER WIRING CONNECTIONS ARE MADE TO CIRCUIT 1 (CONTROL PANEL 1) AND TO CIRCUIT 2 (CONTROL PANEL 2). AVAILABLE OPTIONS IN PANELS 1 & 2 FOR CUSTOMER WIRING TERMINATION INCLUDE TERMINAL BLOCKS, DISCONNECT SWITCHES OR HACR TYPE CIRCUIT BREAKERS. (TB, SW, CB).

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES.
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.

7 ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN ON DRAWING 2309-2246.

9 ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.

10 DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT.

11 SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.

12 THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF IF REMOTE CONTROL IS DESIRED REMOVE THE NOTED JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.

13 FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED. THE MAX FUSE SIZE FOR EVAPORATOR HEATER IS 20 AMPS ON 115 VOLT 60HZ PRODUCTS AND 15 AMPS ON 220 VOLT 50 HZ PRODUCTS. THE MAX FUSE SIZE FOR ALL OTHER FIELD PROVIDED CIRCUITS IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

14 UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ, CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.

15 CUSTOMER SUPPLIED CONTACTS FOR ALL CLASS 2 CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.

16 FLOW SWITCH & INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1 mA CIRCUIT OR A 220 VOLT 2 mA CIRCUIT.

17 THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE INDICATOR FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. SEE IOM FOR DETAILS. DEFAULT FUNCTIONS ARE SHOWN.

THE NORMALLY OPEN CONTACTS ON EACH RELAY OPERATE AS FOLLOWS:
CONTACTS TO THE ALARM INDICATOR CLOSE ON A UNIT MALFUNCTION.
CONTACTS TH THE UNIT OPERATION INDICATOR CLOSE WHEN ANY COMPRESSOR IS RUNNING.
CONTACTS TO THE MAX UNIT CAPACITY INDICATOR CLOSE WHEN ALL UNIT COMPRESSORS ARE FULLY LOADED.
CONTACTS TO THE LIMITED UNIT OPERATION INDICATOR CLOSE IF NORMAL UNIT OPERATION IS RESTRICTED BY SOME OPERATING PARAMETER.

**⚠ WARNING**

**Hazardous Voltage!**

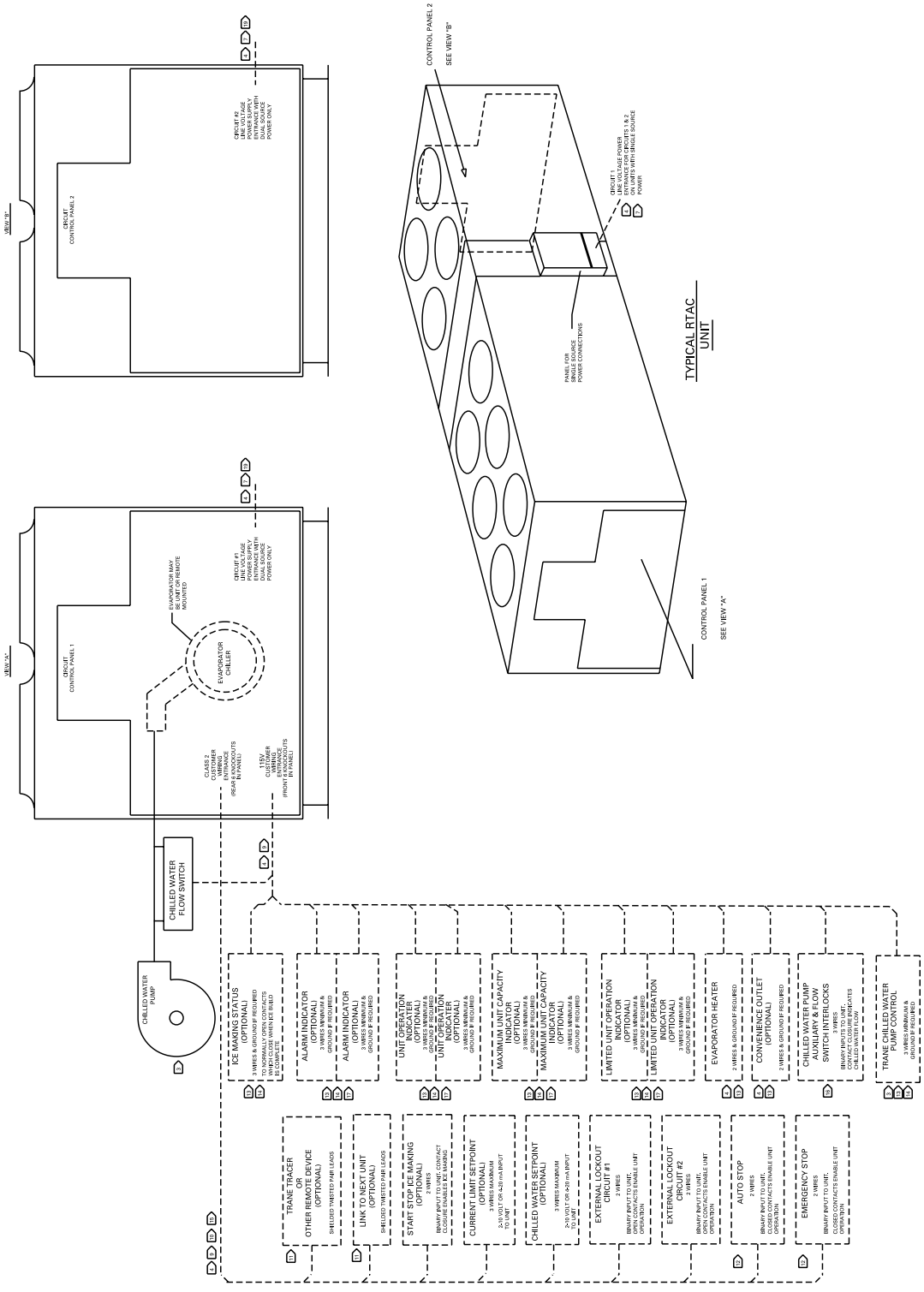
**Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.**

**CAUTION**

**Use Copper Conductors Only!**

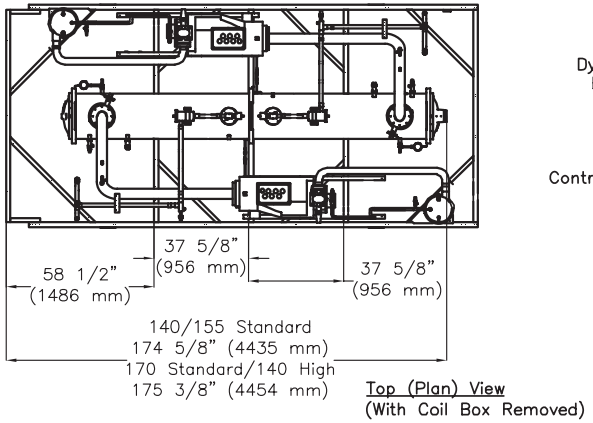
**Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.**

## Field Layout, 3- & 4-Compressor Units

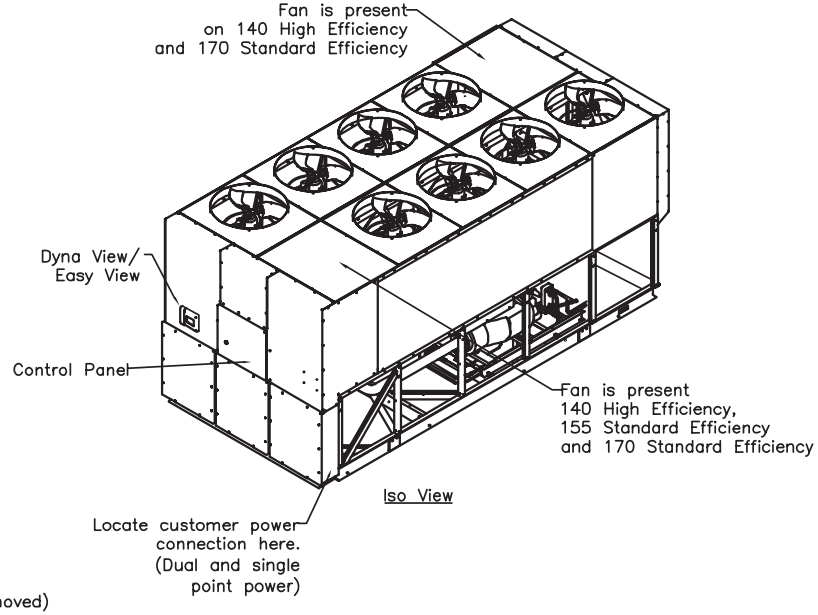


140 Standard 50/60
155 Standard 50/60
170 Standard 50/60
140 High 50/60

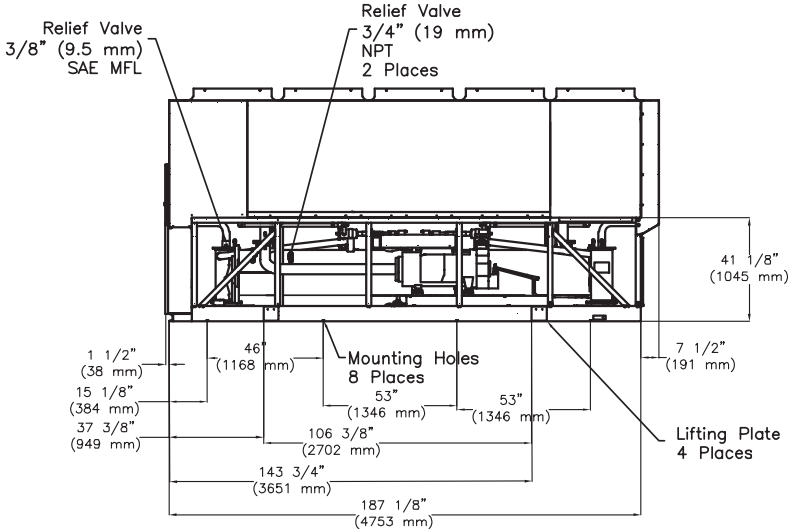
Mounting Hole Diameter: 3/4" (19.1 mm)
Water Connection Diameter:
140 Standard 50/60Hz and 155 Standard 50/60Hz – 4" (102 mm)
140 High 50/60Hz and 170 Standard 50/60 Hz – 6" (152 mm)
Llfting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)



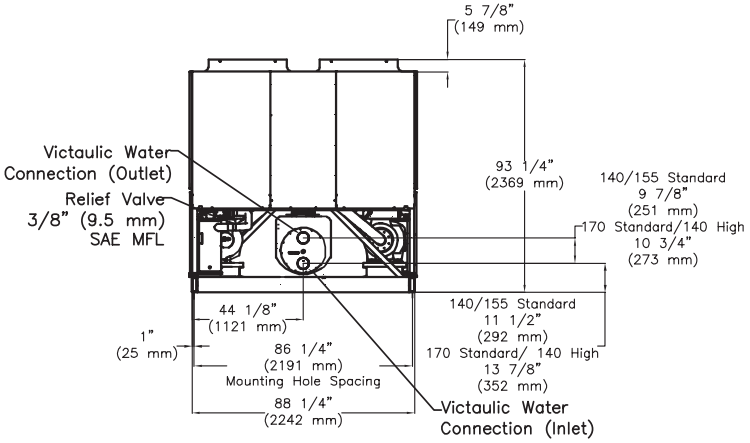

Top (Plan) View
(With Coil Box Removed)




Iso View




Side View




Back View

Note:
Add 2" (51mm) to overall width for louvered panels and coil protection.

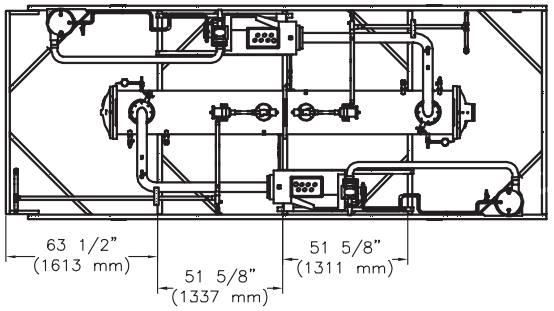
Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances. Tube pull clearances are given in submittals and the Installation, Operation and Maintenance manual.

