



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





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



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Features and Benefits

Table 1. RTAC efficiency vs Ashrae 90.1

Tonnage	ASHRAE 90.1	RTAC - Exceeding the Efficiency Standard			Part Load Efficiency (EER*)	
		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...

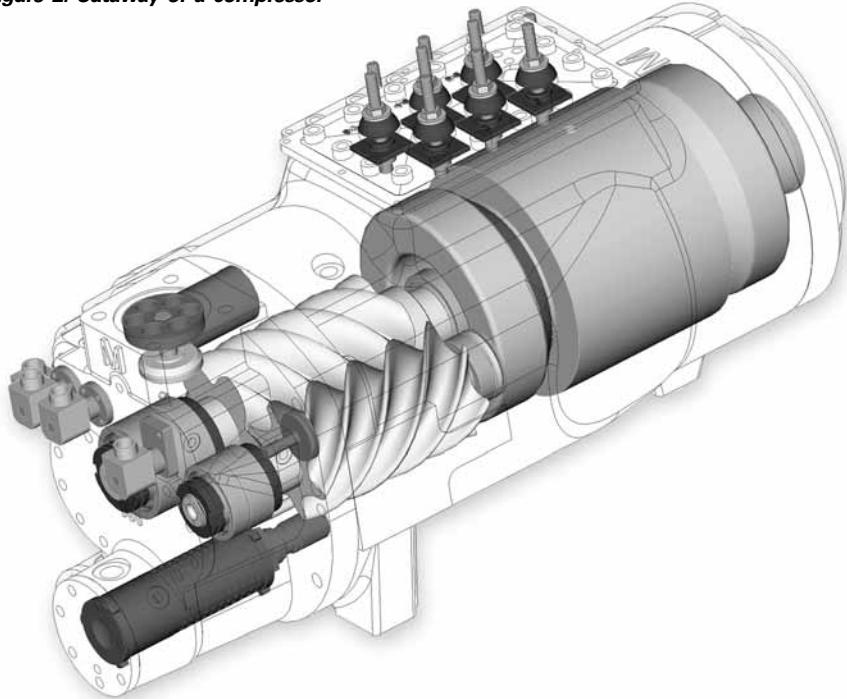
The importance of energy efficiency cannot be understated. Fortunately, ASHRAE has created a guideline emphasizing its importance. Nonetheless, energy is often dismissed as an operational cost over which the owner has little control. That perception results in missed opportunities for energy efficiency, 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

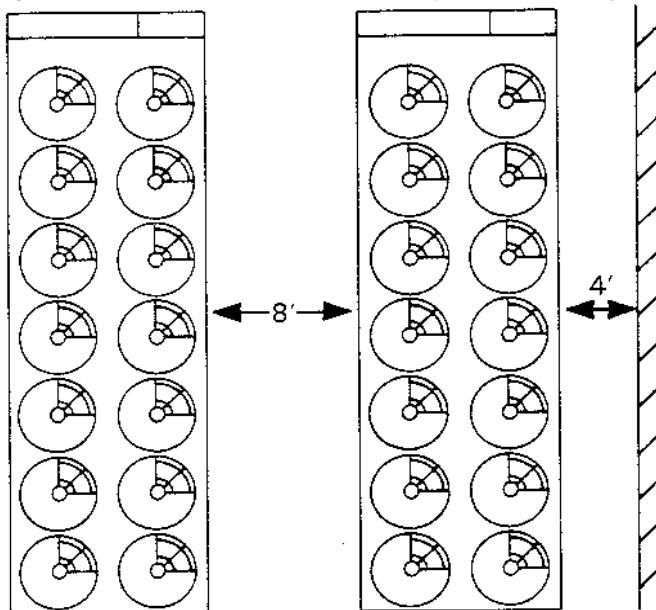
- **Compact Physical Size.** The Trane Model RTAC chiller averages a 20% reduction in physical footprint, while the greatest change is actually 40% smaller when compared against the previous design. This improvement makes the RTAC the smallest air-cooled chiller in the industry and a prime candidate 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.

Controls

Standalone Controls

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

Figure C1. DynaView operator interface



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.

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.

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

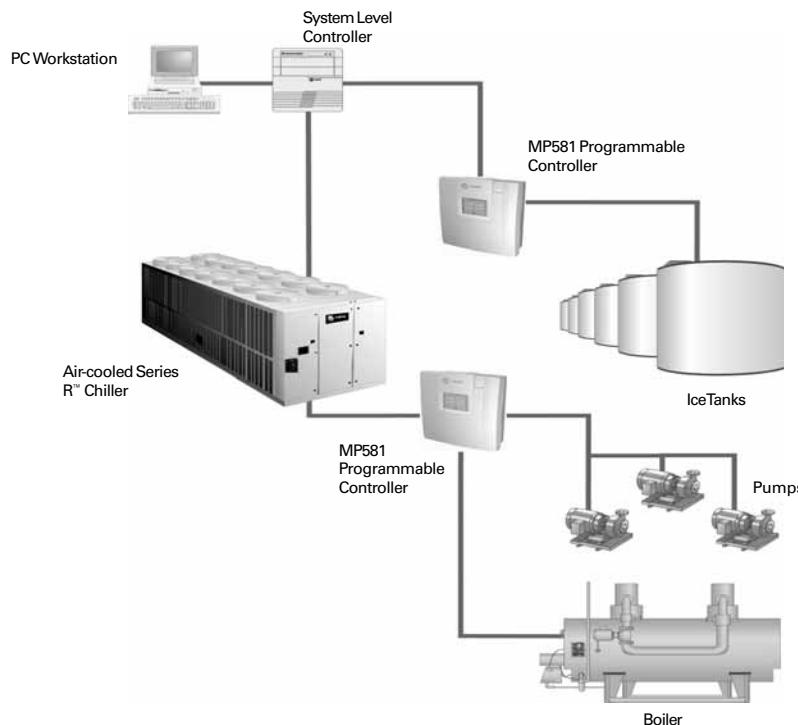
LonTalk Communications Interface for Chillers (LCI-C) provides a generic automation system with the LonMark chiller profile inputs/outputs. In addition to the standard points required by LonMark, Trane provides other commonly used network output variables for greater interoperability with any automation 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 RunTime



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:

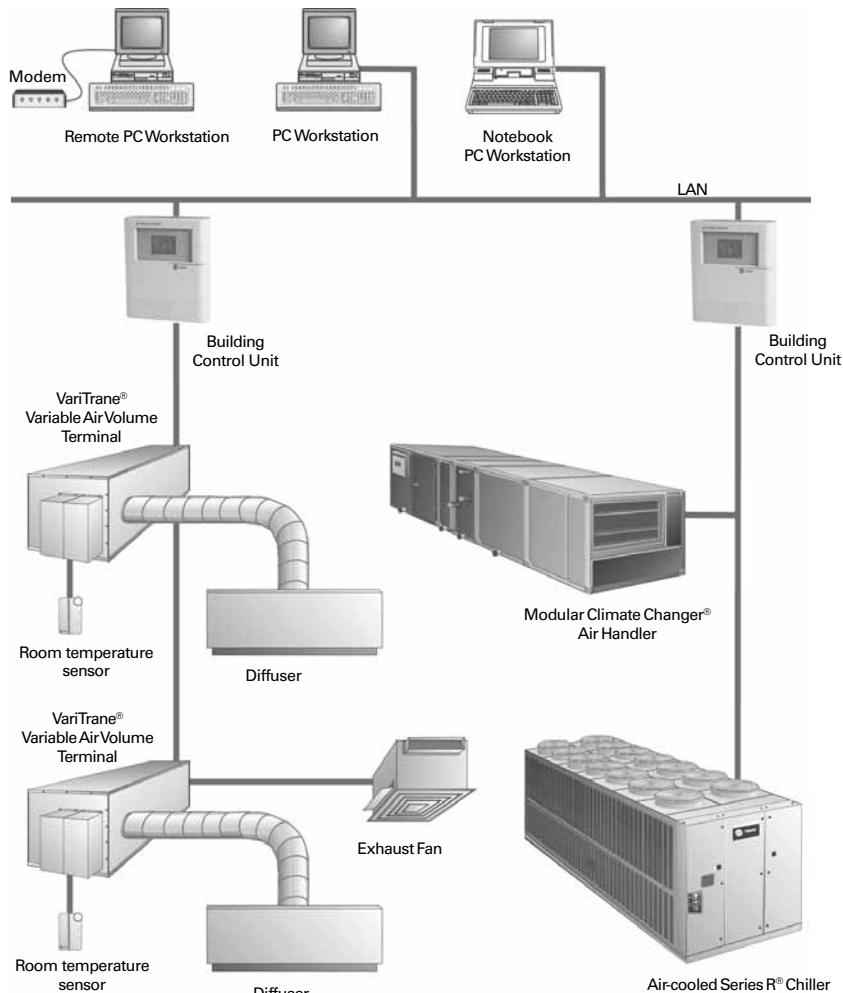
- a) Compressor on/off status
- b) Compressor running at maximum capacity
- c) Failure has occurred (Ckt 1/Ckt 2)

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.

Trane Integrated Comfort System 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 TraneTracer™ 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 operate 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.

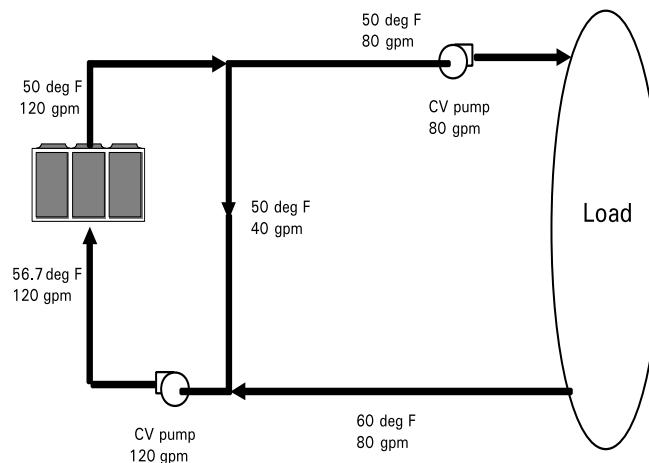
Flow Rates out of Range

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

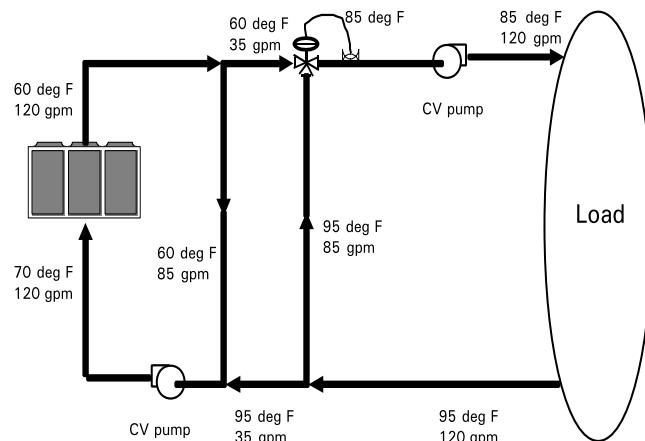
Leaving Water Temperature Limits

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 [76 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 $\pm 0.5^{\circ}\text{F}$ [0.28°C] leaving evaporator temperature control. For applications in which system energy savings is most important and tight temperature control is classified as $\pm 2^{\circ}\text{F}$ [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.

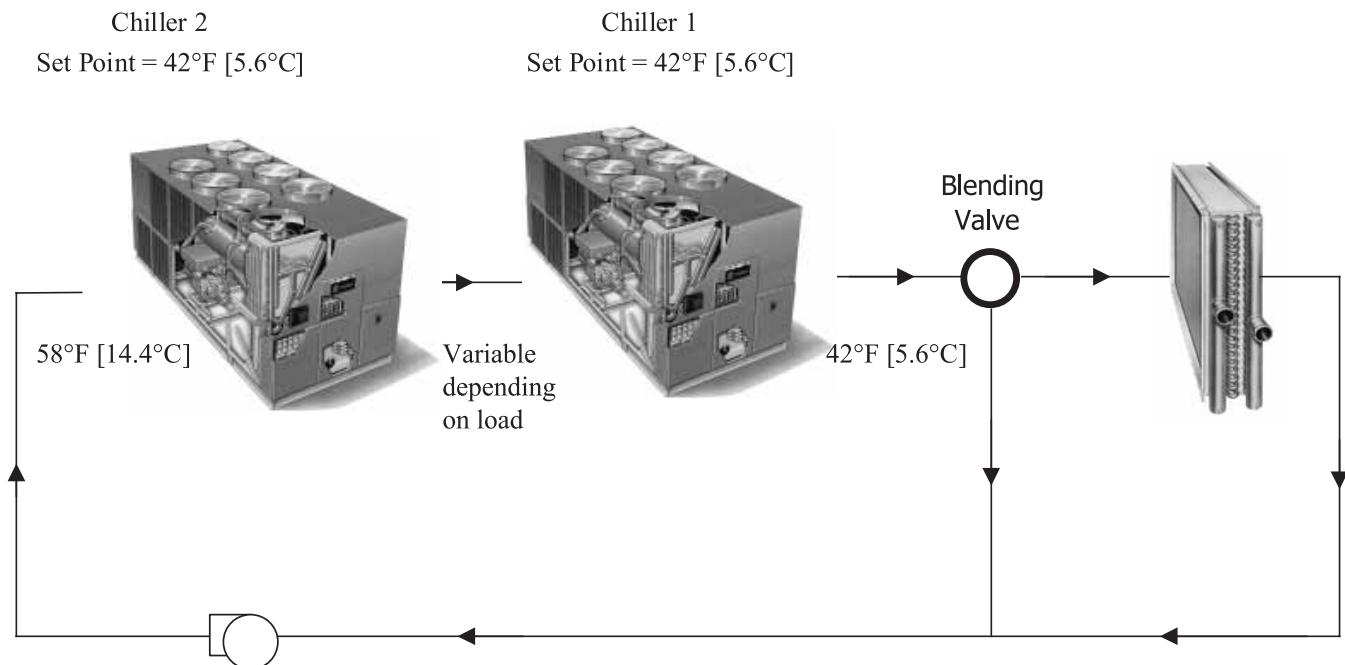
Series chiller arrangements can be controlled in several ways. Figure A3 shows a strategy where each chiller is trying to achieve the system design set point. If the cooling load is less than 50 percent of the systems capabilities, either chiller can fulfill the demand. As system loads increase, the 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.