# Dimensions

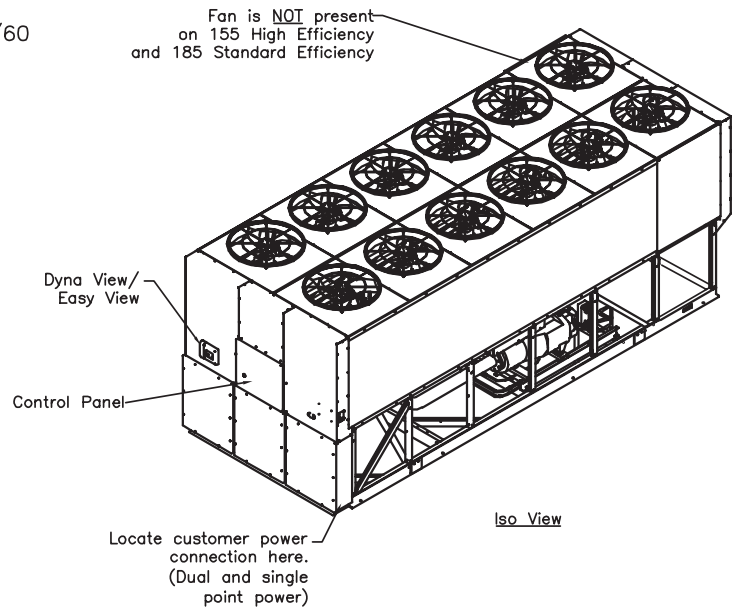
# Dimensions

155 High 50/60
185 Standard 50/60
170 High 50/60
200 Standard 50/60

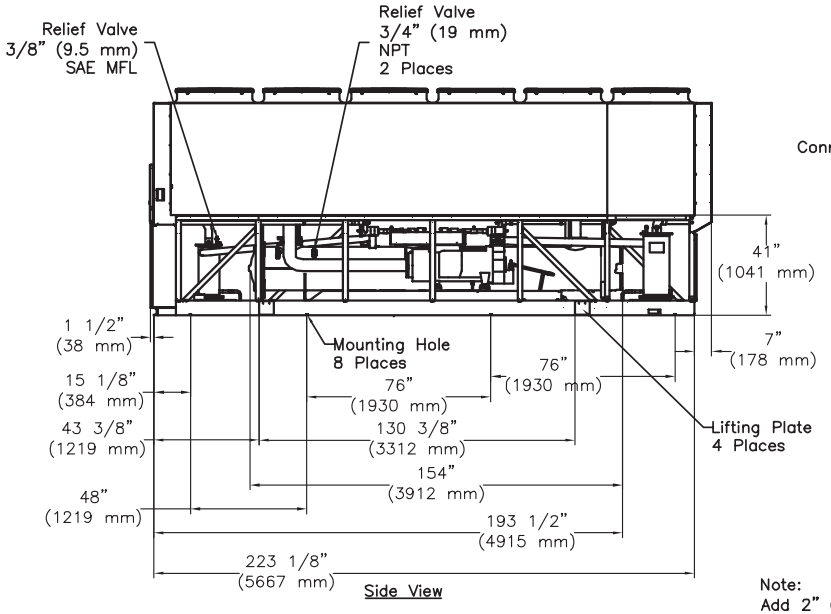
Mounting Hole Diameter: 3/4" (19.1 mm)
Water Connection Diameter: 6" (152 mm)
LIfting Plate Dimensions: 7 1/2" x 6"
(191mm x 152mm)



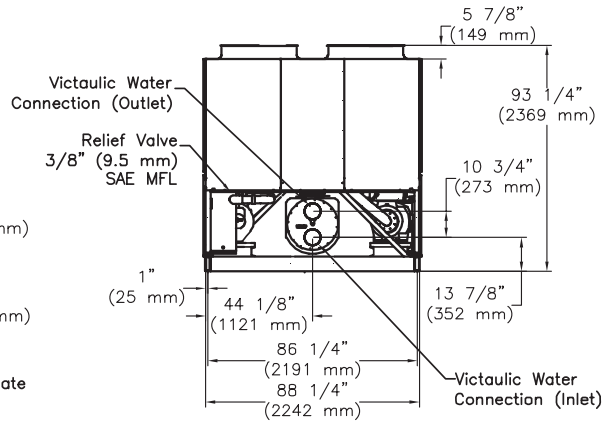

Top (Plan) View
(With Coil Box Removed)




Iso View




Side View

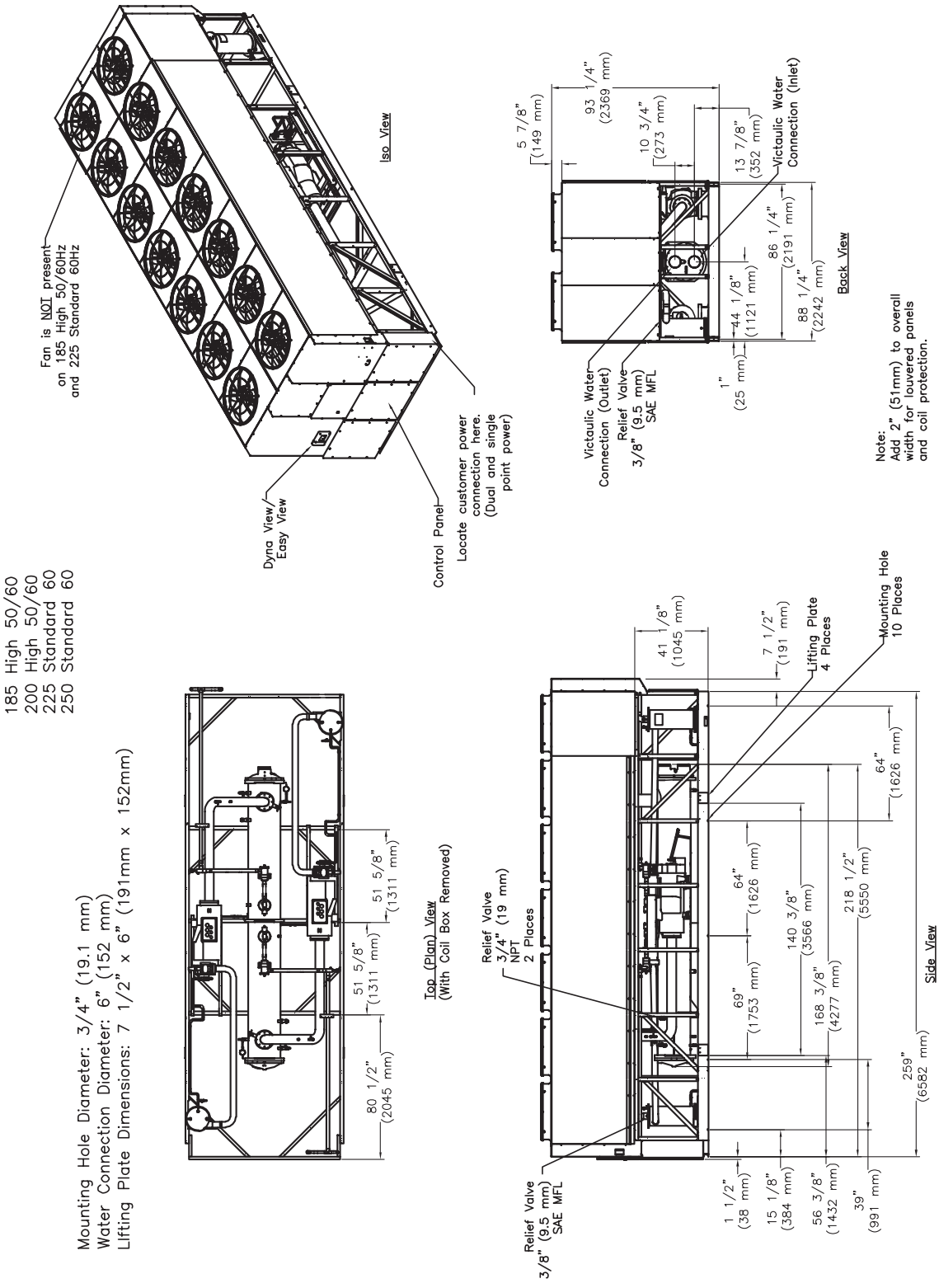



Back View

Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances. Tube pull clearances are given in submittals and the Installation, Operation and Maintenance manual.

Note:
Add 2" (51mm) to overall width for louvered panels and coil protection.

# Dimensions

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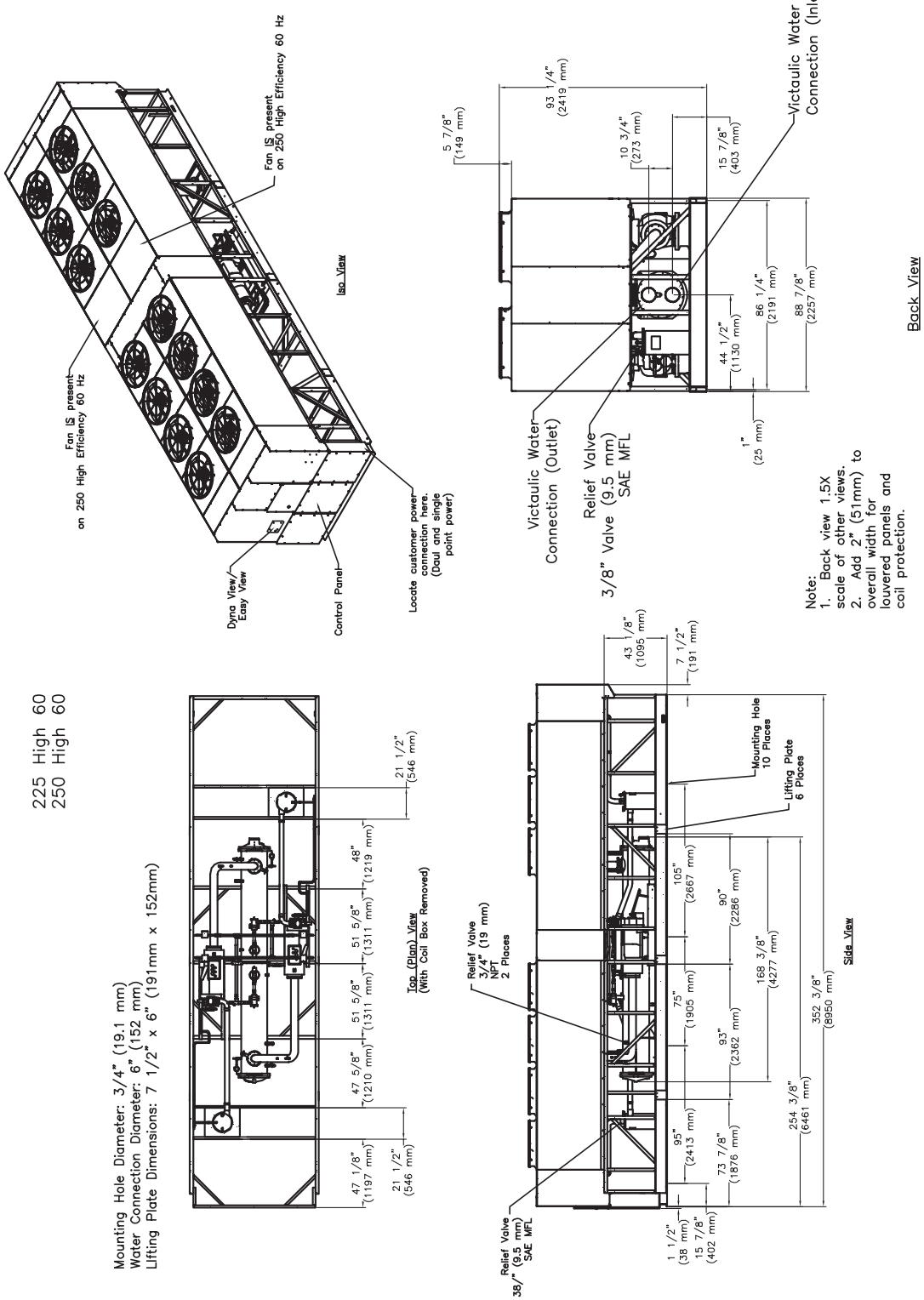