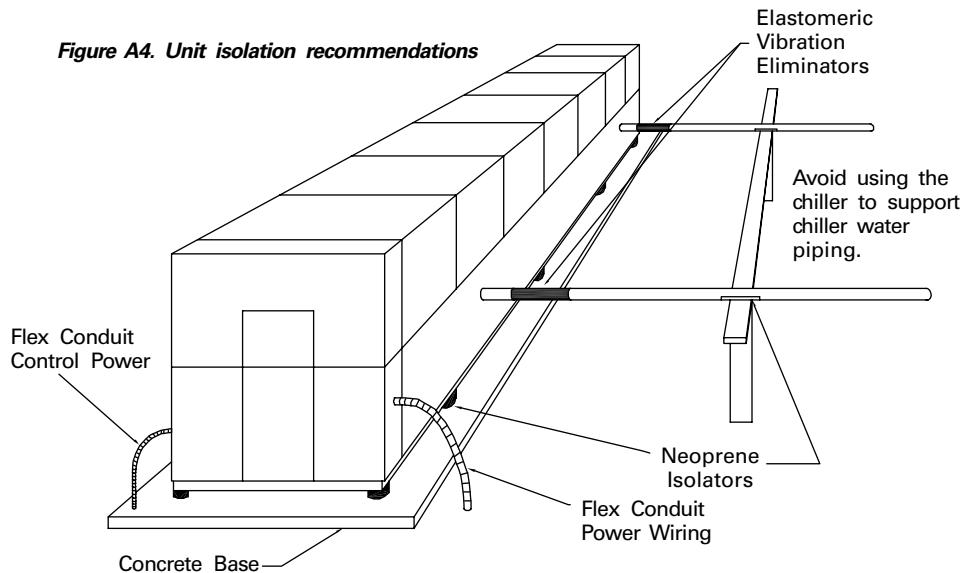
Typical Unit Installation

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:

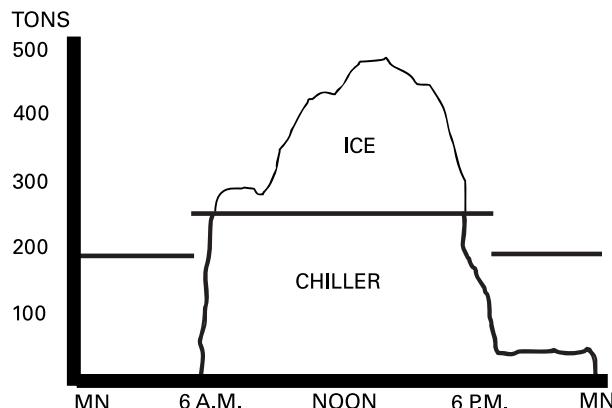
Even with ice storage systems there are numerous hours when ice is neither produced or consumed, but saved. In this mode the chiller is the sole source of cooling. For example, to cool the building after all ice is produced but before high electrical demand charges take effect, Tracer sets the air-cooled 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										
Compressor													
Quantity(1)	2	2	2	2	2	2	2	3	3	3	4	4	4
Nominal size (tons) @ 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 / 100-100	120-120 / 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)	-178	-178	-178	-178	-178	-178	-178	-178	-178	-178	-178	-178	-178
General unit													
Refrigerant	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	4.6/2.1	5.0/2.1	5.0/2.1	5.0/5.0	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	17/8	19/8	19/8	19/19	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	85-85 / 100-100	100-100 / 100-100
Evaporator											
Water storage	(gallons)	33	35	39	38	42	42	70	70	81	89
	(liters)	127	134	146	145	158	158	264	264	306	337
2 Pass arrangement											
Minimum flow	(gpm)	202	217	241	217	241	241	375	375	404	461
	(L/s)	13	14	15	14	15	15	24	24	26	29
Maximum flow	(gpm)	741	796	883	796	883	883	1374	1374	1483	1680
	(L/s)	47	50	56	50	56	56	87	87	94	107
3 Pass arrangement											
Minimum flow	(gpm)	135	145	161	145	161	161	250	250	270	307
	(L/s)	9	9	10	9	10	10	16	16	17	19
Maximum flow	(gpm)	494	531	589	531	589	589	916	916	989	1127
	(L/s)	31	33	37	33	37	37	58	58	62	71
Condenser											
Qty of coils		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
	(millimeters)	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	3658/3658	4572/2743	5486/3658	6401/3658	5486/5486
Coil height	(inches)	42	42	42	42	42	42	42	42	42	42
	(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192
Number of rows		3	3	3	3	3	3	3	3	3	3
Condenser fans											
Quantity (1)		5/5	65	66	7/6	7/7	8/6	8/8	12/6	14/6	12/12
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30
	(millimeters)	762	762	762	762	762	762	762	762	762	762
Total airflow	(cfm)	91993	101190	110387	119598	128812	136958	147242	173733	192098	220778
	(m^3/hr)	156281	171906	187530	203178	218831	232670	250141	295145	326344	375066
Nominal fan speed	rpm	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
	rps	19	19	19	19	19	19	19	19	19	19
Tip speed	(ft/min)	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954
	M/S	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
	(C)	-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
	(C)	-178	-178	-178	-178	-178	-178	-178	-178	-178	-178
General unit											
Refrigerant		HFC-134a	HFC-134a								
No. of independent refrigerant circuits		2	2	2	2	2	2	2	2	2	2
% Minimum load		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
	(kilograms)	79/79	98/93	98/98	102/98	102/102	107/107	107/107	188/91	209/91	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	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	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) @ 50 Hz	70/70	85/70	85/85	100/85	100/100	70-70 / 100	85-85 / 100	100-100 / 100	85-85 / 85-85	100-100 / 85-85	100-100 / 100-100
Evaporator											
Water storage	(gallons)	29	32	33	35	39	54	60	65	73	77
	(liters)	111	121	127	134	146	205	229	245	277	293
2 Pass arrangement											
Minimum flow	(gpm)	193	214	202	217	241	265	309	339	351	381
	(L/s)	117	129	122	131	145	160	187	204	212	230
Maximum flow	(gpm)	709	785	741	796	883	970	1134	1243	1287	1396
	(L/s)	45	50	47	50	56	61	72	78	81	94
3 Pass arrangement											
Minimum flow	(gpm)	129	143	135	145	161	176	206	226	234	254
	(L/s)	8	9	9	9	10	11	13	14	15	17
Maximum flow	(gpm)	473	523	494	531	589	647	756	829	858	930
	(L/s)	30	33	31	33	37	41	48	52	54	62
Condenser											
Qty of coils		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
	(millimeters)	3962/3962	4572/3962	4572/4572	5486/4572	5486/5486	3962/4572	4572/2743	5486/2743	4572/4572	5486/4572
Coil height	(inches)	42	42	42	42	42	42	42	42	42	42
	(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192
Number of rows		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	12/12
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30
	(millimeters)	762	762	762	762	762	762	762	762	762	762
Total airflow	(cfm)	63346	69507	75671	83236	90803	108698	121056	136210	151332	166467
	(m³/hr)	107615	118081	128553	141405	154260	184661	205655	231399	257089	282801
Nominal fan speed	rpm	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
Tip speed	(ft/min)	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461
	M/S	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
	(C)	-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
	(C)	-178	-178	-178	-178	-178	-178	-178	-178	-178	-178
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
% Minimum load		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
	(kilograms)	75/75	79/75	79/79	98/95	98/98	152/91	166/91	188/91	166/166	188/166
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
	[liters]	6/6	6/6	6/6	6/8	8/8	17/8	17/8	19/8	17/17	19/17

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 Type	140 HIGH	155 HIGH	170 HIGH	185 HIGH	200 HIGH	250 HIGH	275 HIGH	300 HIGH	350 HIGH	375 HIGH	400 HIGH	
Compressor Quantity (1)	2	2	2	2	2	3	3	3	4	4	4	
Nominal Size (tons) @ 50 Hz	70/70	85/70	85/85	100/85	100/100	70-70 / 100	85-85 / 100	100-100 / 100	85-85 / 85-85	100-100 / 85-85	100-100 / 100-100	
Evaporator Water storage	(gallons) (liters)	33 127	35 134	39 146	38 145	42 158	65 245	70 264	70 264	81 306	84 316	
2 Pass arrangement Minimum flow	(gpm) (L/s)	202 13	217 14	241 15	217 14	241 15	339 21	375 24	375 24	404 26	422 27	
Maximum flow	(gpm) (L/s)	741 47	796 50	883 56	796 50	883 56	1243 78	1374 87	1374 87	1483 94	1548 98	
3 Pass arrangement Minimum flow	(gpm) (L/s)	135 9	145 9	161 10	145 9	161 10	226 14	250 16	250 16	270 17	282 18	
Maximum flow	(gpm) (L/s)	494 31	531 33	589 37	531 33	589 37	829 52	916 58	916 58	989 62	1032 65	
Condenser Qty of coils	4	4	4	4	4	8	8	8	8	8	8	
Coil length	(inches) (millimeters)	180/180 4572/4572	216/180 5486/4572	216/216 5486/5486	252/216 6401/5486	252/252 6401/6401	180/108 4572/2743	216/144 5486/3658	252/144 6401/3658	216/216 5486/5486	252/216 6401/5486	252/252 6401/6401
Coil height	(inches) (millimeters)	42 1067										
Fins/Ft Number of rows	192 3	192 3	192 3	192 3	192 3	192 3	192 3	192 3	192 3	192 3	192 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) (millimeters)	30 762										
Total airflow	(cfm) (m^3/hr)	75575 128390	83130 141225	90687 154063	98256 166921	105826 179781	120971 205510	142969 242881	158112 268607	181371 308120	194731 330817	211648 359556
Nominal fan speed	rpm rps	950 15.8										
Tip speed	(ft/min) M/S	7461 38										
Minimum starting/operating ambient (2)												
Standard unit	(F) (C)	25 -3.9										
Low ambient	(F) (C)	0 -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) (kilograms)	175/175 79/79	215/205 98/93	215/215 98/98	225/215 102/95	225/225 102/102	365/200 166/91	415/200 188/91	460/200 209/91	415/415 188/188	460/415 209/188	460/460 209/209
Oil charge (1)	(pounds) (kilograms)	1.5/1.5 6/6	1.5/1.5 6/6	1.5/1.5 6/6	2.1/1.5 8/6	2.1/2.1 8/8	4.6/2.1 17/8	4.6/2.1 17/8	5.0/2.1 19/8	4.6/4.6 17/17	5.0/5.0 19/19	5.0/5.0 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:
 $GPM = (\text{Tons} \times 24) / \text{Temperature Drop (Degrees F)}$
OR
 $L/S = (\text{kW (Capacity}) \times .239) / \text{Temperature Drop (Degrees C)}$

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 = 140Tons
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:
 $GPM = (140\text{Tons} \times 24) / 10^\circ\text{F} = 336 \text{ GPM}$
- 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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	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.



Performance Data

Full Load Performance

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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	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	168.7	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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	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.



Performance Data

Full Load Performance

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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	EER
46	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
	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
48	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
	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
50	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
	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
55	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			35			40			45		
		kW cooling	kW input	COP	kW cooling	kW input	COP	kW cooling	kW input	COP	kW cooling	kW input	COP
5	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
	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
7	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
	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
9	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	7278	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
	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 (kW_o/kW_i). 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

Full Load Performance

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			35			40			45		
		kW cooling	kW input	COP	kW cooling	kW input	COP	kW cooling	kW input	COP	kW cooling	kW input	COP
5	140 HIGH	508.8	137.0	3.3	4778	1475	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
7	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
	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
9	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
	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
12	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 (kW_o/kW_i). 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

Full Load Performance

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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	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.



Performance Data

Full Load Performance

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
48	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
	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
50	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
	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
55	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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	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.



Performance Data

Full Load Performance

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			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	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
48	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
	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
50	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
	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
55	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			35			40			45		
		kW cooling	kW input	COP	kW cooling	kW input	COP	kW cooling	kW input	COP	kW cooling	kW input	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
7	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
	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
9	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
	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	7777	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
13	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.