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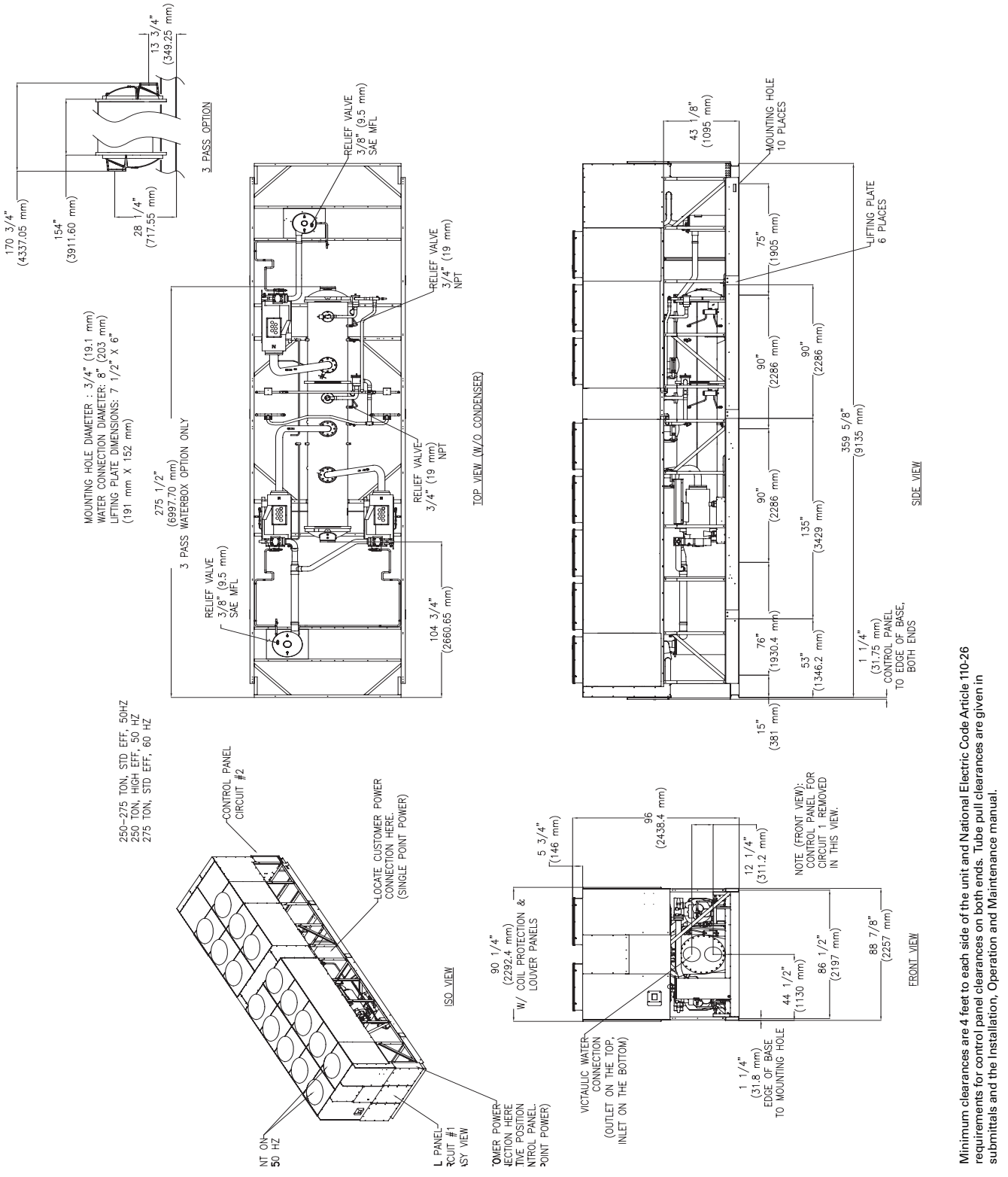
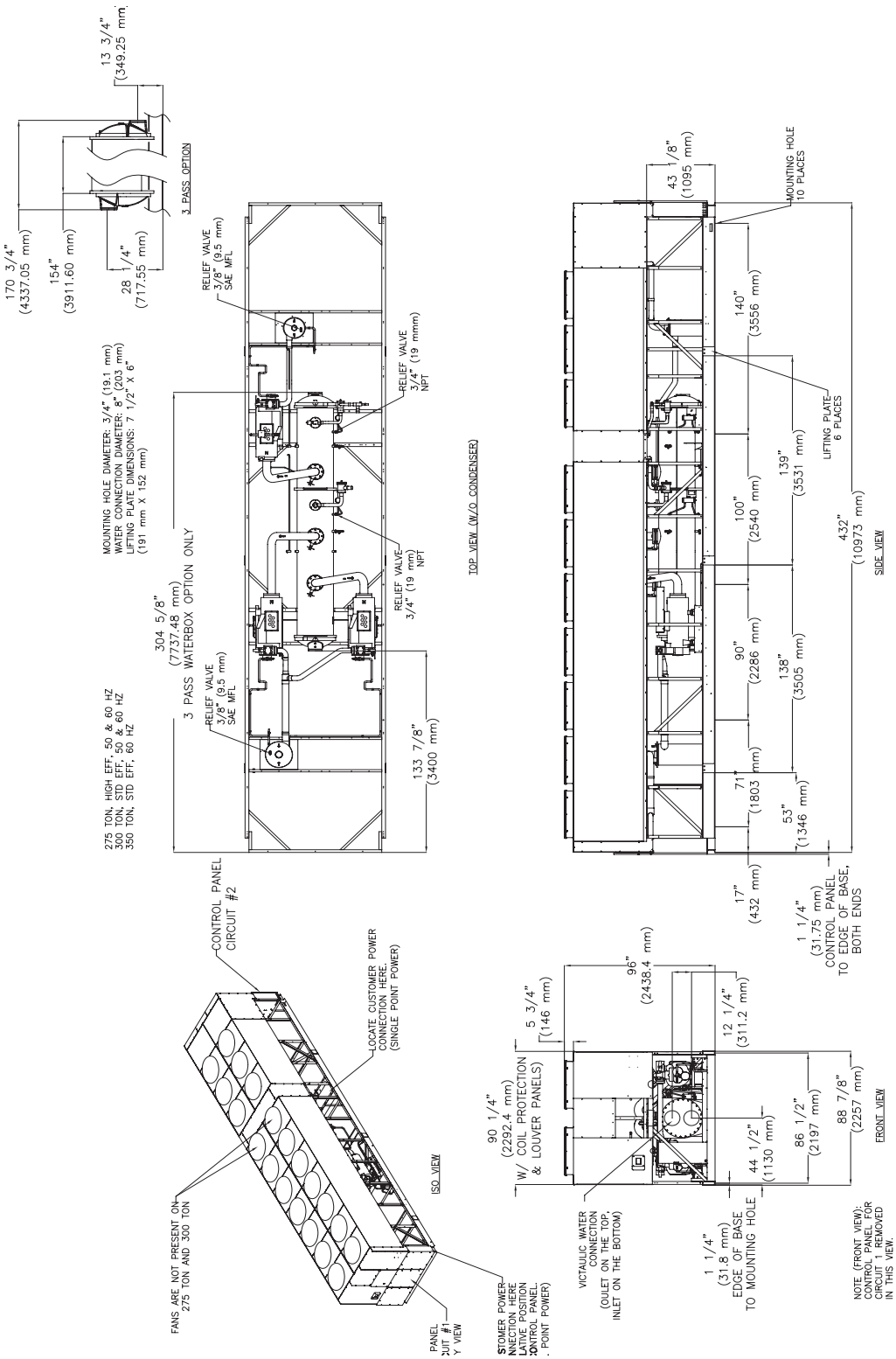



Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends. Tube pull clearances are given in submittals and the Installation, Operation and Maintenance manual.

# Dimensions

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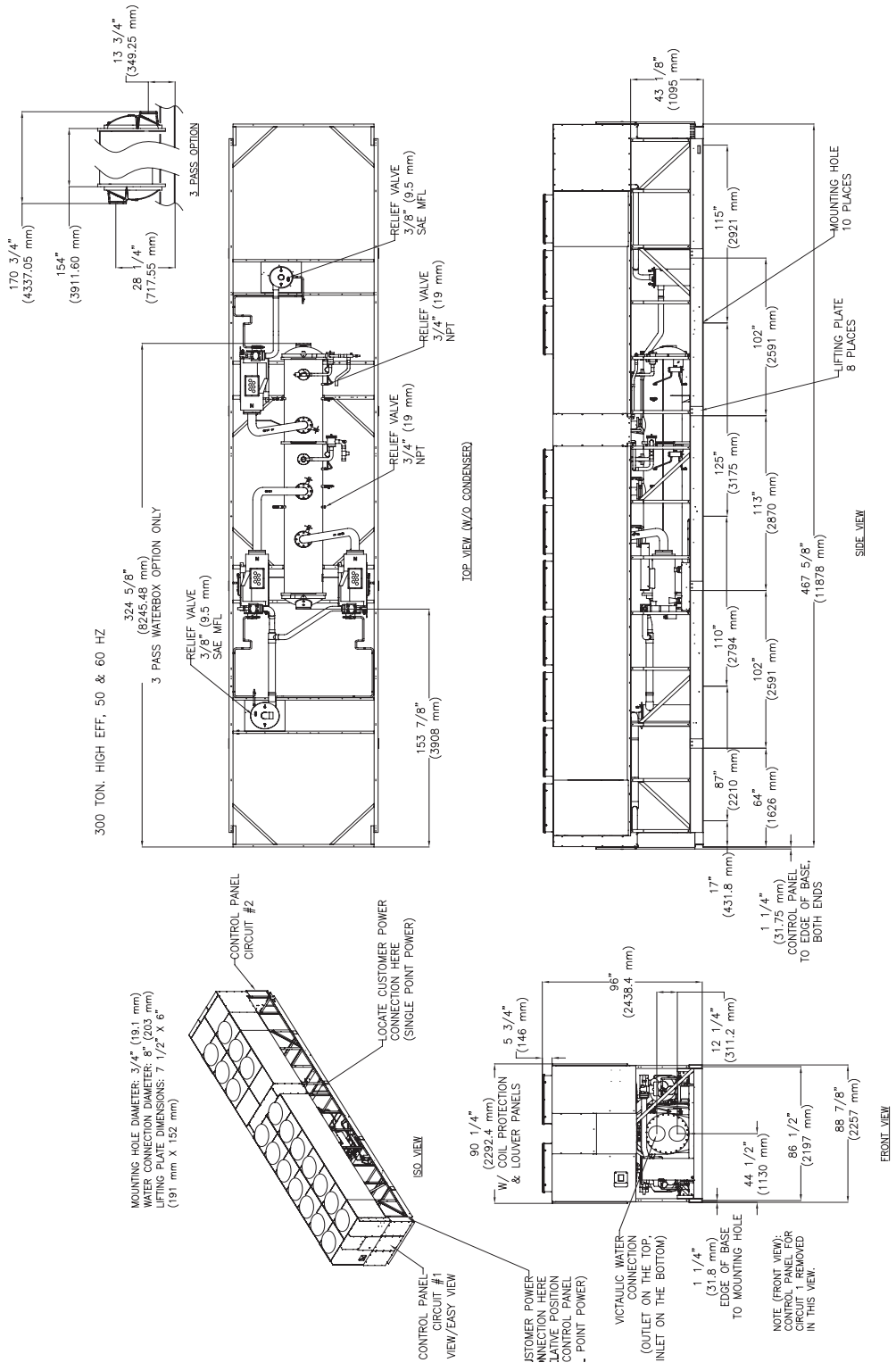