Performance Data

Full Load Performance

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

Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	Condenser Entering Air Temperature (C)											
		30			35			40			45		
		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 (kW_o/kW_i). 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-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-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-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

Performance Data

Adjustment Factors

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

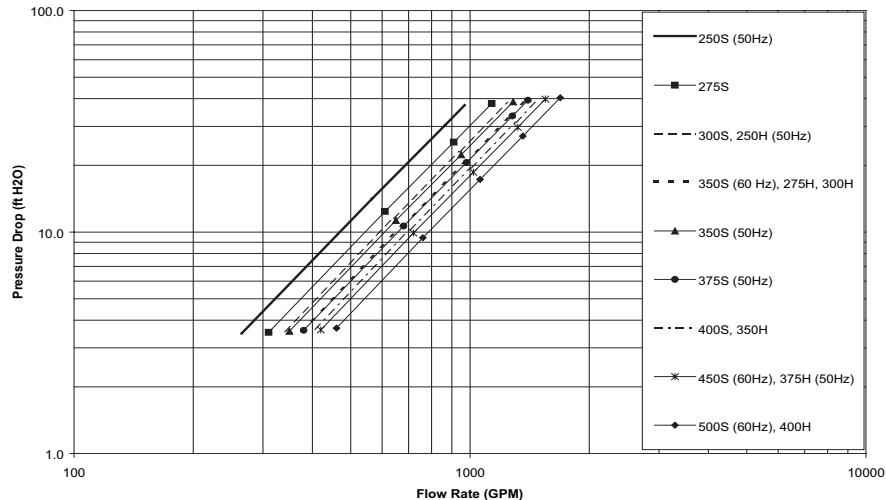
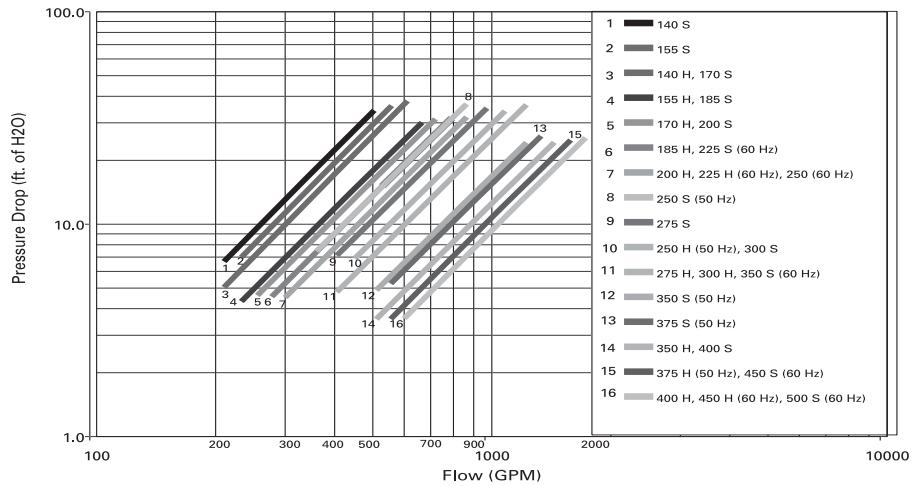
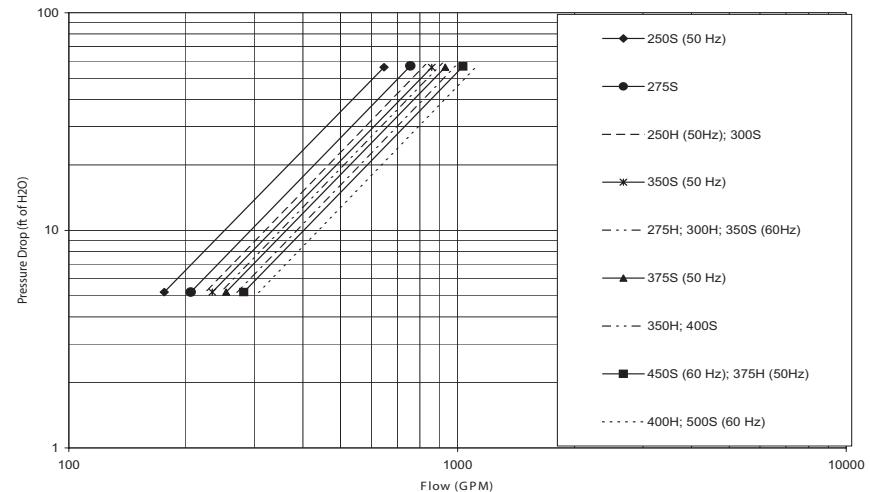


Figure P-2. Evaporator water pressure drop, 3 and 4 compressor units, 2 pass evaporator

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 Size	Rated Voltage	Unit Wiring				Motor Data							
		# of Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Compressor (Each)			Fans (Each)				
						Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	Control kW (7)
RTAC 140	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
	380/60/3	1	348	450	400	2	142-142	801-801	260-260	8	1.5	3.5	0.83
	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
RTAC 155	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
	380/60/3	1	380	500	450	2	168-142	973-801	316-260	9	1.5	3.5	0.83
	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
RTAC 170	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
	380/60/3	1	413	500	500	2	168-168	973-973	316-316	10	1.5	3.5	0.83
	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 Size	Rated Voltage	# of Power Conns (1)	Unit Wiring			Rec. Time Delay or RDE (4)	Qty	Compressor (Each)			Motor Data			
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Ckt 1/Ckt 2			RLA (5) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty.	Fans (Each) Ckt 1/Ckt 2	kW	FLA
RTAC 185	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	
	380/60/3	1	460	600	600	2	203-168	1060-973	345-316	11	1.5	3.5	0.83	
	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	
RTAC 200	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	
	380/60/3	1	499	700	600	2	203-203	1060-1060	345-345	12	1.5	3.5	0.83	
	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	
RTAC 225	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	
RTAC 250	230/60/3	2	545/459	800/700	700/600	2	399/336	NA	691/571	7/6	1.5	6.5	0.83	
	380/60/3	1	551	700	700	2	242-203	1306-1060	424-345	13	1.5	3.5	0.83	
	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	
RTAC 250	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	
	380/60/3	1	594	800	700	2	242-242	1306-1306	424-424	14	1.5	3.5	0.83	
	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 Size	Rated Voltage	Unit Wiring				Motor Data						
		# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	Compressor (Each) XLR A (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Fans (Each) Qty. Ckt 1/Ckt 2	2kW FLA	Control kW (7)
RTAC 275	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
	380/60/3	1	NA									
	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
RTAC 300	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
	380/60/3	1	NA									
	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
RTAC 350	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
	380/60/3	1	NA									
	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
RTAC 375	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
	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
	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
RTAC 400	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
	380/60/3	1	NA									
	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
RTAC 375	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 Size	Rated Voltage	# of Power Conns (1)	Unit Wiring			Rec. Time Delay or RDE (4)	Motor Data			Fans (Each)			
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Ckt 1/Ckt 2		Compressor (Each) XLRA (8) Ckt 1/Ckt 2	YLRA (8) Qty. Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	Control kW (7)	
RTAC	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
	380/60/3	1	NA										
	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
RTAC	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
	380/60/3	1	NA										
	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 Size	Rated Voltage	Unit Wiring				Motor Data							
		# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	Compressor (Each) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty.	Fans (Each) Ckt 1/Ckt 2	kW FLA	Control kW (7)
RTAC 140	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
	380/60/3	1	341	450	400	2	136-136	801-801	260-260	10	1.5	3.5	0.83
	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
RTAC 155	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
	380/60/3	1	376	500	416	2	161-136	973-801	316-260	11	1.5	3.5	0.83
	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
RTAC 170	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
	380/60/3	1	404	500	450	2	161-161	973-973	316-316	12	1.5	3.5	0.83
	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 Size	Rated Voltage	Unit Wiring					Motor Data					
		# of Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	Compressor (Each) XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty.	Fans (Each) Ckt 1/Ckt 2	kW FLA Control kW (7)
RTAC 185	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
	380/60/3	1	452	600	500	2	196-161	1060-973	345-316	13	1.5 3.5	0.83
	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
RTAC 200	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
	380/60/3	1	490	600	600	2	196-196	1060-1060	345-345	14	1.5 3.5	0.83
	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
RTAC 225	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
	380/60/3	1	539	700	600	2	235-196	1306-1060	424-345	14	1.5 3.5	0.83
	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
RTAC 250	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 Size	Rated Voltage	Unit Wiring				Motor Data						
		# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	Compressor (Each) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty.	Fans (Each) Ckt 1/Ckt 2	kW FLA Control
RTAC 250	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
	380/60/3	1	585	800	700	2	235-235	1306-1306	424-424	16	1.5 3.5	0.83
	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
RTAC 275	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
	380/60/3	1	NA									
	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
RTAC 300	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
	380/60/3	1	NA									
	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
RTAC 350	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	800/800	4	265-265/265-265	NA	506-506/506-506	12/12	1.5 6.5	1.2
RTAC 380	380/60/3	1	NA									
	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 Size	Rated Voltage	# of Power Conns (1)	Unit Wiring		Rec.Time Delay or RDE (4)	Qty	Compressor (Each)		Motor Data			Control kW (7)		
			MCA (3)	Ckt 1/Ckt 2			Max. Fuse, HACR Breaker or MOP (11)	Ckt 1/Ckt 2	RLA (5) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	FLA Ckt 1/Ckt 2	
RTAC	400503	1	819	1000	1000	4	189-189-160-160	1089-1089-896-896	354-354-291-291	26	0.8	28	159	
	375	2	465394	600500	600450	4	189-189-160-160	1089-1089-896-896	254-254-291-291	14/12	0.8	28	159	
	200603	1	NA											
	200603	2	931831	1200/1200	1200/1200	4	373-373/373-373	NA		701-701/701-701	14/14	15	65	159
	230603	1	NA											
	230603	2	820820	1000/1000	1000/1000	4	324-324/324-324	NA		571-571/571-571	14/14	15	65	159
	380603	1	NA											
RTAC	400	2	490490	600600	600600	4	196-196/196-196	1060-1060/1060-1060	345-345/345-345	14/14	15	35	159	
	380603	1	767	800	800	4	162-162-162-162	878-878-878-878	285-285/285-285	28	15	28	159	
	460603	2	404404	500500	450450	4	162-162/162-162	878-878/878-878	285-285/285-285	14/14	15	28	159	
	575603	1	617	700	700	4	130-130-130-130	705-705-705-705	229-229/229-229	28	15	23	159	
	575603	2	325325	450450	400400	4	130-130/130-130	705-705/705-705	229-229/229-229	14/14	15	23	159	
	400503	1	882	1000	1000	4	189-189-189-189	1089-1089-1089-1089	354-354/354-354	28	0.8	28	159	
	400503	2	465465	600600	600600	4	189-189/189-189	1089-1089/1089-1089	354-354/354-354	14/14	0.8	28	159	

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 Size	Rated Voltage	Unit Wiring				Motor Data						Control Qty.	
		# of Conns (1)	Power Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11)		Rec. Time Delay or RDE (4)		Compressor (Each)		Fans (Each)			
				MCA (3) Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2 Qty	Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	kW Ckt 1/Ckt 2	FLA Ckt 1/Ckt 2		
RTAC 140	200/60/3	1	673	800	2	270-270	NA	487-487	10	1.5	6.5	0.83	
	200/60/3	2	370/370	600/600	2	270/270	NA	487/487	5/5	1.5	6.5	0.83	
	230/60/3	1	594	700	2	235-235	NA	427-427	10	1.5	6.5	0.83	
	230/60/3	2	327/327	500/500	2	235/235	NA	427/427	5/5	1.5	6.5	0.83	
	380/60/3	1	355	400	2	142-142	801-801	260-260	10	1.5	3.5	0.83	
	380/60/3	2	195/195	300/300	2	142/142	801/801	260/260	5/5	1.5	3.5	0.83	
	460/60/3	1	294	400	2	118-118	652-652	212-212	10	1.5	2.8	0.83	
	460/60/3	2	162/162	250/250	2	118/118	652/652	212/212	5/5	1.5	2.8	0.83	
	575/60/3	1	235	300	2	94-94	520-520	172-172	10	1.5	2.3	0.83	
	575/60/3	2	129/129	200/200	2	94/94	520/520	172/172	5/5	1.5	2.3	0.83	
RTAC 155	400/50/3	1	339	450	2	138-138	774-774	259-259	10	0.8	2.8	0.83	
	400/50/3	2	187/187	300/300	2	138/138	774/774	259/259	5/5	0.8	2.8	0.83	
	200/60/3	1	742	1000	2	320-270	NA	600-487	11	1.5	6.5	0.83	
	200/60/3	2	439/370	700/600	2	320/270	NA	600/487	6/5	1.5	6.5	0.83	
	230/60/3	1	654	800	2	278-235	NA	506-427	11	1.5	6.5	0.83	
	230/60/3	2	387/327	600/500	2	278/235	NA	506/427	6/5	1.5	6.5	0.83	
	380/60/3	1	391	500	2	168-142	973-801	316-260	11	1.5	3.5	0.83	
	380/60/3	2	231/195	350/300	2	168/142	973/801	316/260	6/5	1.5	3.5	0.83	
	460/60/3	1	323	450	2	139-118	774-652	252-212	11	1.5	2.8	0.83	
	460/60/3	2	191/162	300/250	2	139/118	774/652	252/212	6/5	1.5	2.8	0.83	
RTAC 170	575/60/3	1	258	350	2	111-94	631-528	205-172	11	1.5	2.3	0.83	
	575/60/3	2	153/129	250/200	2	111/94	631/528	205/172	6/5	1.5	2.3	0.83	
	400/50/3	1	379	500	2	168-138	896-796	291-259	11	0.8	2.8	0.83	
	400/50/3	2	227/187	350/300	2	168/138	896/796	291/259	6/5	0.8	2.8	0.83	
	200/60/3	1	798	1000	2	320-320	NA	600-600	12	1.5	6.5	0.83	
	200/60/3	2	439/439	700/700	2	320/320	NA	600/600	6/6	1.5	6.5	0.83	
	230/60/3	1	704	800	2	278-278	NA	506-506	12	1.5	6.5	0.83	
	230/60/3	2	387/387	600/600	2	278/278	NA	506/506	6/6	1.5	6.5	0.83	
	380/60/3	1	420	500	2	168-168	973-973	316-316	12	1.5	3.5	0.83	
	380/60/3	2	231/231	350/350	2	168/168	973/973	316/316	6/6	1.5	3.5	0.83	
RTAC 180	460/60/3	1	346	450	2	139-139	774-774	252-252	12	1.5	2.8	0.83	
	460/60/3	2	191/191	300/300	2	139/139	774/774	252/252	6/6	1.5	2.8	0.83	
	575/60/3	1	277	350	2	111-111	631-631	205-205	12	1.5	2.3	0.83	
	575/60/3	2	153/153	250/250	2	111/111	631/631	205/205	6/6	1.5	2.3	0.83	
	400/50/3	1	412	500	2	168-168	896-896	291-291	12	0.8	2.8	0.83	
	400/50/3	2	227/227	350/350	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 Size	Rated Voltage	Unit Wiring				Motor Data						
		# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	Compressor (Each) RLA (5) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty.	Fans (Each) Ckt 1/Ckt 2	kW FLA Control
RTAC 185	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
	380/60/3	1	467	600	600	2	203-168	1060-973	345-316	13	1.5 3.5	0.83
	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
RTAC 200	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
	380/60/3	1	506	700	600	2	203-203	1060-1060	345-345	14	1.5 3.5	0.83
	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
RTAC 225	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
	380/60/3	1	555	700	700	2	242-203	1306-1060	424-345	14	1.5 3.5	0.83
	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
RTAC 250	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 Size	Rated Voltage	Unit Wiring				Motor Data						
		# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	Compressor (Each) XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty.	Fans (Each) Ckt 1/Ckt 2	kW FLA Control
RTAC 250	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
	380/60/3	1	601	800	700	2	242-242	1306-1306	424-424	16	1.5 3.5	0.83
	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
RTAC 275	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
	380/60/3	1	NA									
	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
RTAC 300	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
	380/60/3	1	NA									
	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
RTAC 350	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	878-878/878	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	1000/1000	1000/1000	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	380/60/3	1	NA									
	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 Size	Rated Voltage	# of Conns (1)	Unit Wiring			Rec. Time Delay or RDE (4)	RLA (5) Qty	Compressor (Each)			Motor Data		
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Ckt 1/Ckt 2			XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Fans (Each) Qty.	Ckt 1/Ckt 2	Ckt 1/Ckt 2	2kW FLA
RTAC 375	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
	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	1200/1200	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).



TRANE®

Electrical Data and Connection

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



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

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.



TRANE®

Electrical Data and Connection

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



Electrical Data and Connection

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



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	Wire Selection Size to Main Terminal Block	Wire Selection Size to Disconnect (2)	Wire Selection Size to Circuit Breaker (2)
		XL Starter Connector Wire Range Ckt 1 / Ckt 2	YD Starter Connector Wire Range Ckt 1 / Ckt 2	Connector Wire Range Ckt 1 / Ckt 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
	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
RTAC 400 STD	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
	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
RTAC 400 HIGH	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
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 450 STD	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
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 500 STD	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) and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575V/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

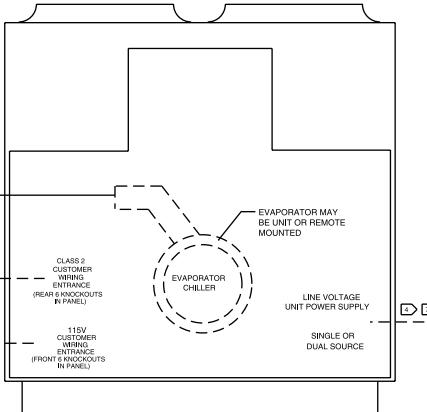
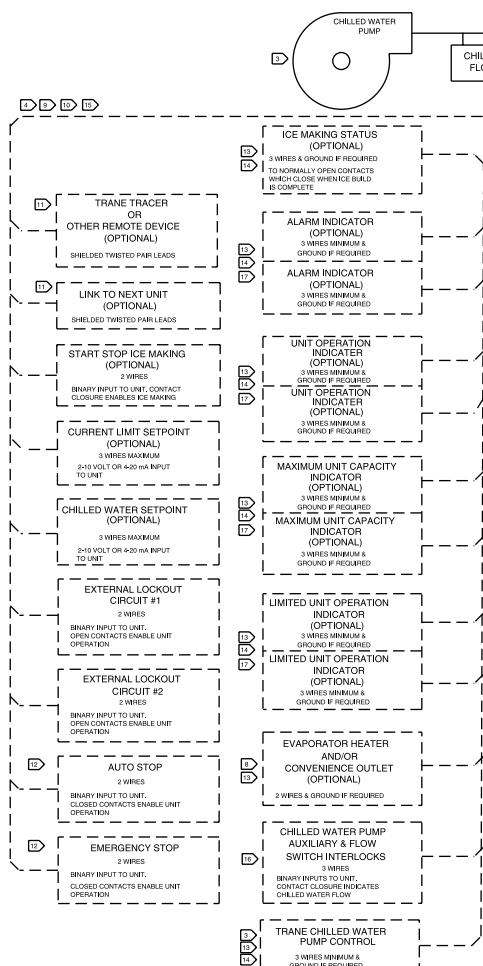
HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRICAL AND REMOTE WIRING CONNECTIONS BEFORE SERVICING.
FAILURE TO DISCONNECT ALL ELECTRICAL POWER BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

⚠️ Avertissement

VOLTAGE HASARDIEUX!
DECONNECTER TOUTES LES SOURCES ELECTRIQUES AVANT LES DÉSJOINTEURS SITUÉS À DISTANCE AVANT D'EFFEKTUER L'ENTRETIEN.
FAIRE DISJOINTER LA SOURCE ELECTRIQUE AVANT D'EFFECTUER L'ENTRETIEN POUR ENTRAINER DES BLESSURES CORPORELLES SEVERES OU LA MORT.

⚠️ CAUTION

USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT DESIGNED TO CONNECT 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 60HZ 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 16 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 FOR A GIVEN SIZE: 14 AWG, 500 FT; 16 AWG, 200 FT; 18 AWG, 1000FT
 11. SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (IUM), 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 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 VOL 60HZ PRODUCTS AND 15 AMPS ON 220 VOL 50HZ 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 COMPATIBLE 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 PROGRAMMABLE, 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 TO 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.

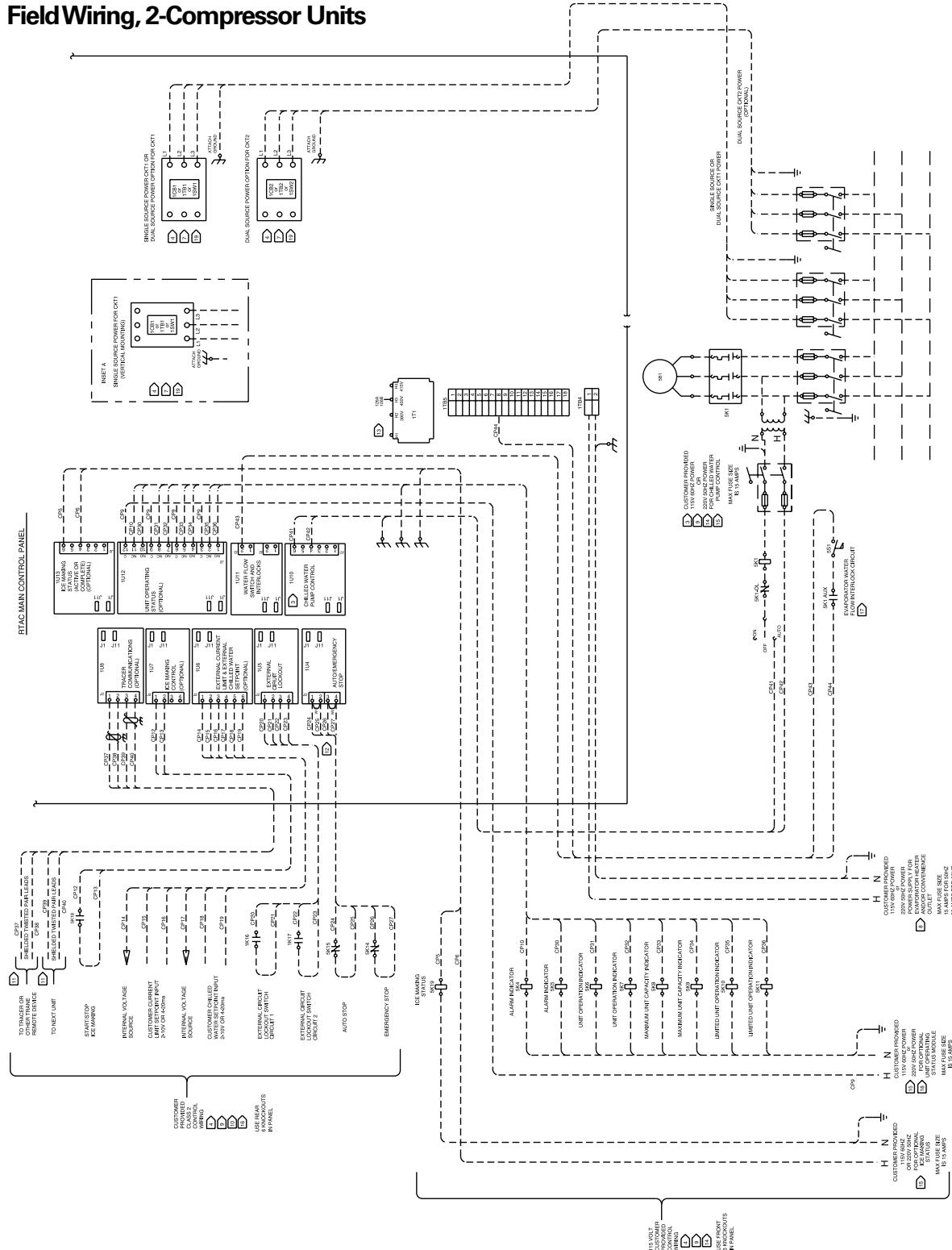


TRANE®

Electrical Data and Connection

Typical Wiring Diagram

Field Wiring, 2-Compressor Units





Electrical Data and Connection

Typical Wiring Diagram

FieldWiring 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 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 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 HORIZONTALLY. REQUIRED PHASING FOR HORIZONTAL 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 PROGRAMMABLE. 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 CURRENT 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.
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 CHART 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 (U10, U12, & U13) 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 PROGRAMMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

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		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

⚠ 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!

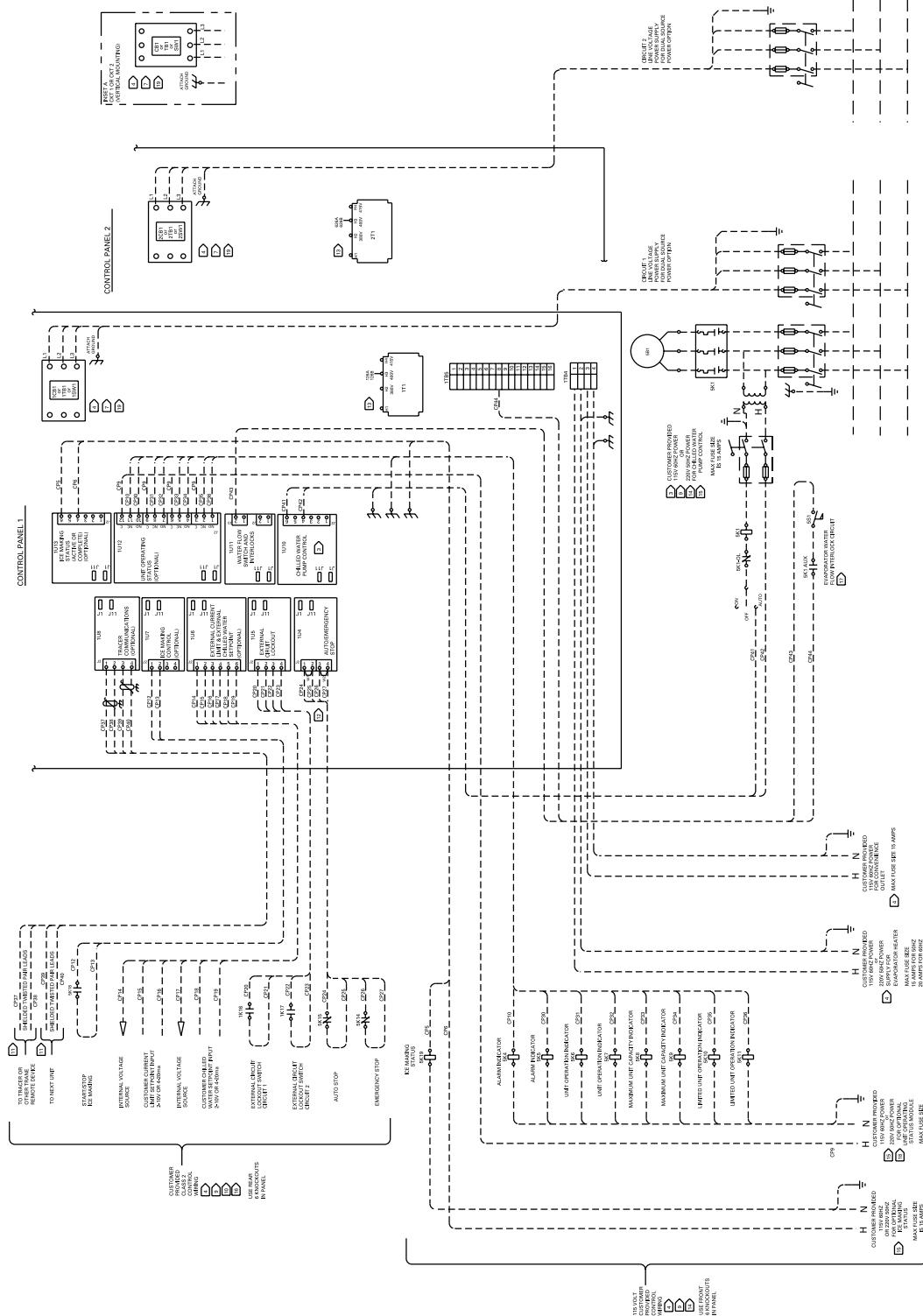
Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.