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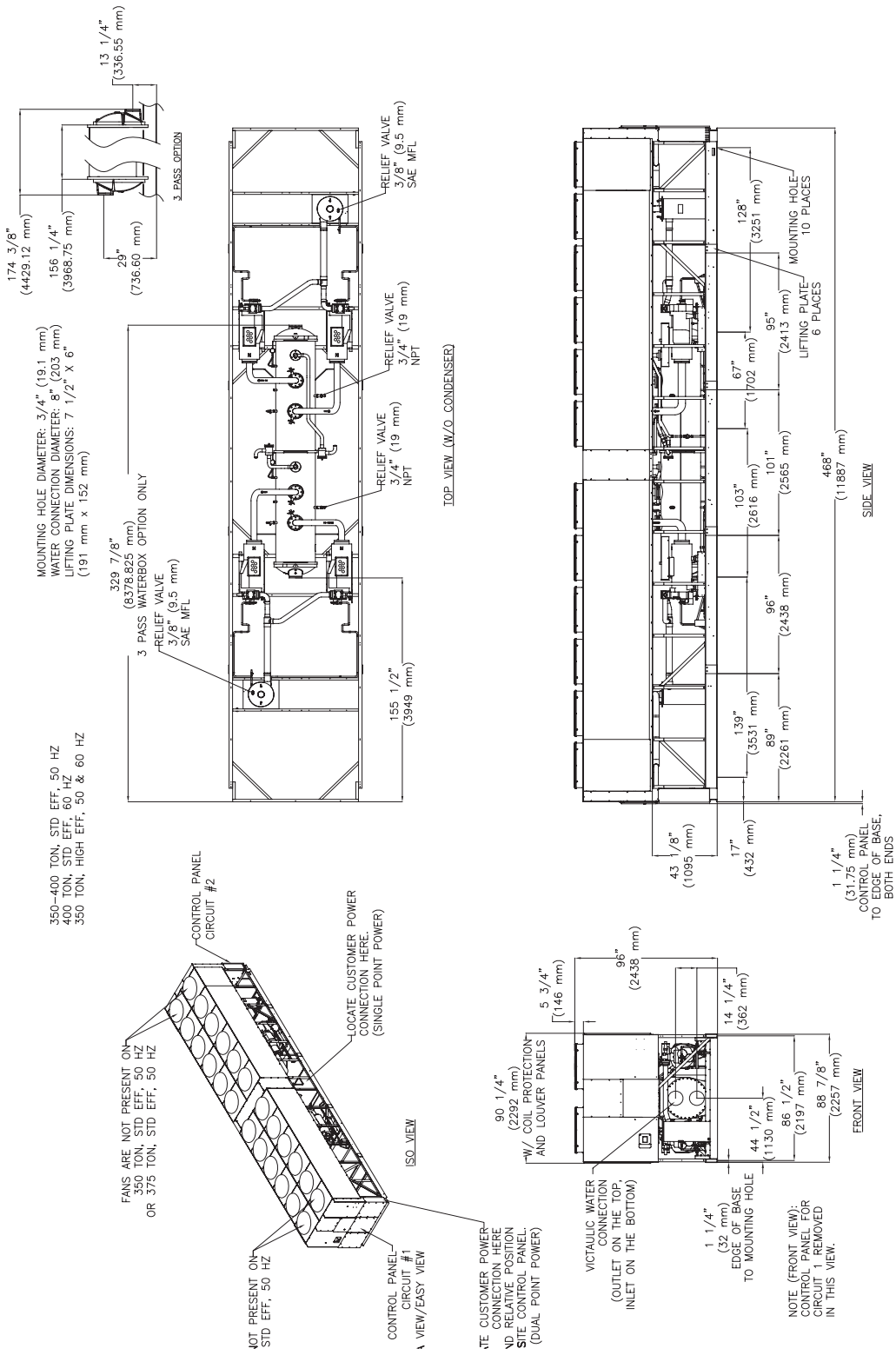


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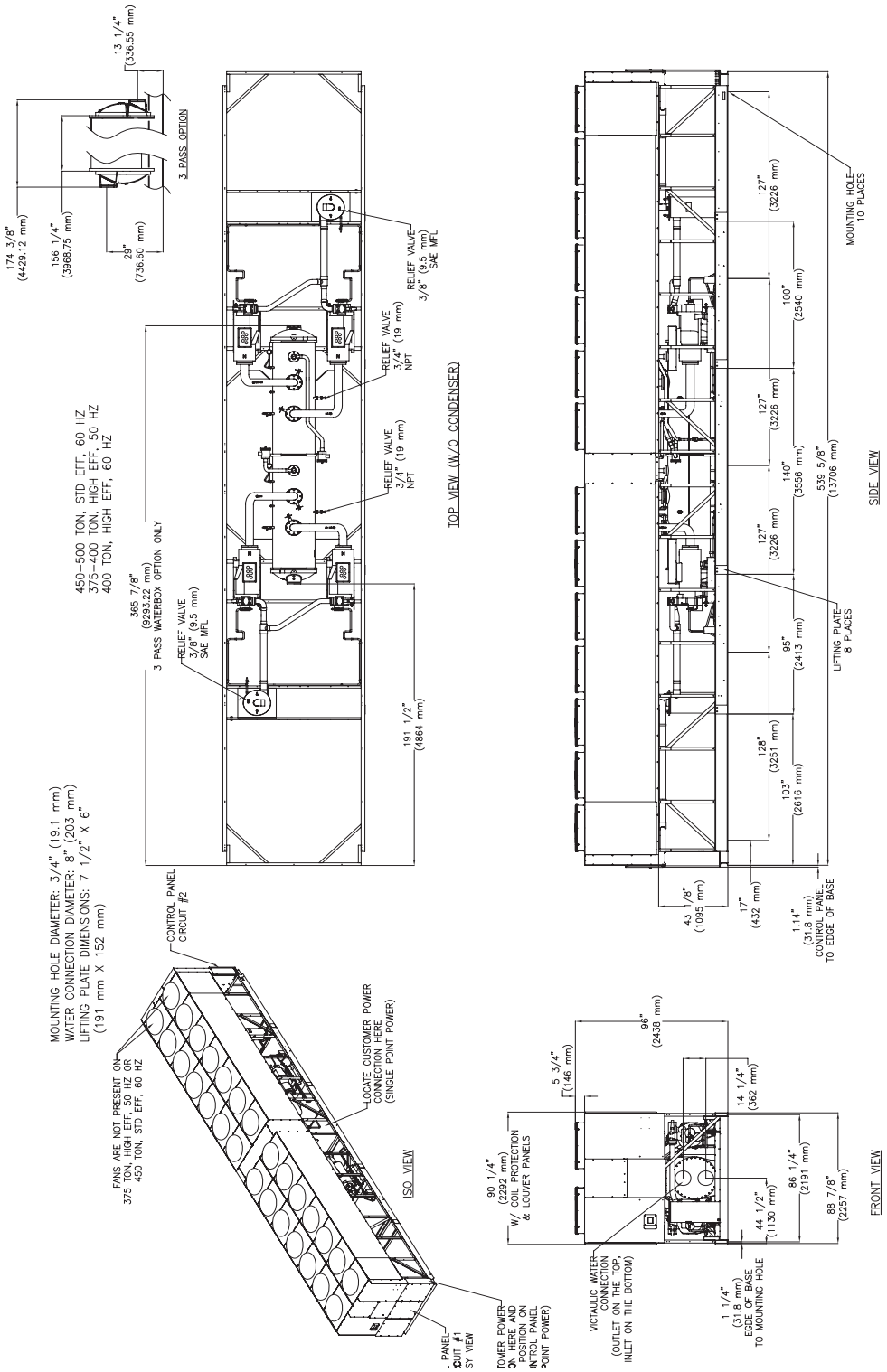


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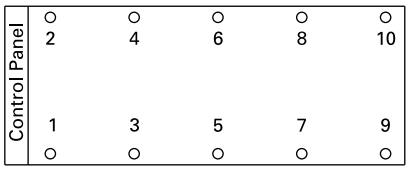
# Weights

***Table W-1. Aluminum fin unit weights (60 Hz units)***

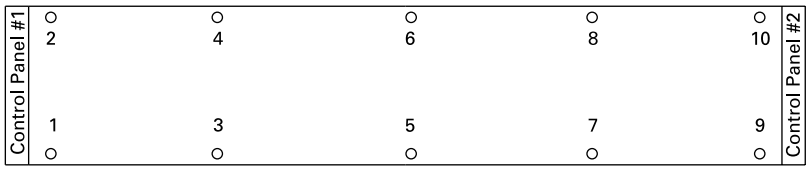
| Unit Size | Units | Isolator Location | | | | | | | | | | Operating Weight | Shipping Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| RTAC 140 STD | lbs. | 1384 | 1431 | 1363 | 1410 | 1340 | 1387 | 1317 | 1364 | n/a | n/a | 10995 | 10752 |
| | kg | 628 | 649 | 618 | 640 | 608 | 629 | 597 | 619 | n/a | n/a | 4987 | 4877 |
| RTAC 140 HIGH | lbs. | 1390 | 1437 | 1370 | 1418 | 1348 | 1395 | 1326 | 1373 | n/a | n/a | 11057 | 10780 |
| | kg | 630 | 652 | 622 | 643 | 611 | 633 | 601 | 623 | n/a | n/a | 5015 | 4890 |
| RTAC 155 STD | lbs. | 1389 | 1434 | 1369 | 1414 | 1346 | 1391 | 1323 | 1368 | n/a | n/a | 11034 | 10769 |
| | kg | 630 | 650 | 621 | 641 | 611 | 631 | 600 | 621 | n/a | n/a | 5005 | 4885 |
| RTAC 155 HIGH | lbs. | 1578 | 1630 | 1545 | 1598 | 1494 | 1547 | 1443 | 1496 | n/a | n/a | 12332 | 12038 |
| | kg | 716 | 740 | 701 | 725 | 678 | 702 | 655 | 679 | n/a | n/a | 5594 | 5460 |
| RTAC 170 STD | lbs. | 1391 | 1439 | 1372 | 1420 | 1350 | 1398 | 1328 | 1375 | n/a | n/a | 11073 | 10796 |
| | kg | 631 | 653 | 622 | 644 | 612 | 634 | 602 | 624 | n/a | n/a | 5023 | 4897 |
| RTAC 170 HIGH | lbs. | 1586 | 1641 | 1555 | 1610 | 1504 | 1559 | 1454 | 1509 | n/a | n/a | 12418 | 12098 |
| | kg | 719 | 744 | 705 | 730 | 682 | 707 | 660 | 685 | n/a | n/a | 5633 | 5488 |
| RTAC 185 STD | lbs. | 1642 | 1662 | 1608 | 1628 | 1553 | 1574 | 1499 | 1520 | n/a | n/a | 12685 | 12391 |
| | kg | 745 | 754 | 729 | 738 | 705 | 714 | 680 | 689 | n/a | n/a | 5754 | 5621 |
| RTAC 185 HIGH | lbs. | 1409 | 1513 | 1395 | 1499 | 1370 | 1475 | 1348 | 1452 | 1325 | 1429 | 14214 | 13897 |
| | kg | 639 | 686 | 633 | 680 | 622 | 669 | 611 | 659 | 601 | 648 | 6447 | 6304 |
| RTAC 200 STD | lbs. | 1663 | 1717 | 1636 | 1690 | 1593 | 1648 | 1551 | 1606 | n/a | n/a | 13104 | 12784 |
| | kg | 754 | 779 | 742 | 767 | 723 | 748 | 704 | 728 | n/a | n/a | 5944 | 5799 |
| RTAC 200 HIGH | lbs. | 1487 | 1537 | 1468 | 1519 | 1435 | 1486 | 1405 | 1456 | 1375 | 1425 | 14593 | 14247 |
| | kg | 674 | 697 | 666 | 689 | 651 | 674 | 637 | 660 | 623 | 646 | 6619 | 6462 |
| RTAC 225 STD | lbs. | 1483 | 1554 | 1466 | 1536 | 1435 | 1505 | 1406 | 1477 | 1378 | 1448 | 14687 | 14370 |
| | kg | 673 | 705 | 665 | 697 | 651 | 683 | 638 | 670 | 625 | 657 | 6662 | 6518 |
| RTAC 225 HIGH | lbs. | 1631 | 1674 | 1618 | 1661 | 1597 | 1640 | 1581 | 1624 | 1557 | 1601 | 16184 | 15838 |
| | kg | 740 | 759 | 734 | 753 | 724 | 744 | 717 | 737 | 706 | 726 | 7341 | 7184 |
| RTAC 250 STD | lbs. | 1510 | 1561 | 1493 | 1543 | 1461 | 1512 | 1433 | 1483 | 1404 | 1454 | 14853 | 14507 |
| | kg | 685 | 708 | 677 | 700 | 663 | 686 | 650 | 673 | 637 | 660 | 6737 | 6580 |
| RTAC 250 HIGH | lbs. | 1651 | 1676 | 1639 | 1664 | 1619 | 1644 | 1603 | 1629 | 1581 | 1607 | 16314 | 15968 |
| | kg | 749 | 760 | 743 | 755 | 734 | 746 | 727 | 739 | 717 | 729 | 7400 | 7243 |
| RTAC 275 STD | lbs. | 2168 | 1915 | 2124 | 1877 | 2072 | 1860 | 2052 | 1767 | 1976 | 1723 | 19536 | 18876 |
| | kg | 984 | 870 | 964 | 852 | 941 | 844 | 932 | 802 | 897 | 782 | 8869 | 8570 |
| RTAC 275 HIGH | lbs. | 2060 | 1819 | 2124 | 1877 | 2191 | 1950 | 2272 | 2083 | 2385 | 2183 | 20944 | 20266 |
| | kg | 935 | 826 | 964 | 852 | 995 | 885 | 1031 | 946 | 1083 | 991 | 9509 | 9201 |
| RTAC 300 STD | lbs. | 2163 | 1926 | 2188 | 1952 | 2220 | 1984 | 2256 | 2019 | 2324 | 2070 | 21103 | 20544 |
| | kg | 982 | 875 | 993 | 886 | 1008 | 901 | 1024 | 917 | 1055 | 940 | 9581 | 9327 |
| RTAC 300 HIGH | lbs. | 2382 | 2137 | 2381 | 2110 | 2347 | 2077 | 2309 | 2039 | 2274 | 2004 | 22060 | 22508 |
| | kg | 1081 | 970 | 1081 | 958 | 1066 | 943 | 1048 | 926 | 1032 | 910 | 10015 | 10219 |
| RTAC 350 STD | lbs. | 2134 | 1897 | 2203 | 1967 | 2291 | 2055 | 2389 | 2153 | 2526 | 2290 | 21904 | 21450 |
| | kg | 969 | 861 | 1000 | 893 | 1040 | 933 | 1085 | 977 | 1147 | 1040 | 9945 | 9738 |
| RTAC 350 HIGH | lbs. | 2637 | 2619 | 2525 | 2507 | 2442 | 2424 | 2389 | 2370 | 2284 | 2290 | 24487 | 23803 |
| | kg | 1197 | 1189 | 1146 | 1138 | 1109 | 1100 | 1085 | 1076 | 1037 | 1040 | 11117 | 10806 |
| RTAC 400 STD | lbs. | 2734 | 2748 | 2657 | 2636 | 2574 | 2554 | 2521 | 2500 | 2418 | 2412 | 25754 | 25074 |
| | kg | 1241 | 1248 | 1206 | 1197 | 1169 | 1160 | 1145 | 1135 | 1098 | 1095 | 11692 | 11383 |
| RTAC 400 HIGH | lbs. | 2734 | 2695 | 2763 | 2719 | 2787 | 2744 | 2812 | 2768 | 2836 | 2792 | 27650 | 26913 |
| | kg | 1241 | 1224 | 1254 | 1234 | 1265 | 1246 | 1277 | 1257 | 1288 | 1268 | 12553 | 12219 |
| RTAC 450 STD | lbs. | 2751 | 2751 | 2694 | 2694 | 2637 | 2637 | 2581 | 2581 | 2524 | 2524 | 26373 | 25678 |
| | kg | 1249 | 1249 | 1223 | 1223 | 1197 | 1197 | 1172 | 1172 | 1146 | 1146 | 11973 | 11658 |
| RTAC 500 STD | lbs. | 2753 | 2709 | 2777 | 2734 | 2802 | 2758 | 2826 | 2782 | 2850 | 2807 | 27798 | 27056 |
| | kg | 1250 | 1230 | 1261 | 1241 | 1272 | 1252 | 1283 | 1263 | 1294 | 1274 | 12620 | 12283 |