Electrical Data and Connection

Typical Wiring Diagram

Field Wiring, 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 CURRENT 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.

5. 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.
8. 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 COMPATIBLE 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 PROGRAMMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

REPLACEMENT FUSE SIZES

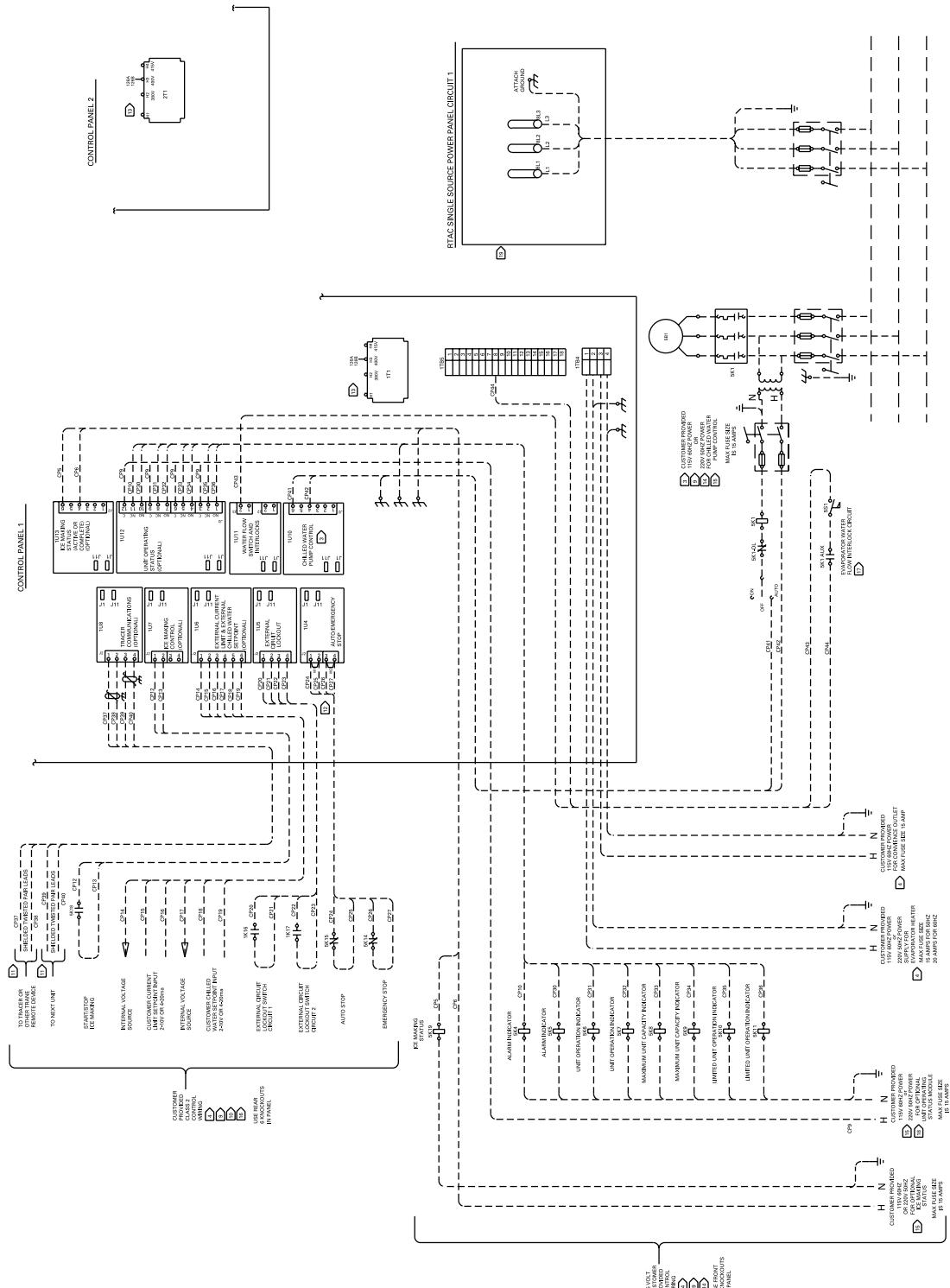
FUSE PROTECT FUNCTION	UNIT SIZE	UNIT VOLTAGE	DESIGNATION	VOLTS	CLASS	AMPS
CONDENSER FANS	250 TO 500	ALL	1F1-1F6/1F23-1F28/2F7-2F12/2F23-2F28	600	R	40
CONTROL POWER TRANSFORMER PRIMARY		200/60	1F13,1F14/2F13,2F14		CC	6.25
		230/60				6
		380/60				3.5
		460/60				5
		575/60				4
		400/50				5
CONTROL 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



Electrical Data and Connection

Typical Wiring Diagram

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 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.
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.
8. 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 JUMPED 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 PROGRAMMABLE. 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 TO 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.