Notes:
1. Operating weight includes refrigerant and water.
2. Shipping weight includes refrigerant.
3. All weights +/- 3%.

Unit Top (Plan) View




Unit Top (Plan) View



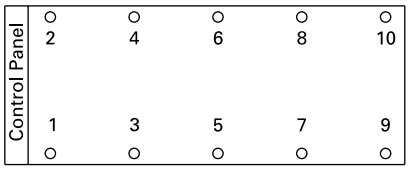
# Weights

***Table W-1. Aluminum fin unit weights (50 Hz units)***

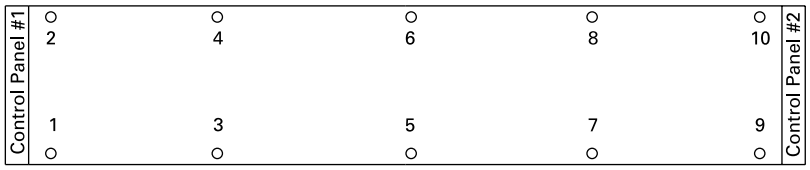
| | | Isolator Location | | | | | | | | | | Operating | Shipping |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Size | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Weight | Weight |
| RTAC 140 STD | lbs. | 1386 | 1433 | 1366 | 1413 | 1343 | 1390 | 1320 | 1367 | n/a | n/a | 11015 | 10772 |
| | kg | 629 | 650 | 619 | 641 | 609 | 630 | 599 | 620 | n/a | n/a | 4996 | 4886 |
| RTAC 140 HIGH | lbs. | 1392 | 1439 | 1373 | 1420 | 1351 | 1398 | 1329 | 1376 | n/a | n/a | 11077 | 10800 |
| | kg | 631 | 653 | 623 | 644 | 613 | 634 | 603 | 624 | n/a | n/a | 5025 | 4899 |
| RTAC 155 STD | lbs. | 1450 | 1447 | 1429 | 1425 | 1404 | 1400 | 1379 | 1375 | n/a | n/a | 11309 | 11044 |
| | kg | 658 | 656 | 648 | 646 | 637 | 635 | 626 | 624 | n/a | n/a | 5130 | 5010 |
| RTAC 155 HIGH | lbs. | 1634 | 1638 | 1607 | 1611 | 1564 | 1569 | 1522 | 1526 | n/a | n/a | 12671 | 12377 |
| | kg | 741 | 743 | 729 | 731 | 710 | 712 | 690 | 692 | n/a | n/a | 5748 | 5614 |
| RTAC 170 STD | lbs. | 1446 | 1492 | 1434 | 1481 | 1421 | 1468 | 1408 | 1454 | n/a | n/a | 11603 | 11326 |
| | kg | 656 | 677 | 650 | 672 | 644 | 666 | 638 | 660 | n/a | n/a | 5263 | 5137 |
| RTAC 170 HIGH | lbs. | 1647 | 1702 | 1619 | 1674 | 1575 | 1630 | 1531 | 1586 | n/a | n/a | 12962 | 12642 |
| | kg | 747 | 772 | 734 | 759 | 714 | 739 | 694 | 719 | n/a | n/a | 5880 | 5734 |
| RTAC 185 STD | lbs. | 1664 | 1722 | 1630 | 1688 | 1576 | 1634 | 1522 | 1580 | n/a | n/a | 13015 | 12721 |
| | kg | 755 | 781 | 739 | 766 | 715 | 741 | 690 | 717 | n/a | n/a | 5904 | 5770 |
| RTAC 185 HIGH | lbs. | 1458 | 1542 | 1445 | 1529 | 1422 | 1505 | 1400 | 1484 | 1379 | 1462 | 14624 | 14307 |
| | kg | 661 | 699 | 655 | 693 | 645 | 683 | 635 | 673 | 625 | 663 | 6633 | 6490 |
| RTAC 200 STD | lbs. | 1677 | 1732 | 1651 | 1706 | 1610 | 1665 | 1569 | 1624 | n/a | n/a | 13234 | 12914 |
| | kg | 761 | 785 | 749 | 774 | 730 | 755 | 712 | 737 | n/a | n/a | 6003 | 5858 |
| RTAC 200 HIGH | lbs. | 1510 | 1561 | 1493 | 1543 | 1461 | 1512 | 1533 | 1483 | 1404 | 1454 | 14853 | 14507 |
| | kg | 685 | 708 | 677 | 700 | 663 | 686 | 695 | 673 | 637 | 660 | 6737 | 6580 |
| RTAC 250 STD | lbs. | 1941 | 1675 | 1956 | 1690 | 1973 | 1707 | 1990 | 1724 | 2005 | 1739 | 18399 | 17949 |
| | kg | 881 | 760 | 888 | 767 | 896 | 775 | 904 | 783 | 910 | 789 | 8353 | 8149 |
| RTAC 250 HIGH | lbs. | 2177 | 1911 | 2137 | 1871 | 2090 | 1823 | 2042 | 1776 | 2005 | 1739 | 19572 | 19069 |
| | kg | 988 | 868 | 970 | 849 | 949 | 828 | 927 | 806 | 910 | 790 | 8886 | 8657 |
| RTAC 275 STD | lbs. | 2343 | 2049 | 2256 | 1963 | 2154 | 1860 | 2052 | 1767 | 1976 | 1673 | 20093 | 19577 |
| | kg | 1064 | 930 | 1024 | 891 | 978 | 845 | 932 | 802 | 897 | 760 | 9122 | 8888 |
| RTAC 275 HIGH | lbs. | 2148 | 1897 | 2199 | 1963 | 2263 | 2012 | 2334 | 2083 | 2434 | 2183 | 21516 | 20920 |
| | kg | 975 | 861 | 998 | 891 | 1027 | 913 | 1060 | 946 | 1105 | 991 | 9768 | 9498 |
| RTAC 300 STD | lbs. | 2094 | 1839 | 2188 | 1880 | 2186 | 1984 | 2256 | 2019 | 2324 | 2070 | 20841 | 20157 |
| | kg | 951 | 835 | 993 | 854 | 993 | 901 | 1024 | 917 | 1055 | 940 | 9462 | 9151 |
| RTAC 300 HIGH | lbs. | 2407 | 2137 | 2381 | 2110 | 2347 | 2077 | 2309 | 2039 | 2274 | 2004 | 22086 | 21548 |
| | kg | 1093 | 970 | 1081 | 958 | 1066 | 943 | 1048 | 926 | 1033 | 910 | 10027 | 9783 |
| RTAC 350 STD | lbs. | 2529 | 2510 | 2431 | 2411 | 2358 | 2339 | 2310 | 2291 | 2220 | 2213 | 23612 | 23031 |
| | kg | 1148 | 1139 | 1103 | 1095 | 1070 | 1062 | 1049 | 1040 | 1008 | 1005 | 10720 | 10456 |
| RTAC 350 HIGH | lbs. | 2750 | 2730 | 2639 | 2619 | 2556 | 2536 | 2502 | 2483 | 2400 | 2394 | 25610 | 24936 |
| | kg | 1249 | 1240 | 1198 | 1189 | 1160 | 1151 | 1136 | 1127 | 1089 | 1087 | 11627 | 11321 |
| RTAC 375 STD | lbs. | 2766 | 2734 | 2583 | 2550 | 2447 | 2415 | 2358 | 2326 | 2189 | 2181 | 24548 | 23903 |
| | kg | 1256 | 1241 | 1172 | 1158 | 1111 | 1096 | 1071 | 1056 | 994 | 990 | 11145 | 10852 |
| RTAC 375 HIGH | lbs. | 2766 | 2734 | 2670 | 2670 | 2614 | 2614 | 2558 | 2557 | 2501 | 2501 | 26185 | 25444 |
| | kg | 1256 | 1241 | 1212 | 1212 | 1187 | 1187 | 1161 | 1161 | 1135 | 1135 | 11888 | 11552 |
| RTAC 400 STD | lbs. | 2768 | 2748 | 2657 | 2636 | 2574 | 2554 | 2521 | 2500 | 2418 | 2412 | 25788 | 25073 |
| | kg | 1257 | 1247 | 1206 | 1197 | 1169 | 1160 | 1144 | 1135 | 1098 | 1095 | 11708 | 11383 |
| RTAC 400 HIGH | lbs. | 2768 | 2695 | 2763 | 2719 | 2787 | 2744 | 2812 | 2768 | 2836 | 2792 | 27684 | 26912 |
| | kg | 1257 | 1223 | 1254 | 1235 | 1265 | 1246 | 1276 | 1257 | 1287 | 1268 | 12568 | 12218 |

Notes:
1. Operating weight includes refrigerant and water.
2. Shipping weight includes refrigerant.
3. All weights +/- 3%.