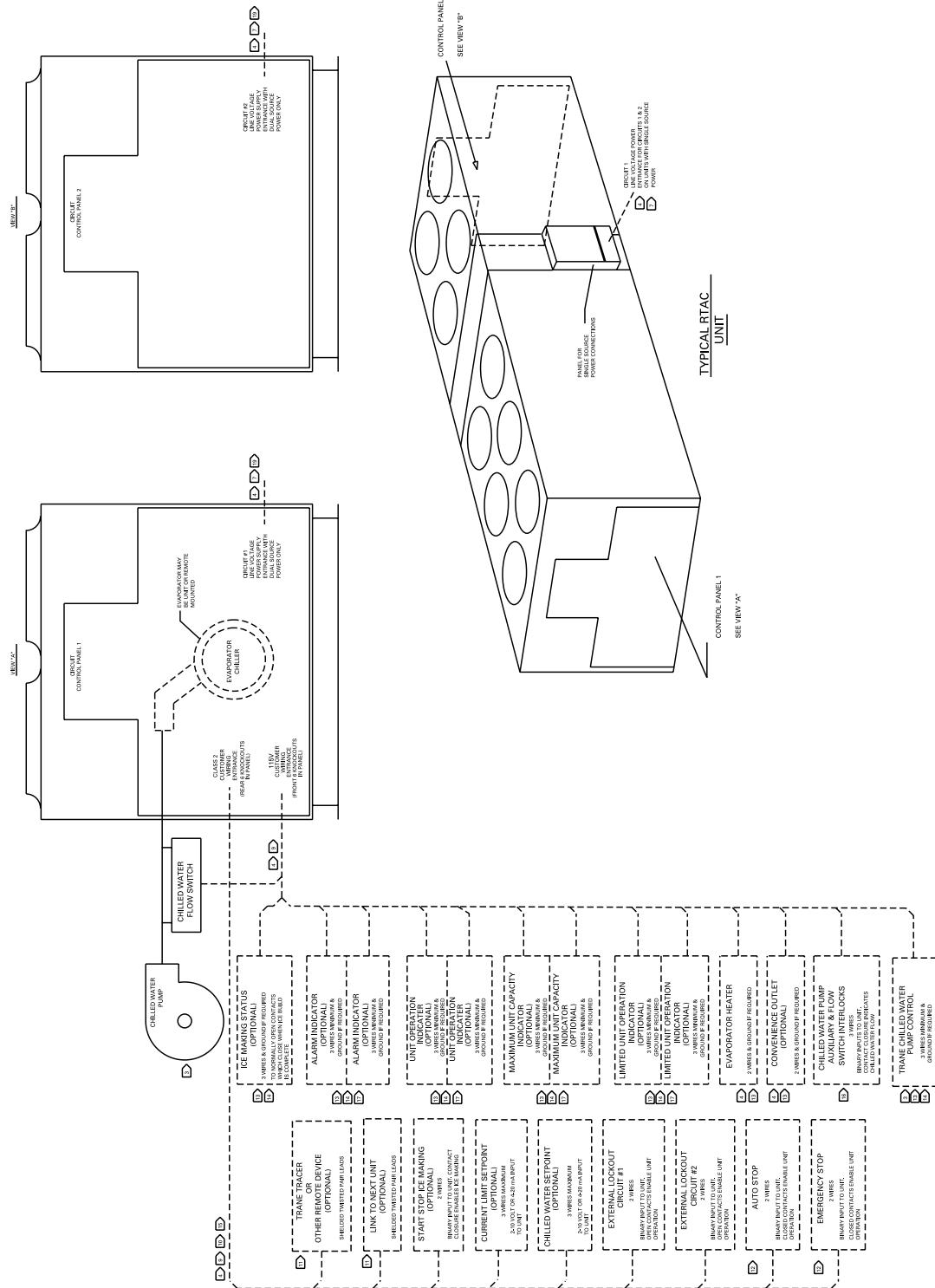


TRANE®

Electrical Data and Connection

Field Layout

Field Layout, 3- & 4-Compressor Units



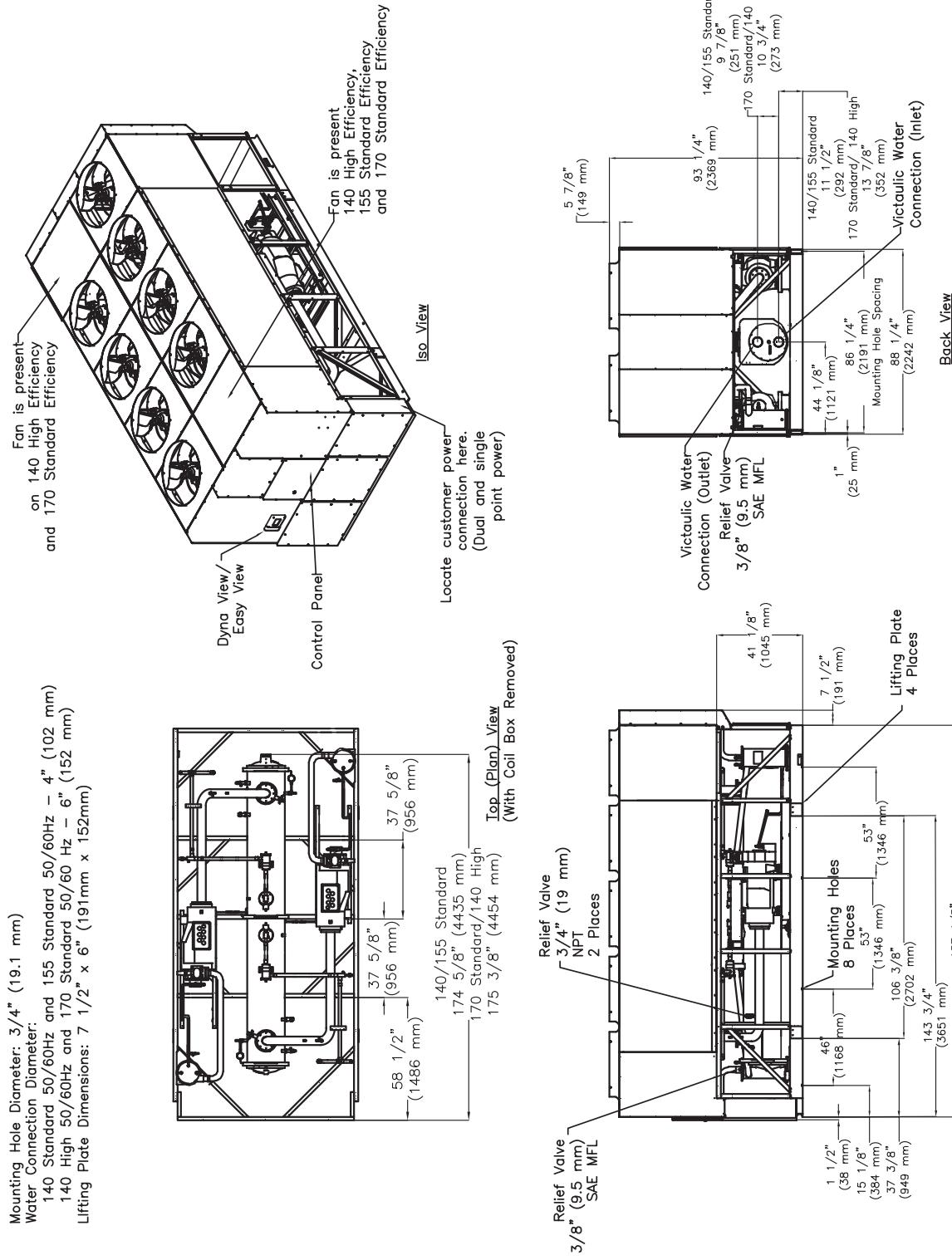


TRANE®

Dimensions

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

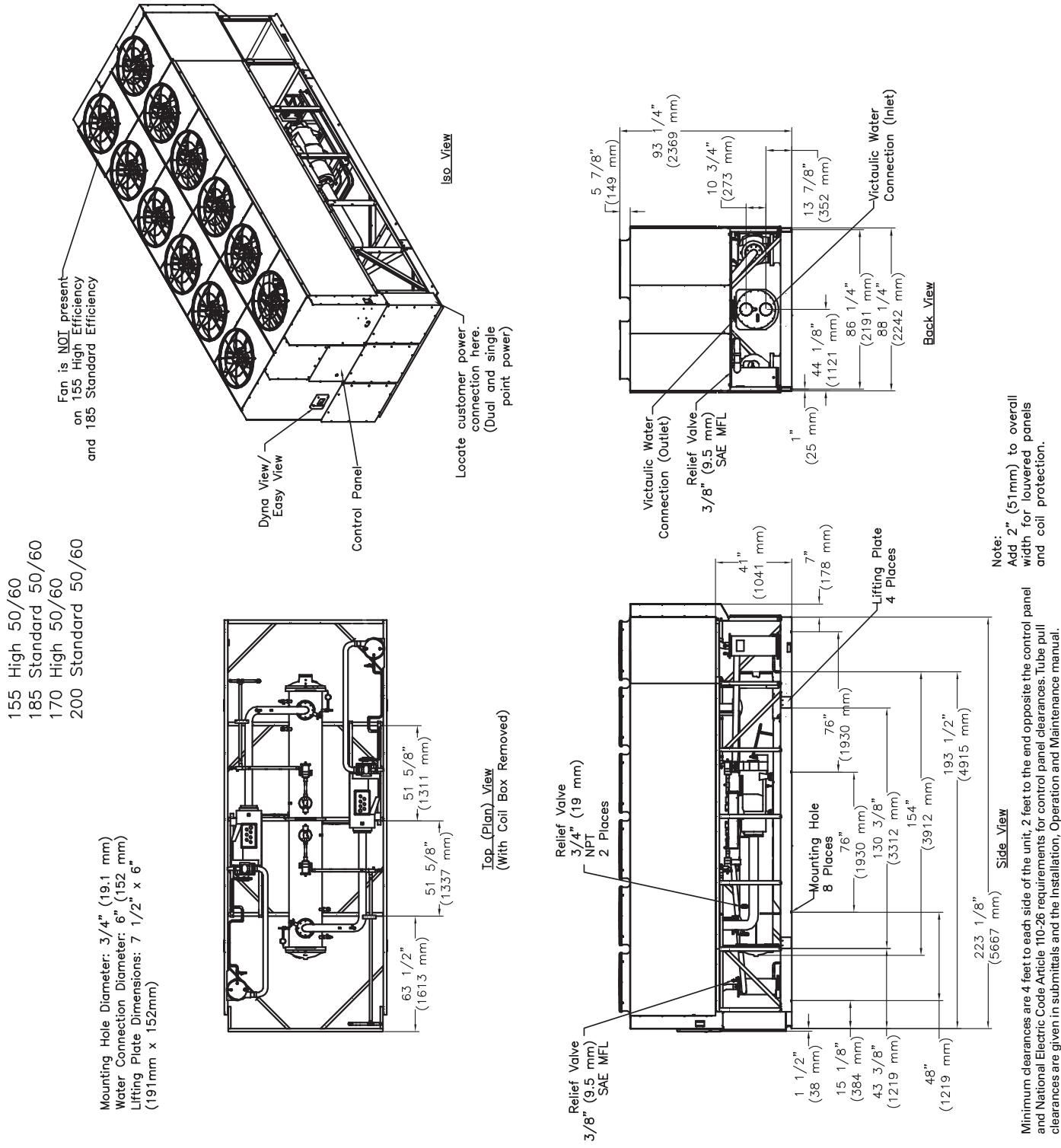
Mounting Hole Diameter: 3/4" (19.1 mm)
 Water Connection Diameter:
 140 Standard 50/60Hz and 155 Standard 50/60Hz – 4" (102 mm)
 140 High 50/60Hz and 170 Standard 50/60 Hz – 6" (152 mm)
 Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)



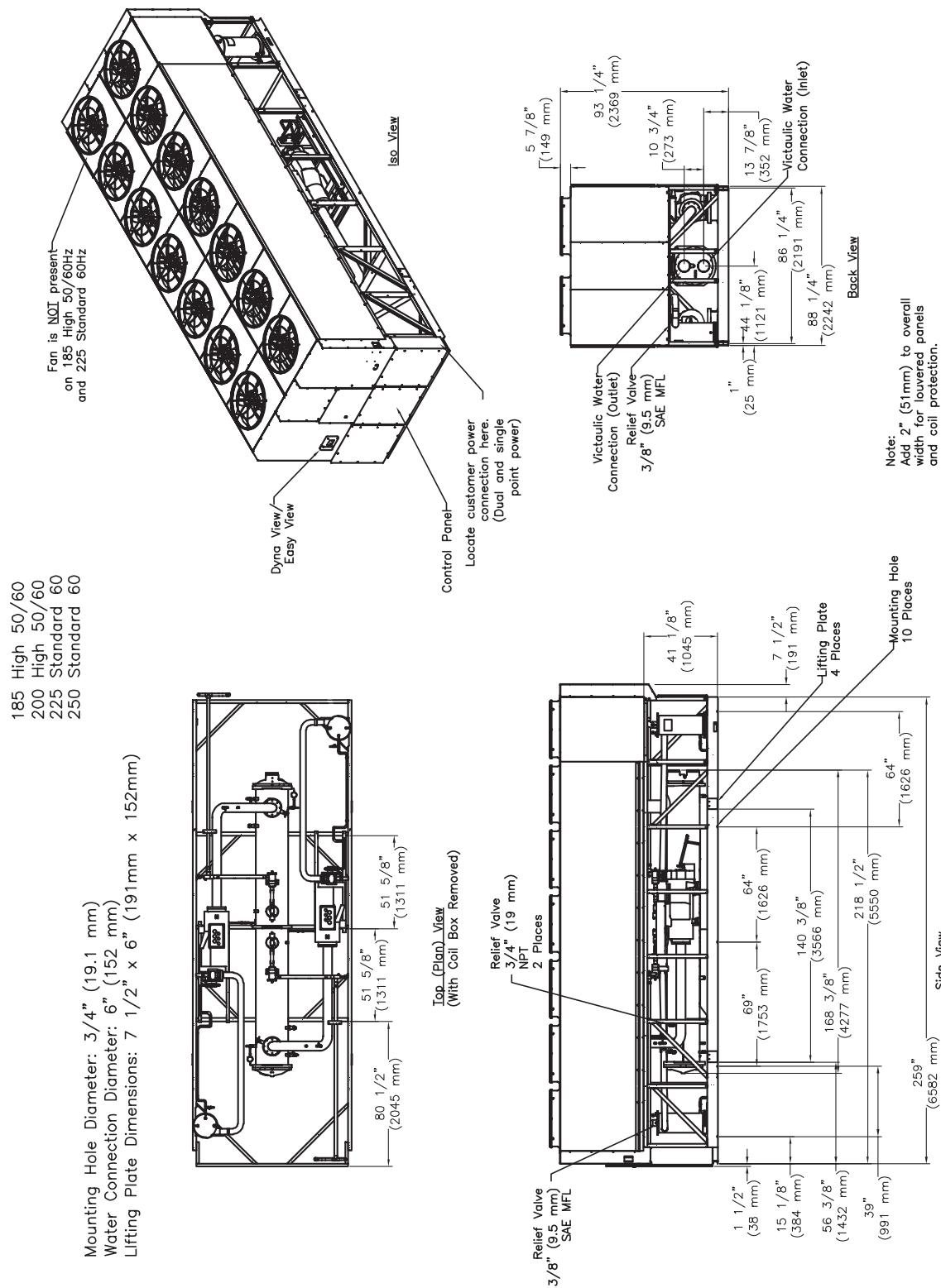
Note:
 Add 2" (51mm) to overall width for louvered panels and coil protection.

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



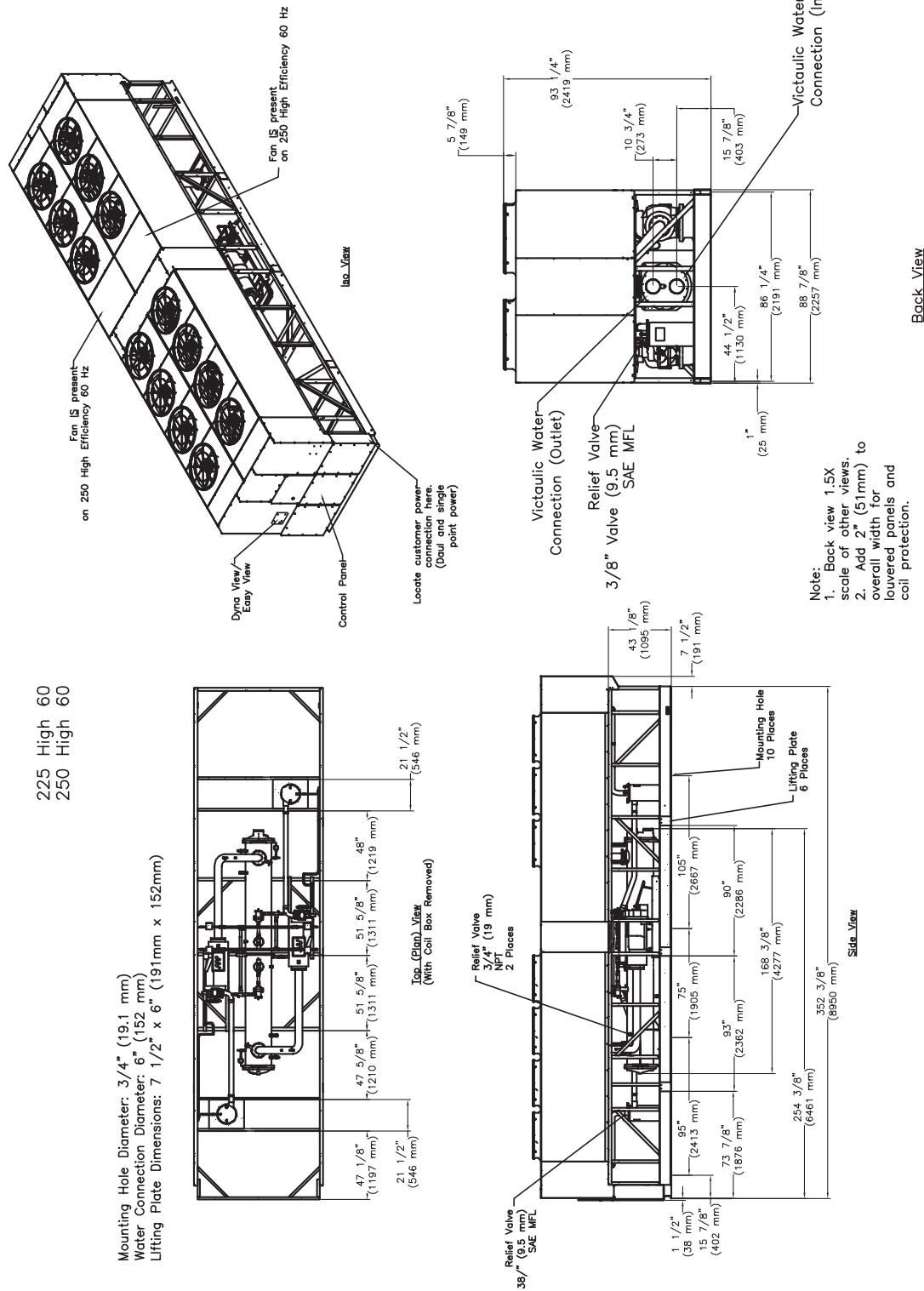
Dimensions





TRANE®

Dimensions

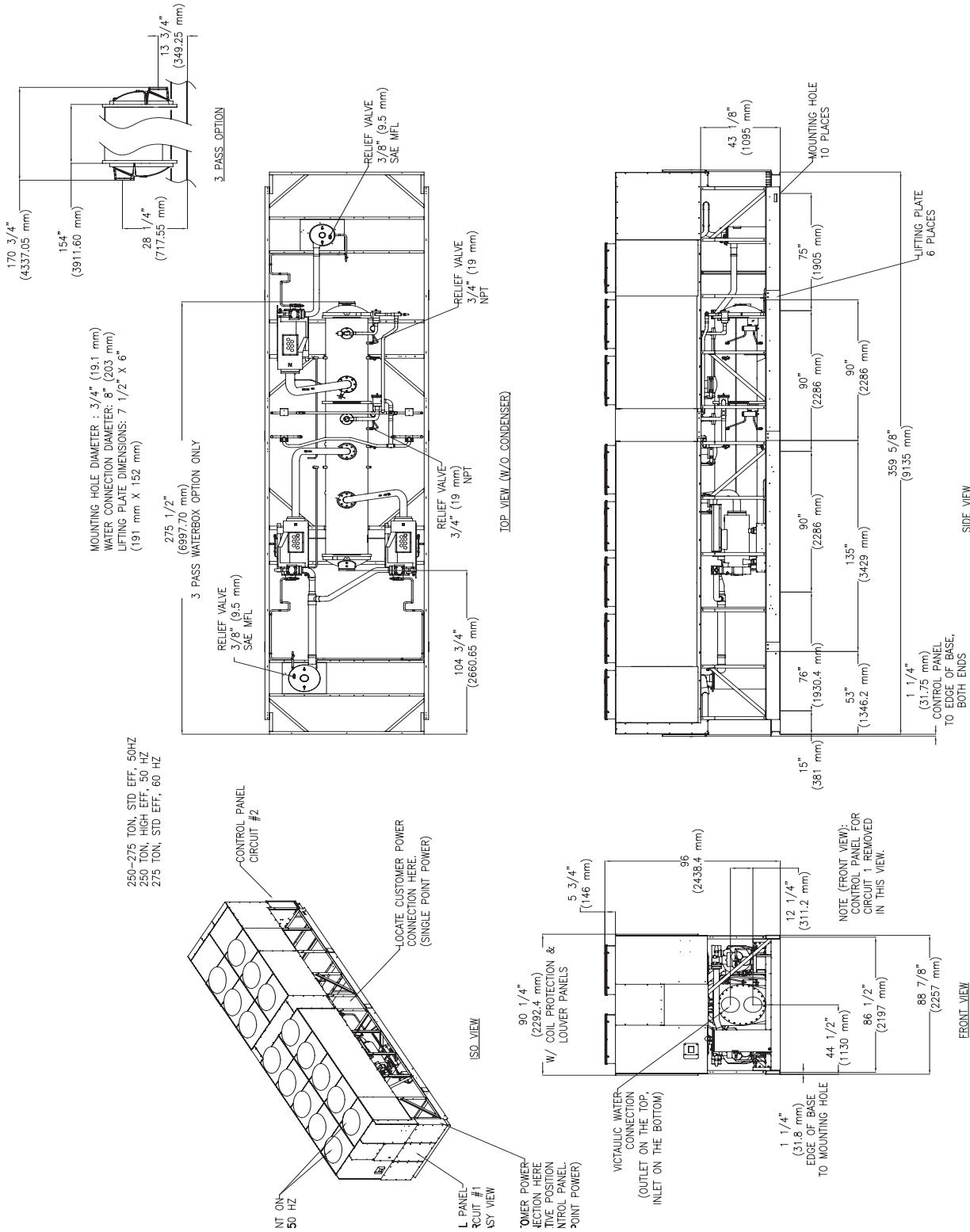


Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-28 requirements for control panel clearances. Tube pull clearances are given in submittals and the Installation, Operation and Maintenance manual.



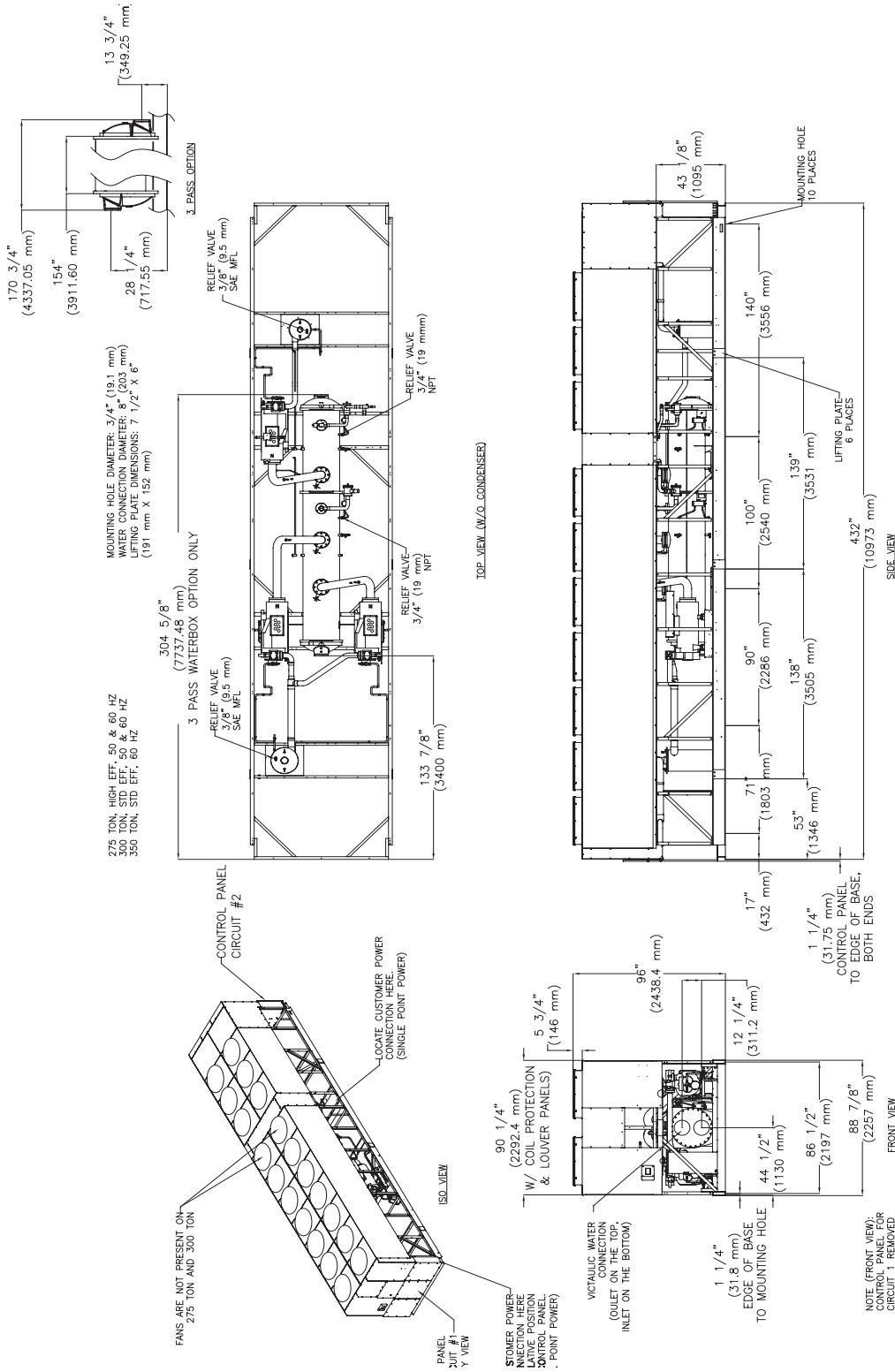
TRANE®

Dimensions



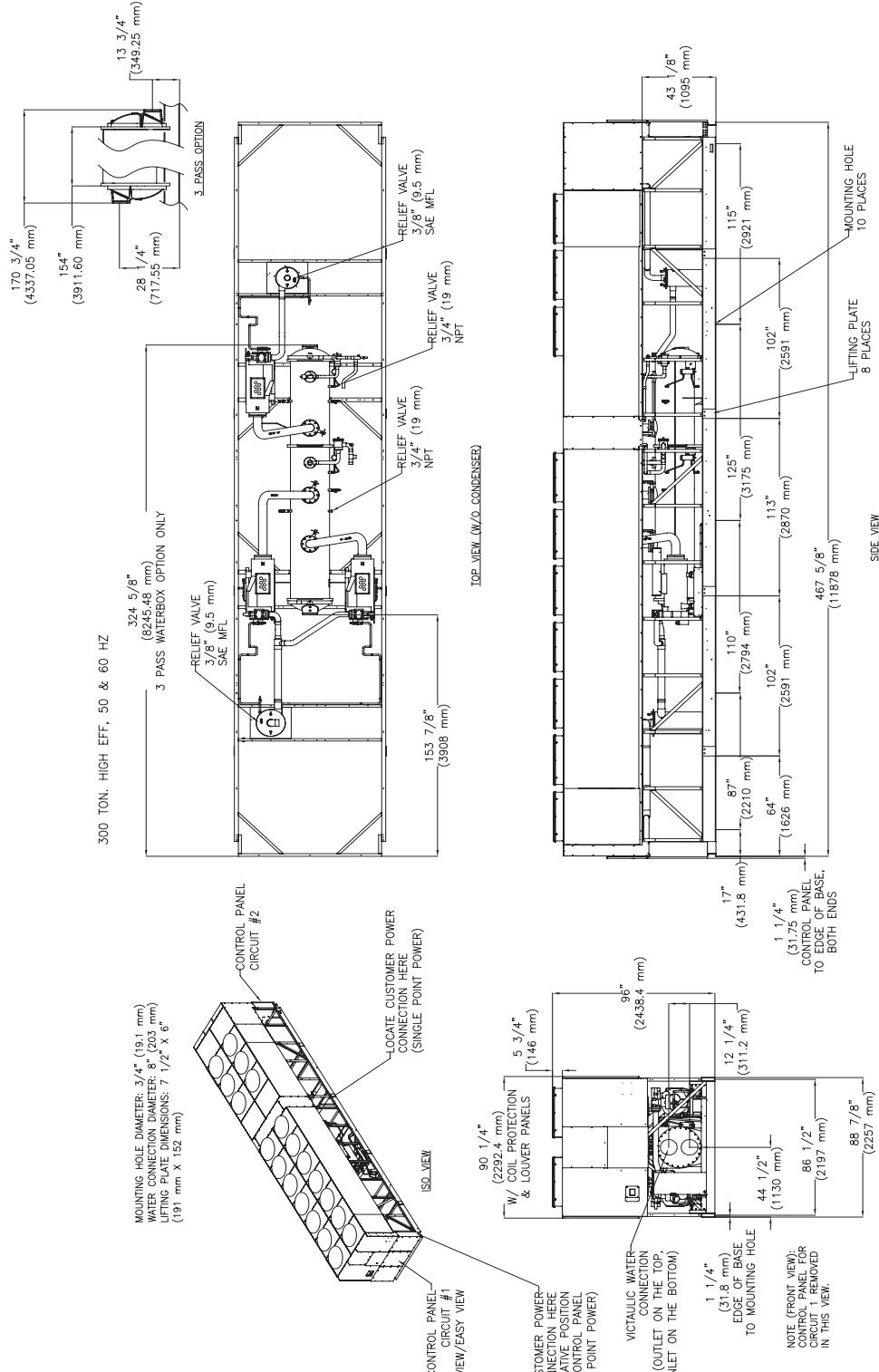
Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends. Tube pull clearances are given in submittals and the Installation, Operations and Maintenance manual.

Dimensions



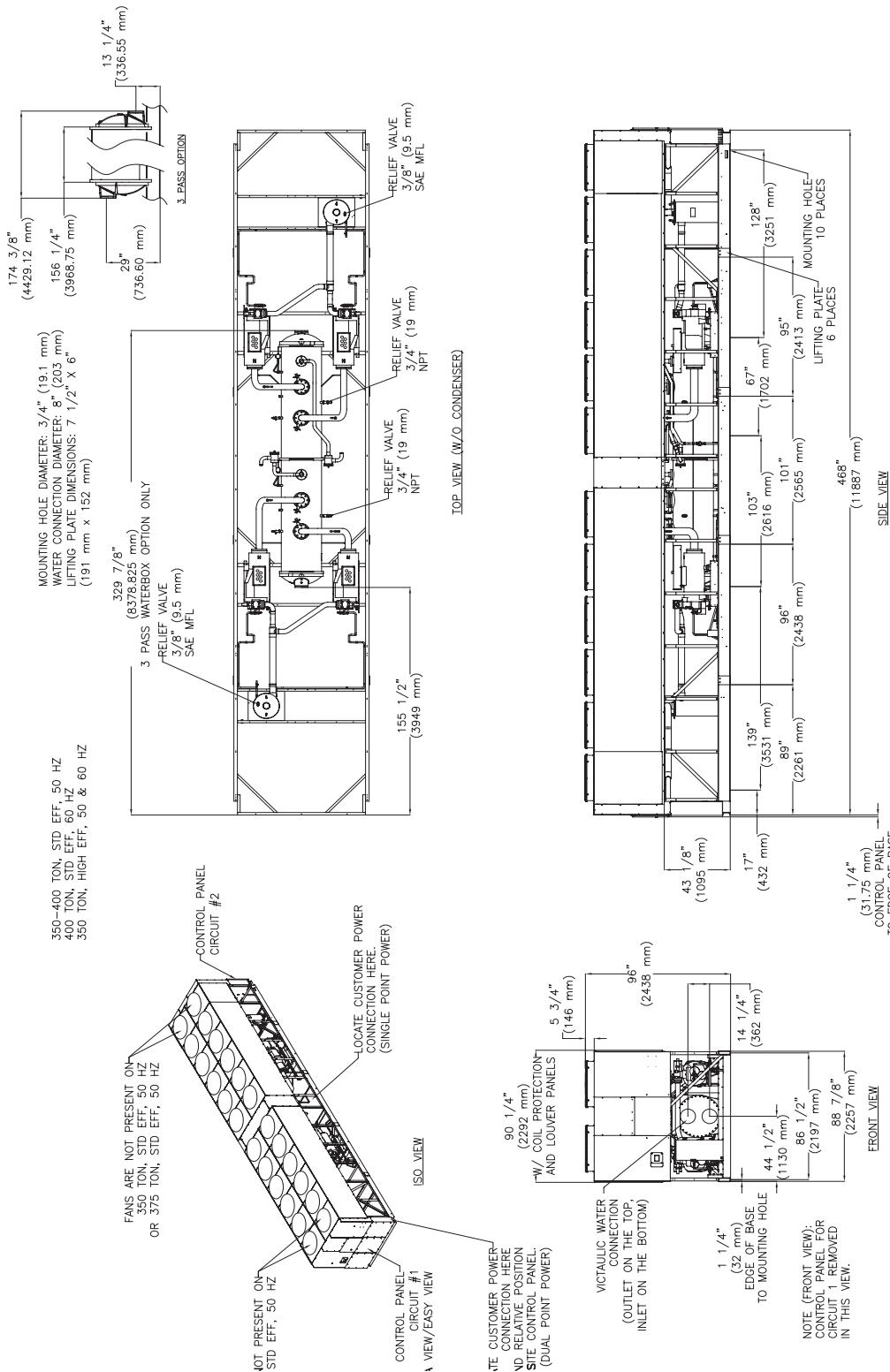
Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends. Tube pull clearances are given in submittals and the Installation, Operation and Maintenance manual.