Unit Top (Plan) View




Unit Top (Plan) View



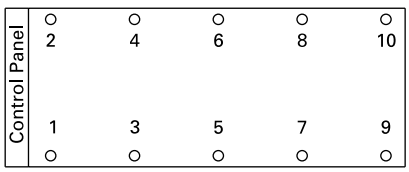
# Weights

***Table W-1. Copper fin unit weights (60 Hz units)***

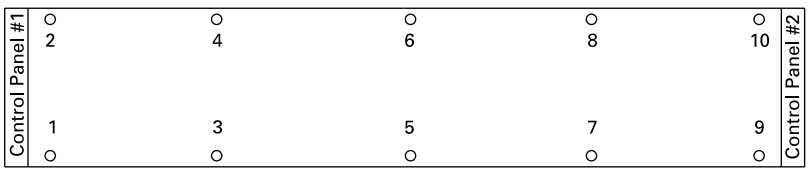
| Unit Size | Units | Isolator Location | | | | | | | | | | Operating Weight | Shipping Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| RTAC 140 STD | lbs. | 1639 | 1701 | 1655 | 1717 | 1674 | 1736 | 1692 | 1754 | n/a | n/a | 13569 | 13327 |
| | kg | 744 | 772 | 751 | 779 | 759 | 787 | 768 | 796 | n/a | n/a | 6155 | 6045 |
| RTAC 140 HIGH | lbs. | 1646 | 1708 | 1662 | 1725 | 1682 | 1744 | 1701 | 1764 | n/a | n/a | 13631 | 13354 |
| | kg | 746 | 775 | 754 | 782 | 763 | 791 | 772 | 800 | n/a | n/a | 6183 | 6057 |
| RTAC 155 STD | lbs. | 1645 | 1705 | 1661 | 1721 | 1680 | 1740 | 1698 | 1759 | n/a | n/a | 13608 | 13343 |
| | kg | 746 | 773 | 753 | 781 | 762 | 789 | 770 | 798 | n/a | n/a | 6173 | 6052 |
| RTAC 155 HIGH | lbs. | 1946 | 2018 | 1939 | 2012 | 1928 | 2001 | 1918 | 1990 | n/a | n/a | 15752 | 15458 |
| | kg | 883 | 915 | 879 | 912 | 875 | 908 | 870 | 903 | n/a | n/a | 7145 | 7012 |
| RTAC 170 STD | lbs. | 1647 | 1710 | 1664 | 1727 | 1684 | 1746 | 1704 | 1766 | n/a | n/a | 13647 | 13370 |
| | kg | 747 | 775 | 755 | 783 | 764 | 792 | 773 | 801 | n/a | n/a | 6190 | 6065 |
| RTAC 170 HIGH | lbs. | 1954 | 2029 | 1948 | 2023 | 1938 | 2013 | 1929 | 2003 | n/a | n/a | 15838 | 15518 |
| | kg | 886 | 920 | 884 | 918 | 879 | 913 | 875 | 909 | n/a | n/a | 7184 | 7039 |
| RTAC 185 STD | lbs. | 2010 | 2050 | 2001 | 2041 | 1987 | 2028 | 1974 | 2014 | n/a | n/a | 16105 | 15811 |
| | kg | 912 | 930 | 908 | 926 | 901 | 920 | 895 | 913 | n/a | n/a | 7305 | 7172 |
| RTAC 185 HIGH | lbs. | 1779 | 1903 | 1781 | 1906 | 1786 | 1910 | 1789 | 1914 | 1793 | 1918 | 18479 | 18162 |
| | kg | 807 | 863 | 808 | 864 | 810 | 866 | 812 | 868 | 813 | 870 | 8382 | 8238 |
| RTAC 200 STD | lbs. | 2031 | 2105 | 2029 | 2104 | 2027 | 2102 | 2025 | 2100 | n/a | n/a | 16524 | 16204 |
| | kg | 921 | 955 | 921 | 954 | 920 | 953 | 919 | 953 | n/a | n/a | 7495 | 7350 |
| RTAC 200 HIGH | lbs. | 1857 | 1928 | 1855 | 1925 | 1851 | 1921 | 1847 | 1917 | 1843 | 1913 | 18858 | 18512 |
| | kg | 843 | 874 | 841 | 873 | 840 | 871 | 838 | 870 | 836 | 868 | 8554 | 8397 |
| RTAC 225 STD | lbs. | 1854 | 1944 | 1853 | 1943 | 1850 | 1940 | 1848 | 1938 | 1846 | 1936 | 18952 | 18635 |
| | kg | 841 | 882 | 840 | 881 | 839 | 880 | 838 | 879 | 837 | 878 | 8597 | 8453 |
| RTAC 225 HIGH | lbs. | 2047 | 2113 | 2056 | 2122 | 2073 | 2138 | 2085 | 2151 | 2103 | 2169 | 21058 | 20712 |
| | kg | 929 | 958 | 933 | 963 | 940 | 970 | 946 | 976 | 954 | 984 | 9552 | 9395 |
| RTAC 250 STD | lbs. | 1881 | 1951 | 1879 | 1950 | 1877 | 1947 | 1875 | 1945 | 1872 | 1942 | 19118 | 18772 |
| | kg | 853 | 885 | 852 | 884 | 851 | 883 | 850 | 882 | 849 | 881 | 8672 | 8515 |
| RTAC 250 HIGH | lbs. | 2067 | 2115 | 2077 | 2125 | 2095 | 2142 | 2108 | 2156 | 2127 | 2175 | 21188 | 20842 |
| | kg | 938 | 959 | 942 | 964 | 950 | 972 | 956 | 978 | 965 | 987 | 9611 | 9454 |
| RTAC 275 STD | lbs. | 2749 | 2495 | 2690 | 2448 | 2561 | 2348 | 2491 | 2205 | 2374 | 2120 | 24479 | 23758 |
| | kg | 1248 | 1133 | 1221 | 1111 | 1163 | 1066 | 1131 | 1001 | 1078 | 962 | 11114 | 10786 |
| RTAC 275 HIGH | lbs. | 2642 | 2400 | 2690 | 2448 | 2751 | 2509 | 2818 | 2577 | 2913 | 2710 | 26457 | 25891 |
| | kg | 1199 | 1090 | 1221 | 1111 | 1249 | 1139 | 1280 | 1170 | 1323 | 1230 | 12012 | 11754 |
| RTAC 300 STD | lbs. | 2777 | 2540 | 2776 | 2538 | 2774 | 2537 | 2772 | 2535 | 2788 | 2533 | 26569 | 26039 |
| | kg | 1261 | 1153 | 1260 | 1152 | 1259 | 1152 | 1259 | 1151 | 1266 | 1150 | 12062 | 11822 |
| RTAC 300 HIGH | lbs. | 3087 | 2815 | 3027 | 2756 | 2952 | 2680 | 2866 | 2595 | 2788 | 2516 | 28082 | 27508 |
| | kg | 1401 | 1278 | 1374 | 1251 | 1340 | 1217 | 1301 | 1178 | 1266 | 1142 | 12749 | 12489 |
| RTAC 350 STD | lbs. | 2694 | 2457 | 2775 | 2538 | 2878 | 2641 | 2993 | 2755 | 3153 | 2936 | 27819 | 27315 |
| | kg | 1223 | 1115 | 1260 | 1152 | 1307 | 1199 | 1359 | 1251 | 1431 | 1333 | 12630 | 12401 |
| RTAC 350 HIGH | lbs. | 3367 | 3347 | 3231 | 3211 | 3129 | 3110 | 3064 | 3044 | 2938 | 2936 | 31377 | 30703 |
| | kg | 1529 | 1520 | 1467 | 1458 | 1421 | 1412 | 1391 | 1382 | 1334 | 1333 | 14245 | 13939 |
| RTAC 400 STD | lbs. | 3464 | 3488 | 3362 | 3340 | 3262 | 3240 | 3197 | 3174 | 3072 | 3067 | 32666 | 32016 |
| | kg | 1573 | 1584 | 1526 | 1516 | 1481 | 1471 | 1451 | 1441 | 1395 | 1392 | 14831 | 14535 |
| RTAC 400 HIGH | lbs. | 3521 | 3488 | 3551 | 3511 | 3573 | 3534 | 3596 | 3556 | 3618 | 3578 | 35526 | 34790 |
| | kg | 1598 | 1584 | 1612 | 1594 | 1622 | 1604 | 1633 | 1614 | 1643 | 1624 | 16129 | 15795 |
| RTAC 450 STD | lbs. | 3589 | 3592 | 3455 | 3458 | 3322 | 3325 | 3189 | 3192 | 3056 | 3059 | 33240 | 32545 |
| | kg | 1629 | 1631 | 1569 | 1570 | 1508 | 1510 | 1448 | 1449 | 1388 | 1389 | 15091 | 14775 |
| RTAC 500 STD | lbs. | 3542 | 3503 | 3565 | 3526 | 3587 | 3548 | 3610 | 3570 | 3632 | 3593 | 35677 | 34935 |
| | kg | 1608 | 1590 | 1619 | 1601 | 1629 | 1611 | 1639 | 1621 | 1649 | 1631 | 16197 | 15860 |

Notes:
1. Operating weight includes refrigerant and water.
2. Shipping weight includes refrigerant.
3. All weights +/- 3%.

Unit Top (Plan) View




Unit Top (Plan) View



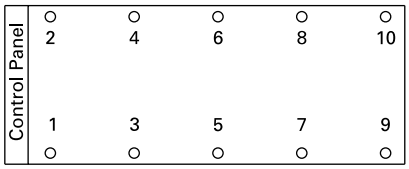
# Weights

***Table W-1. Copper fin unit weights (50 Hz units)***

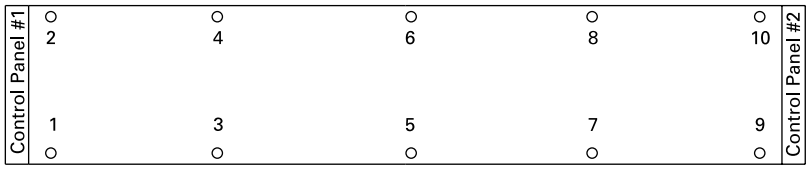
| | | Isolator Location | | | | | | | | | | Operating | Shipping |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit Size | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Weight | Weight |
| RTAC 140 STD | lbs. | 1642 | 1703 | 1658 | 1720 | 1676 | 1738 | 1695 | 1757 | n/a | n/a | 13589 | 13347 |
| | kg | 745 | 773 | 752 | 780 | 760 | 788 | 769 | 797 | n/a | n/a | 6164 | 6054 |
| RTAC 140 HIGH | lbs. | 1648 | 1710 | 1665 | 1727 | 1685 | 1747 | 1704 | 1766 | n/a | n/a | 13651 | 13374 |
| | kg | 747 | 776 | 755 | 783 | 764 | 792 | 773 | 801 | n/a | n/a | 6192 | 6066 |
| RTAC 155 STD | lbs. | 1706 | 1718 | 1721 | 1732 | 1738 | 1749 | 1754 | 1766 | n/a | n/a | 13883 | 13618 |
| | kg | 774 | 779 | 781 | 786 | 788 | 793 | 796 | 801 | n/a | n/a | 6297 | 6177 |
| RTAC 155 HIGH | lbs. | 2002 | 2026 | 2001 | 2025 | 1999 | 2023 | 1996 | 2020 | n/a | n/a | 16091 | 15797 |
| | kg | 908 | 919 | 907 | 918 | 907 | 917 | 906 | 916 | n/a | n/a | 7299 | 7166 |
| RTAC 170 STD | lbs. | 1446 | 1492 | 1434 | 1481 | 1421 | 1468 | 1408 | 1454 | n/a | n/a | 14177 | 13900 |
| | kg | 656 | 677 | 650 | 672 | 644 | 666 | 638 | 660 | n/a | n/a | 6431 | 6305 |
| RTAC 170 HIGH | lbs. | 2015 | 2089 | 2013 | 2087 | 2009 | 2084 | 2005 | 2080 | n/a | n/a | 16382 | 16062 |
| | kg | 914 | 948 | 913 | 947 | 911 | 945 | 910 | 943 | n/a | n/a | 7431 | 7286 |
| RTAC 185 STD | lbs. | 2032 | 2110 | 2023 | 2102 | 2010 | 2088 | 1996 | 2074 | n/a | n/a | 16435 | 16141 |
| | kg | 922 | 957 | 918 | 953 | 912 | 947 | 905 | 941 | n/a | n/a | 7455 | 7322 |
| RTAC 185 HIGH | lbs. | 1828 | 1932 | 1832 | 1935 | 1837 | 1941 | 1842 | 1946 | 1847 | 1951 | 18889 | 18572 |
| | kg | 829 | 876 | 831 | 878 | 833 | 880 | 835 | 882 | 838 | 885 | 8568 | 8424 |
| RTAC 200 STD | lbs. | 2045 | 2120 | 2045 | 2119 | 2044 | 2119 | 2044 | 2118 | n/a | n/a | 16654 | 16334 |
| | kg | 928 | 961 | 928 | 961 | 927 | 961 | 927 | 961 | n/a | n/a | 7554 | 7409 |
| RTAC 200 HIGH | lbs. | 1881 | 1951 | 1879 | 1950 | 1877 | 1947 | 1875 | 1945 | 1872 | 1942 | 19118 | 18772 |
| | kg | 853 | 885 | 852 | 884 | 851 | 883 | 850 | 882 | 849 | 881 | 8672 | 8515 |
| RTAC 250 STD | lbs. | 2322 | 2055 | 2346 | 2079 | 2375 | 2108 | 2403 | 2136 | 2427 | 2160 | 22412 | 21962 |
| | kg | 1054 | 933 | 1065 | 944 | 1078 | 957 | 1091 | 970 | 1102 | 981 | 10175 | 9971 |
| RTAC 250 HIGH | lbs. | 2757 | 2490 | 2675 | 2408 | 2578 | 2311 | 2481 | 2214 | 2427 | 2160 | 24503 | 23909 |
| | kg | 1252 | 1131 | 1215 | 1093 | 1171 | 1049 | 1126 | 1005 | 1102 | 981 | 11124 | 10855 |
| RTAC 275 STD | lbs. | 2923 | 2628 | 2795 | 2519 | 2643 | 2348 | 2491 | 2205 | 2374 | 2069 | 24994 | 24458 |
| | kg | 1327 | 1193 | 1269 | 1144 | 1200 | 1066 | 1131 | 1001 | 1078 | 940 | 11347 | 11104 |
| RTAC 275 HIGH | lbs. | 2730 | 2478 | 2795 | 2519 | 2823 | 2571 | 2881 | 2629 | 2962 | 2710 | 27096 | 26492 |
| | kg | 1239 | 1125 | 1269 | 1144 | 1282 | 1167 | 1308 | 1193 | 1345 | 1230 | 12302 | 12027 |
| RTAC 300 STD | lbs. | 2708 | 2452 | 2722 | 2467 | 2774 | 2485 | 2772 | 2535 | 2788 | 2533 | 26236 | 25623 |
| | kg | 1229 | 1113 | 1236 | 1120 | 1259 | 1128 | 1258 | 1151 | 1266 | 1150 | 11911 | 11633 |
| RTAC 300 HIGH | lbs. | 3087 | 2815 | 3027 | 2756 | 2952 | 2680 | 2866 | 2595 | 2788 | 2516 | 28082 | 27544 |
| | kg | 1401 | 1278 | 1374 | 1251 | 1340 | 1217 | 1301 | 1178 | 1266 | 1142 | 12749 | 12505 |
| RTAC 350 STD | lbs. | 3148 | 3127 | 3029 | 3008 | 2941 | 2920 | 2884 | 2863 | 2774 | 2769 | 29463 | 28882 |
| | kg | 1429 | 1420 | 1375 | 1366 | 1335 | 1326 | 1309 | 1300 | 1259 | 1257 | 13376 | 13113 |
| RTAC 350 HIGH | lbs. | 3480 | 3458 | 3344 | 3323 | 3244 | 3222 | 3178 | 3157 | 3053 | 3049 | 32510 | 31836 |
| | kg | 1580 | 1570 | 1518 | 1509 | 1473 | 1463 | 1443 | 1433 | 1386 | 1384 | 14759 | 14453 |
| RTAC 375 STD | lbs. | 3566 | 3569 | 3281 | 3245 | 3073 | 3037 | 2938 | 2902 | 2679 | 2680 | 30971 | 30279 |
| | kg | 1619 | 1620 | 1490 | 1473 | 1395 | 1379 | 1334 | 1318 | 1216 | 1217 | 14061 | 13747 |
| RTAC 375 HIGH | lbs. | 3566 | 3569 | 3432 | 3435 | 3299 | 3302 | 3166 | 3169 | 3033 | 3036 | 33006 | 32311 |
| | kg | 1619 | 1620 | 1558 | 1559 | 1498 | 1499 | 1437 | 1439 | 1377 | 1378 | 14985 | 14669 |
| RTAC 400 STD | lbs. | 3528 | 3488 | 3362 | 3340 | 3262 | 3240 | 3197 | 3174 | 3072 | 3067 | 32730 | 32014 |
| | kg | 1602 | 1584 | 1527 | 1516 | 1481 | 1471 | 1451 | 1441 | 1395 | 1392 | 14860 | 14534 |
| RTAC 400 HIGH | lbs. | 3528 | 3488 | 3551 | 3511 | 3573 | 3534 | 3596 | 3556 | 3618 | 3578 | 35533 | 34791 |
| | kg | 1602 | 1584 | 1612 | 1594 | 1622 | 1604 | 1632 | 1614 | 1643 | 1625 | 16132 | 15795 |

Notes:
1. Operating weight includes refrigerant and water.
2. Shipping weight includes refrigerant.
3. All weights +/- 3%.

Unit Top (Plan) View




Unit Top (Plan) View



# Mechanical Specifications

**General**
Units are leak and pressure tested at 390 psig high side, 250 psig low side, then evacuated and charged. All Air-Cooled Series R Chillers are factory tested prior to shipment. Packaged units ship with a full operating charge of oil and refrigerant. Unit panels, structural elements and control boxes are constructed of galvanized steel and mounted on a welded structural steel base. Unit panels and control boxes are finished with a baked on powder paint, and the structural base with an air dry paint. All paint meets the requirement for outdoor equipment of the US Navy and other federal government agencies.

**Evaporator**
The evaporator is a tube-in-shell heat exchanger design with internally and externally finned copper tubes roller expanded into the tube sheet. The evaporator is designed, tested and stamped in accordance with ASME for a refrigerant side working pressure of 200 psig. The evaporator is designed for a water side working pressure of 150 psig. Water connections are grooved pipe. Each shell includes a vent, a drain and fittings for temperature control sensors and is insulated with 3/4-inch equal insulation (K=0.26). Evaporator heaters with thermostat are provided to help protect the evaporator from freezing at ambient temperatures down to -20°F [-29°C].

**Condenser and Fans**
Air-cooled condenser coils have aluminum fins mechanically bonded to internally finned seamless copper tubing. The condenser coil has an integral subcooling circuit. Condensers are factory proof and leak tested at 506 psig. Direct-drive vertical discharge condenser fans are dynamically balanced. Three-phase condenser fan motors with permanently lubricated ball bearings and internal thermal overload protection are provided. Standard units will start and operate between 25 to 115°F [-4 to 46°C] ambient.

**Compressor and Lube Oil System**
The rotary screw compressor is semi-hermetic, direct drive, 3600 rpm, 60 Hz, [3000 rpm, 50 Hz], with capacity control slide valve, a load/unload valve, rolling element bearings, differential refrigerant pressure oil pump and oil heater. The motor is a suction gas cooled, hermetically sealed, two-pole squirrel cage induction motor. Oil separator and filtration devices are provided separate from the compressor. Check valves in the compressor discharge and lube oil system and a solenoid valve in the lube system are also provided.

**Refrigeration Circuits**
Each unit has two refrigerant circuits, with one or two rotary screw compressors per circuit. Each refrigerant circuit includes a compressor suction and discharge service valve, liquid line shutoff valve, removable core filter, liquid line sight glass with moisture indicator, charging port and an electronic expansion valve. Fully modulating compressors and electronic expansion valves provide variable capacity modulation over the entire operating range.

**Unit Controls**
All unit controls are housed in an outdoor rated weathertight enclosure with removable plates to allow for customer connection of power wiring and remote interlocks. All controls, including sensors, are factory mounted and tested prior to shipment. Microcomputer controls provide all control functions including start-up and shut down, leaving chilled water temperature control, compressor and electronic expansion valve modulation, fan sequencing, anti-recycle logic, automatic lead/lag compressor starting and load limiting. The unit control module, utilizing Adaptive Control™ microprocessor, automatically takes action to avoid unit shutdown due to abnormal operating conditions associated with low refrigerant pressure, high condensing pressure and motor current overload. Should the abnormal operating condition continue until a protective limit is violated, the unit will be shut down. Unit protective functions include loss of chilled water flow, evaporator freezing, loss of refrigerant, low refrigerant pressure, high refrigerant pressure, reverse rotation, compressor starting and running over current, phase loss, phase imbalance, phase reversal, and loss of oil flow. A digital display indicates chilled water setpoint and leaving chilled water temperature as standard. While current limit setpoint, evaporator and condenser refrigerant pressures, and electrical information are an option. Both standard and optional displays can be viewed on the unit without opening any control panel doors. Standard power connections include main three phase power to the compressors, condenser fans and control power transformer and optional connections are available for the 115 volt/ 60 Hz single phase power for freeze protection on the evaporator heaters.

**Starters**
Starters are housed in a weathertight enclosure with removable cover plate to allow for customer connection of power wiring. Across-the-line starters are standard on all 380-575/60 and 400/50 volt units. Wye Delta closed transition starters (33 percent of LRA inrush) are optional on 380-575/60 and 400/50 volt units and standard on 200-230/60 Hz volt units. Typically, Trane helical-rotary screw compressors are up to full speed in one second when started across-the-line and have equivalent inrush with similar size reciprocating compressor with part wind starters.

**Chilled Water Reset**
This provides the control logic and factory installed sensors to reset leaving chilled water temperature. The setpoint can be reset based on ambient temperature or return evaporator water temperature.

**Flow Control**
This provides the control logic and relays to turn the chilled water flow on and off as the chiller requires for operation and protection. This function is a requirement on the Air-Cooled Series R Chiller.

| To Convert From: | To: | Multiply By: |
|---|---|---|
| **Length** | | |
| Feet (ft) | meters (m) | 0.30481 |
| Inches (In) | millimeters (mm) | 25.4 |
| **Area** | | |
| Square Feet ($ft^2$) | square meters ($m^2$) | 0.093 |
| Square Inches ($In^2$) | square millimeters ($mm^2$) | 645.2 |
| **Volume** | | |
| Cubic Feet ($ft^3$) | Cubic meters ($m^3$) | 0.0283 |
| Cubic Inches ($In^3$) | Cubic mm (mm3) | 16387 |
| Gallons (gal) | litres (l) | 3.785 |
| Gallons (gal) | cubic meters ($m^3$) | 0.003785 |
| **Flow** | | |
| Cubic feet/min (cfm) | cubic meters/second ($m^3/s$) | 0.000472 |
| Cubic Feet/min (cfm) | cubic meters/hr ($m^3/hr$) | 1.69884 |
| Gallons/minute (GPM) | cubic meters/hr ($m^3/hr$) | 0.2271 |
| Gallons/minute (GPM) | litres/second (l/s) | 0.06308 |
| **Velocity** | | |
| Feet per minute (ft/m) | meters per second (m/s) | 0.00508 |
| Feet per second (ft/s) | meters per second (m/s) | 0.3048 |

| To Convert From: | To: | Multiply By: |
|---|---|---|
| **Energy and Power and Capacity** | | |
| British Thermal Units (BTUH) | Kilowatt (kW) | 0.000293 |
| British Thermal Units (BTU) | KCalorie (Kcal) | 0.252 |
| Tons (refrig. effect) | Kilowatt (refrig. effect) | 3.516 |
| Tons (refrig. effect) | Kilocalories per hour (Kcal/hr) | 3024 |
| Horsepower | Kilowatt (kW) | 0.7457 |
| **Pressure** | | |
| Feet of water ($ftH_20$) | Pascals (PA) | 2990 |
| Inches of water ($inH_20$) | Pascals (PA) | 249 |
| Pounds per square inch (PSI) | Pascals (PA) | 6895 |
| PSI | Bar or $KG/CM^2$ | $6.895 \times 10^{-2}$ |
| **Weight** | | |
| Ounches (oz) | Kilograms (kg) | 0.02835 |
| Pounds (lbs) | Kilograms (Kg) | 0.4536 |
| **Fouling factors for heat exchangers** | | |
| 0.00075 $ft^2$ ˚F hr/BTU | = 0.132 $m^2$ ˚ K/kW | |
| 0.00025 $ft^2$ ˚F hr/BTU | = 0.044 $m^2$ ˚ K/kW | |

**Temperature – Centigrade (˚C) Versus Fahrenheit (˚F)**

Note: The center columns of numbers, referred to as BASE TEMP., is the temperature in either degrees Fahrenheit (˚F) or Centigrade (˚C), whichever is desired to convert into the other. If degrees Centrigrade is given, read degrees Fahrenheit to the right. If degrees Fahrenheit is given, read degrees Centigrade to the left.

| Temperature | | |
|---|---|---|
| ˚C | C or F | ˚F |
| – 40.0 | **– 40** | – 40.0 |
| – 39.4 | **– 39** | – 38.2 |
| – 38.9 | **– 38** | – 36.4 |
| – 38.3 | **– 37** | – 34.6 |
| – 37.8 | **– 36** | – 32.8 |
| – 37.2 | **– 35** | – 31.0 |
| – 36.7 | **– 34** | – 29.2 |
| – 36.1 | **– 33** | – 27.4 |
| – 35.6 | **– 32** | – 25.6 |
| – 35.0 | **– 31** | – 23.8 |
| – 34.4 | **– 30** | – 22.0 |
| – 33.9 | **– 29** | – 20.2 |
| – 33.3 | **– 28** | – 18.4 |
| – 32.8 | **– 27** | – 16.6 |
| – 32.2 | **– 26** | – 14.8 |
| – 31.7 | **– 25** | – 13.0 |
| – 31.1 | **– 24** | – 11.2 |
| – 30.6 | **– 23** | – 9.4 |
| – 30.0 | **– 22** | – 7.6 |
| – 29.4 | **– 21** | – 5.8 |
| – 28.9 | **– 20** | – 4.0 |
| – 28.3 | **– 19** | – 2.2 |
| – 27.8 | **– 18** | – 0.4 |
| – 27.2 | **– 17** | + 1.4 |
| – 26.7 | **– 16** | + 3.2 |
| – 26.1 | **– 15** | + 5.0 |
| – 25.6 | **– 14** | + 6.8 |
| – 25.0 | **– 13** | + 8.6 |
| – 24.4 | **– 12** | + 10.4 |
| – 23.9 | **– 11** | + 12.2 |
| – 23.3 | **– 10** | + 14.0 |
| – 22.8 | **– 9** | + 15.8 |
| – 22.2 | **– 8** | + 17.6 |
| – 21.7 | **– 7** | + 19.4 |
| – 21.1 | **– 6** | + 21.2 |
| – 20.6 | **– 5** | + 23.0 |
| – 20.0 | **– 4** | + 24.8 |
| – 19.4 | **– 3** | + 26.6 |
| – 18.9 | **– 2** | + 28.4 |
| – 18.3 | **– 1** | + 30.2 |
| – 17.8 | **0** | + 32.0 |
| – 17.2 | **+ 1** | + 33.8 |
| – 16.7 | **+ 2** | + 35.6 |
| – 16.1 | **+ 3** | + 37.4 |
| – 15.6 | **+ 4** | + 39.2 |

| Temperature | | |
|---|---|---|
| ˚C | C or F | ˚F |
| – 15.0 | **+ 5** | + 41.0 |
| – 14.4 | **+ 6** | + 42.8 |
| – 13.9 | **+ 7** | + 44.6 |
| – 13.3 | **+ 8** | + 46.4 |
| – 12.8 | **+ 9** | + 48.2 |
| – 12.2 | **+ 10** | + 50.0 |
| – 11.7 | **+ 11** | + 51.8 |
| – 11.1 | **+ 12** | + 53.6 |
| – 10.6 | **+ 13** | + 55.4 |
| – 10.0 | **+ 14** | + 57.2 |
| – 9.4 | **+ 15** | + 59.0 |
| – 8.9 | **+ 16** | + 60.8 |
| – 8.3 | **+ 17** | + 62.6 |
| – 7.8 | **+ 18** | + 64.4 |
| – 7.2 | **+ 19** | + 66.2 |
| – 6.7 | **+ 20** | + 68.0 |
| – 6.1 | **+ 21** | + 69.8 |
| – 5.5 | **+ 22** | + 71.6 |
| – 5.0 | **+ 23** | + 73.4 |
| – 4.4 | **+ 24** | + 75.2 |
| – 3.9 | **+ 25** | + 77.0 |
| – 3.3 | **+ 26** | + 78.8 |
| – 2.8 | **+ 27** | + 80.6 |
| – 2.2 | **+ 28** | + 82.4 |
| – 1.7 | **+ 29** | + 84.2 |
| – 1.1 | **+ 30** | + 86.0 |
| – 0.6 | **+ 31** | + 87.8 |
| 0.0 | **+ 32** | + 89.6 |
| + 0.6 | **+ 33** | + 91.4 |
| + 1.1 | **+ 34** | + 93.2 |
| + 1.7 | **+ 35** | + 95.0 |
| + 2.2 | **+ 36** | + 96.8 |
| + 2.8 | **+ 37** | + 98.6 |
| + 3.3 | **+ 38** | + 100.4 |
| + 3.9 | **+ 39** | + 102.2 |
| + 4.4 | **+ 40** | + 104.0 |
| + 5.0 | **+ 41** | + 105.8 |
| + 5.5 | **+ 42** | + 107.6 |
| + 6.1 | **+ 43** | + 109.4 |
| + 6.7 | **+ 44** | + 111.2 |
| + 7.2 | **+ 45** | + 113.0 |
| + 7.8 | **+ 46** | + 114.8 |
| + 8.3 | **+ 47** | + 116.6 |
| + 8.9 | **+ 48** | + 118.4 |
| + 9.4 | **+ 49** | + 120.2 |

| Temperature | | |
|---|---|---|
| ˚C | C or F | ˚F |
| + 10.0 | **+ 50** | + 122.0 |
| + 10.6 | **+ 51** | + 123.8 |
| + 11.1 | **+ 52** | + 125.6 |
| + 11.7 | **+ 53** | + 127.4 |
| + 12.2 | **+ 54** | + 129.2 |
| + 12.8 | **+ 55** | + 131.0 |
| + 13.3 | **+ 56** | + 132.8 |
| + 13.9 | **+ 57** | + 134.6 |
| + 14.4 | **+ 58** | + 136.4 |
| + 15.0 | **+ 59** | + 138.2 |
| + 15.6 | **+ 60** | + 140.0 |
| + 16.1 | **+ 61** | + 141.8 |
| + 16.7 | **+ 62** | + 143.6 |
| + 17.2 | **+ 63** | + 145.4 |
| + 17.8 | **+ 64** | + 147.2 |
| + 18.3 | **+ 65** | + 149.0 |
| + 18.9 | **+ 66** | + 150.8 |
| + 19.4 | **+ 67** | + 152.6 |
| + 20.0 | **+ 68** | + 154.4 |
| + 20.6 | **+ 69** | + 156.2 |
| + 21.1 | **+ 70** | + 158.0 |
| + 21.7 | **+ 71** | + 159.8 |
| + 22.2 | **+ 72** | + 161.6 |
| + 22.8 | **+ 73** | + 163.4 |
| + 23.3 | **+ 74** | + 165.2 |
| + 23.9 | **+ 75** | + 167.0 |
| + 24.4 | **+ 76** | + 168.8 |
| + 25.0 | **+ 77** | + 170.6 |
| + 25.6 | **+ 78** | + 172.4 |
| + 26.1 | **+ 79** | + 174.2 |
| + 26.7 | **+ 80** | + 176.0 |
| + 27.2 | **+ 81** | + 177.8 |
| + 27.8 | **+ 82** | + 179.6 |
| + 28.3 | **+ 83** | + 181.4 |
| + 28.9 | **+ 84** | + 183.2 |
| + 29.4 | **+ 85** | + 185.0 |
| + 30.0 | **+ 86** | + 186.8 |
| + 30.6 | **+ 87** | + 188.6 |
| + 31.1 | **+ 88** | + 199.4 |
| + 31.7 | **+ 89** | + 192.2 |
| + 32.2 | **+ 90** | + 194.0 |
| + 32.8 | **+ 91** | + 195.8 |
| + 33.3 | **+ 92** | + 197.6 |
| + 33.9 | **+ 93** | + 199.4 |
| + 34.4 | **+ 94** | + 201.2 |

| Temperature | | |
|---|---|---|
| ˚C | C or F | ˚F |
| + 35.0 | **+ 95** | + 203.0 |
| + 35.6 | **+ 96** | + 204.8 |
| + 36.1 | **+ 97** | + 206.6 |
| + 36.7 | **+ 98** | + 208.4 |
| + 37.2 | **+ 99** | + 210.2 |
| + 37.8 | **+ 100** | + 212.0 |
| + 38.3 | **+ 101** | + 213.8 |
| + 38.9 | **+ 102** | + 215.6 |
| + 39.4 | **+ 103** | + 217.4 |
| + 40.0 | **+ 104** | + 219.2 |
| + 40.6 | **+ 105** | + 221.0 |
| + 41.1 | **+ 106** | + 222.8 |
| + 41.7 | **+ 107** | + 224.6 |
| + 42.2 | **+ 108** | + 226.4 |
| + 42.8 | **+ 109** | + 228.2 |
| + 43.3 | **+ 110** | + 230.0 |
| + 43.9 | **+ 111** | + 231.8 |
| + 44.4 | **+ 112** | + 233.6 |
| + 45.0 | **+ 113** | + 235.4 |
| + 45.6 | **+ 114** | + 237.2 |
| + 46.1 | **+ 115** | + 239.0 |
| + 46.7 | **+ 116** | + 240.8 |
| + 47.2 | **+ 117** | + 242.6 |
| + 47.8 | **+ 118** | + 244.4 |
| + 48.3 | **+ 119** | + 246.2 |
| + 48.9 | **+ 120** | + 248.0 |
| + 49.4 | **+ 121** | + 249.8 |
| + 50.0 | **+ 122** | + 251.6 |
| + 50.6 | **+ 123** | + 253.4 |
| + 51.1 | **+ 124** | + 255.2 |
| + 51.7 | **+ 125** | + 257.0 |
| + 52.2 | **+ 126** | + 258.8 |
| + 52.8 | **+ 127** | + 260.6 |
| + 53.3 | **+ 128** | + 262.4 |
| + 53.9 | **+ 129** | + 264.2 |
| + 54.4 | **+ 130** | + 266.0 |
| + 55.0 | **+ 131** | + 267.8 |
| + 55.6 | **+ 132** | + 269.6 |
| + 56.1 | **+ 133** | + 271.4 |
| + 56.7 | **+ 134** | + 273.2 |
| + 57.2 | **+ 135** | + 275.0 |
| + 57.8 | **+ 136** | + 276.8 |
| + 58.3 | **+ 137** | + 278.6 |
| + 58.9 | **+ 138** | + 280.4 |
| + 59.4 | **+ 139** | + 282.2 |

| Temperature | | |
|---|---|---|
| ˚C | C or F | ˚F |
| + 60.0 | **+ 140** | + 284.0 |
| + 60.6 | **+ 141** | + 285.8 |
| + 61.1 | **+ 142** | + 287.6 |
| + 61.7 | **+ 143** | + 289.4 |
| + 62.2 | **+ 144** | + 291.2 |
| + 62.8 | **+ 145** | + 293.0 |
| + 63.3 | **+ 146** | + 294.8 |
| + 63.9 | **+ 147** | + 296.6 |
| + 64.4 | **+ 148** | + 298.4 |
| + 65.0 | **+ 149** | + 300.2 |
| + 65.6 | **+ 150** | + 302.0 |
| + 66.1 | **+ 151** | + 303.8 |
| + 66.7 | **+ 152** | + 305.6 |
| + 67.2 | **+ 153** | + 307.4 |
| + 67.8 | **+ 154** | + 309.2 |
| + 68.3 | **+ 155** | + 311.0 |
| + 68.9 | **+ 156** | + 312.8 |
| + 69.4 | **+ 157** | + 314.6 |
| + 70.0 | **+ 158** | + 316.4 |
| + 70.6 | **+ 159** | + 318.2 |
| + 71.1 | **+ 160** | + 320.0 |
| + 71.7 | **+ 161** | + 321.8 |
| + 72.2 | **+ 162** | + 323.6 |
| + 72.8 | **+ 163** | + 325.4 |
| + 73.3 | **+ 164** | + 327.2 |
| + 73.9 | **+ 165** | + 329.0 |
| + 74.4 | **+ 166** | + 330.8 |
| + 75.0 | **+ 167** | + 332.6 |
| + 75.6 | **+ 168** | + 334.4 |
| + 76.1 | **+ 169** | + 336.2 |
| + 76.7 | **+ 170** | + 338.0 |
| + 77.2 | **+ 171** | + 339.8 |
| + 77.8 | **+ 172** | + 341.6 |
| + 78.3 | **+ 173** | + 343.4 |
| + 78.9 | **+ 174** | + 345.2 |
| + 79.4 | **+ 175** | + 347.0 |
| + 80.0 | **+ 176** | + 348.8 |
| + 80.6 | **+ 177** | + 350.6 |
| + 81.1 | **+ 178** | + 352.4 |
| + 81.7 | **+ 179** | + 354.2 |
| + 82.2 | **+ 180** | + 356.0 |
| + 82.8 | **+ 181** | + 357.8 |
| + 83.3 | **+ 182** | + 359.8 |
| + 83.9 | **+ 183** | + 361.4 |
| + 84.4 | **+ 184** | + 363.2 |

**FOR INTERPOLATION IN THE ABOVE TABLE USE:**

| BASE TEMPERATURE (˚F or ˚C) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| DEGREES CENTIGRADE: | 0.56 | 1.11 | 1.67 | 2.22 | 2.78 | 3.33 | 3.89 | 4.44 | 5.00 | 5.56 |
| DEGREES FAHRENHEIT: | 1.8 | 3.6 | 5.4 | 7.2 | 9.0 | 10.8 | 12.6 | 14.4 | 16.2 | 18.0 |

The standard ARI rating condition (54/44°F and 95°F) and IPLV are ARI certified. All other ratings, including the following, are outside the scope of the certification program and are excluded:

- Glycol.
- 50 Hz.
- Unit sizes RTAC 200-500.

ARI PERFORMANCE CERTIFIED™
ARI Standard 550/590
Air Cooled Chillers

c UL US LISTED

TRANE®


| | |
|---|---|
| Literature Order Number | RLC-PRC006-EN |
| File Number | PL-RF-RLC-000-PRC006-1106 |
| Supersedes | RLC-PRC006-EN 0706 |
| Stocking Location | Electronic Only |



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