Dimensions



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

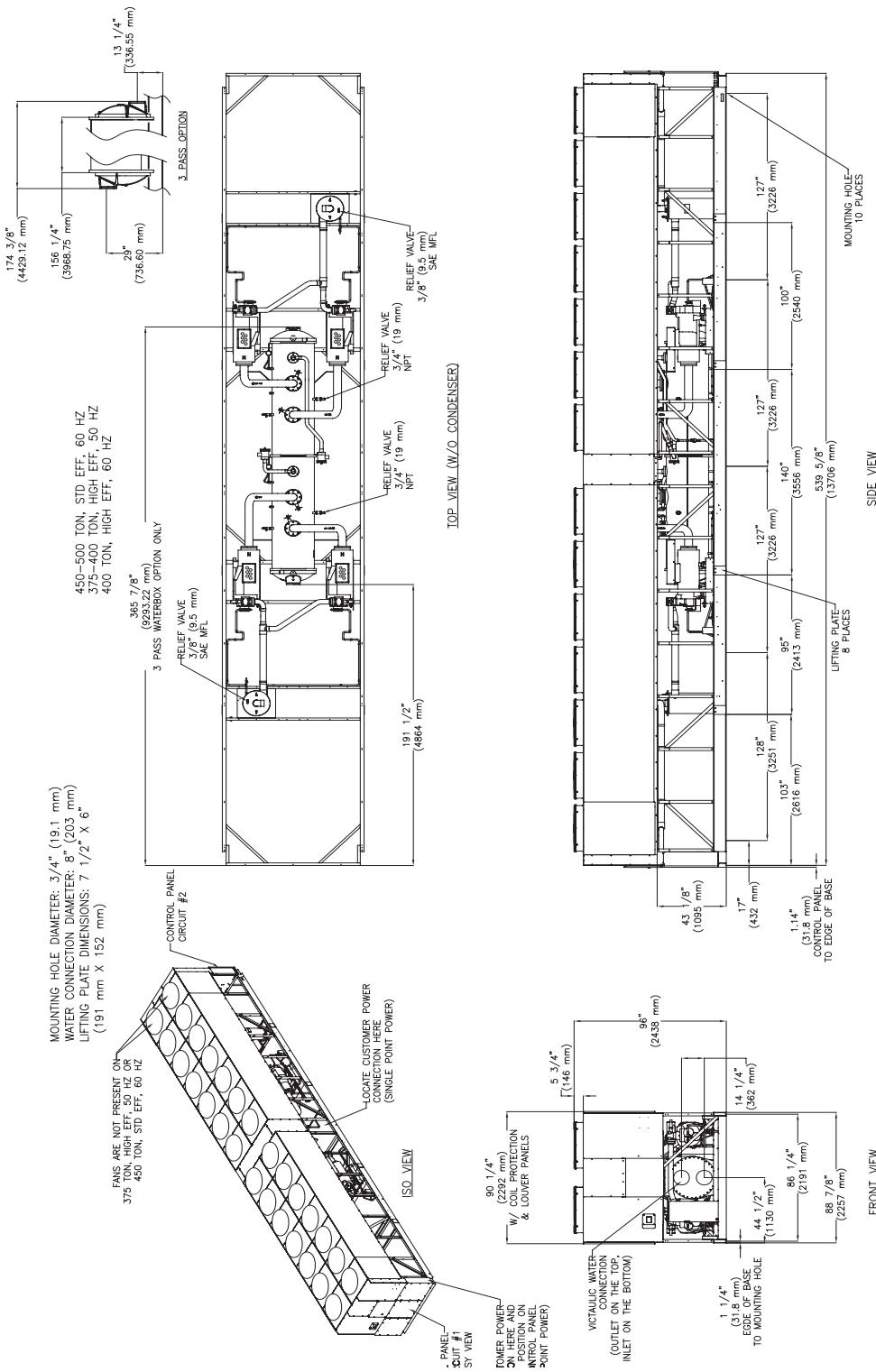


Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends. Tube pull clearances are given in submittals and the Installation, Operation and Maintenance manual.



TRANE®

Dimensions



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.



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

Notes:

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

Unit Top (Plan) View

Control Panel	O 2	O 4	O 6	O 8	O 10
	1 O	3 O	5 O	7 O	9 O

Unit Top (Plan) View

Control Panel #1	O 2	O 4	O 6	O 8	O 10	Control Panel #2
	1 O	3 O	5 O	7 O	9 O	



Weights

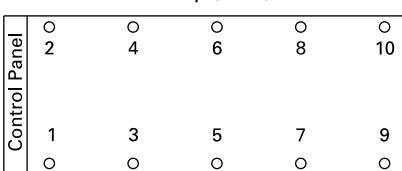
Table W-1. Aluminum fin unit weights (50 Hz units)

Unit Size	Units	Isolator Location										Operating Weight	Shipping Weight
		1	2	3	4	5	6	7	8	9	10		
RTAC 140 STD	lbs.	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

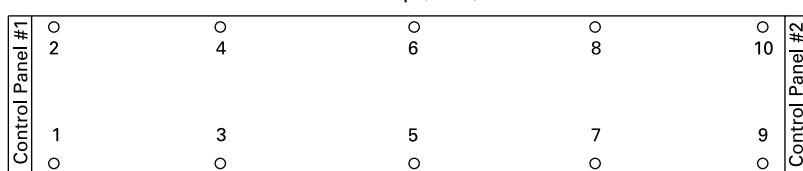
Notes:

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

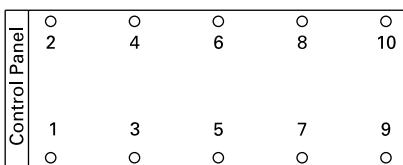
Table W-1. Copper fin unit weights (60 Hz units)

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

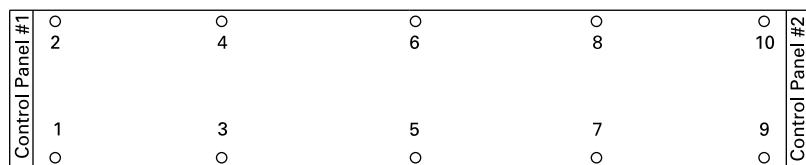
Notes:

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

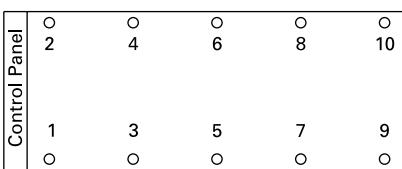
Table W-1. Copper fin unit weights (50 Hz units)

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

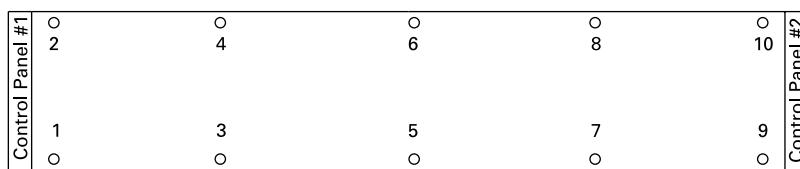
Notes:

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:	To Convert From:	To:	Multiply By:
Length			Energy and Power and Capacity		
Feet (ft)	meters (m)	0.30481	British Thermal Units (BTUH)	Kilowatt (kW)	0.000293
Inches (In)	millimeters (mm)	25.4	British Thermal Units (BTU)	KCalorie (Kcal)	0.252
Area			Tons (refrig, effect)	Kilowatt (refrig, effect)	3.516
Square Feet (ft ²)	square meters (m ²)	0.093	Tons (refrig, effect)	Kilocalories per hour (Kcal/hr)	3024
Square Inches (In ²)	square millimeters (mm ²)	645.2	Horsepower	Kilowatt (kW)	0.7457
Volume			Pressure		
Cubic Feet (ft ³)	Cubic meters (m ³)	0.0283	Feet of water (ftH ₂ O)	Pascals (PA)	2990
Cubic Inches (In ³)	Cubic mm (mm ³)	16387	Inches of water (inH ₂ O)	Pascals (PA)	249
Gallons (gal)	litres (l)	3.785	Pounds per square inch (PSI)	Pascals (PA)	6895
Gallons (gal)	cubic meters (m ³)	0.003785	PSI	Bar or KG/CM ²	6.895 × 10 ⁻²
Flow			Weight		
Cubic feet/min (cfm)	cubic meters/second (m ³ /s)	0.000472	Ounces (oz)	Kilograms (kg)	0.02835
Cubic Feet/min (cfm)	cubic meters/hr (m ³ /hr)	1.69884	Pounds (lbs)	Kilograms (Kg)	0.4536
Gallons/minute (GPM)	cubic meters/hr (m ³ /hr)	0.2271	Fouling factors for heat exchangers		
Gallons/minute (GPM)	litres/second (l/s)	0.06308	0.00075 ft ² °F hr/BTU	= 0.132 m ² °K/kW	
Velocity			0.00025 ft ² °F hr/BTU	= 0.044 m ² °K/kW	
Feet per minute (ft/m)	meters per second (m/s)	0.00508			
Feet per second (ft/s)	meters per second (m/s)	0.3048			

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 Centigrade is given, read degrees Fahrenheit to the right. If degrees Fahrenheit is given, read degrees Centigrade to the left.

Temperature			Temperature			Temperature			Temperature			Temperature		
°C	C or F	°F	°C	C or F	°F	°C	C or F	°F	°C	C or F	°F	°C	C or F	°F
-40.0	-40	-40.0	-15.0	+ 5	+ 41.0	+ 10.0	+ 50	+ 122.0	+ 35.0	+ 95	+ 203.0	+ 60.0	+ 140	+ 284.0
-39.4	-39	-38.2	-14.4	+ 6	+ 42.8	+ 10.6	+ 51	+ 123.8	+ 35.6	+ 96	+ 204.8	+ 60.6	+ 141	+ 285.8
-38.9	-38	-36.4	-13.9	+ 7	+ 44.6	+ 11.1	+ 52	+ 125.6	+ 36.1	+ 97	+ 206.6	+ 61.1	+ 142	+ 287.6
-38.3	-37	-34.6	-13.3	+ 8	+ 46.4	+ 11.7	+ 53	+ 127.4	+ 36.7	+ 98	+ 208.4	+ 61.7	+ 143	+ 289.4
-37.8	-36	-32.8	-12.8	+ 9	+ 48.2	+ 12.2	+ 54	+ 129.2	+ 37.2	+ 99	+ 210.2	+ 62.2	+ 144	+ 291.2
-37.2	-35	-31.0	-12.2	+ 10	+ 50.0	+ 12.8	+ 55	+ 131.0	+ 37.8	+ 100	+ 212.0	+ 62.8	+ 145	+ 293.0
-36.7	-34	-29.2	-11.7	+ 11	+ 51.8	+ 13.3	+ 56	+ 132.8	+ 38.3	+ 101	+ 213.8	+ 63.3	+ 146	+ 294.8
-36.1	-33	-27.4	-11.1	+ 12	+ 53.6	+ 13.9	+ 57	+ 134.6	+ 38.9	+ 102	+ 215.6	+ 63.9	+ 147	+ 296.6
-35.6	-32	-25.6	-10.6	+ 13	+ 55.4	+ 14.4	+ 58	+ 136.4	+ 39.4	+ 103	+ 217.4	+ 64.4	+ 148	+ 298.4
-35.0	-31	-23.8	-10.0	+ 14	+ 57.2	+ 15.0	+ 59	+ 138.2	+ 40.0	+ 104	+ 219.2	+ 65.0	+ 149	+ 300.2
-34.4	-30	-22.0	-9.4	+ 15	+ 59.0	+ 15.6	+ 60	+ 140.0	+ 40.6	+ 105	+ 221.0	+ 65.6	+ 150	+ 302.0
-33.9	-29	-20.2	-8.9	+ 16	+ 60.8	+ 16.1	+ 61	+ 141.8	+ 41.1	+ 106	+ 222.8	+ 66.1	+ 151	+ 303.8
-33.3	-28	-18.4	-8.3	+ 17	+ 62.6	+ 16.7	+ 62	+ 143.6	+ 41.7	+ 107	+ 224.6	+ 66.7	+ 152	+ 305.6
-32.8	-27	-16.6	-7.8	+ 18	+ 64.4	+ 17.2	+ 63	+ 145.4	+ 42.2	+ 108	+ 226.4	+ 67.2	+ 153	+ 307.4
-32.2	-26	-14.8	-7.2	+ 19	+ 66.2	+ 17.8	+ 64	+ 147.2	+ 42.8	+ 109	+ 228.2	+ 67.8	+ 154	+ 309.2
-31.7	-25	-13.0	-6.7	+ 20	+ 68.0	+ 18.3	+ 65	+ 149.0	+ 43.3	+ 110	+ 230.0	+ 68.3	+ 155	+ 311.0
-31.1	-24	-11.2	-6.1	+ 21	+ 69.8	+ 18.9	+ 66	+ 150.8	+ 43.9	+ 111	+ 231.8	+ 68.9	+ 156	+ 312.8
-30.6	-23	-9.4	-5.5	+ 22	+ 71.6	+ 19.4	+ 67	+ 152.6	+ 44.4	+ 112	+ 233.6	+ 69.4	+ 157	+ 314.6
-30.0	-22	-7.6	-5.0	+ 23	+ 73.4	+ 20.0	+ 68	+ 154.4	+ 45.0	+ 113	+ 235.4	+ 70.0	+ 158	+ 316.4
-29.4	-21	-5.8	-4.4	+ 24	+ 75.2	+ 20.6	+ 69	+ 156.2	+ 45.6	+ 114	+ 237.2	+ 70.6	+ 159	+ 318.2
-28.9	-20	-4.0	-3.9	+ 25	+ 77.0	+ 21.1	+ 70	+ 158.0	+ 46.1	+ 115	+ 239.0	+ 71.1	+ 160	+ 320.0
-28.3	-19	-2.2	-3.3	+ 26	+ 78.8	+ 21.7	+ 71	+ 159.8	+ 46.7	+ 116	+ 240.8	+ 71.7	+ 161	+ 321.8
-27.8	-18	-0.4	-2.8	+ 27	+ 80.6	+ 22.2	+ 72	+ 161.6	+ 47.2	+ 117	+ 242.6	+ 72.2	+ 162	+ 323.6
-27.2	-17	+ 1.4	-2.2	+ 28	+ 82.4	+ 22.8	+ 73	+ 163.4	+ 47.8	+ 118	+ 244.4	+ 72.8	+ 163	+ 325.4
-26.7	-16	+ 3.2	-1.7	+ 29	+ 84.2	+ 23.3	+ 74	+ 165.2	+ 48.3	+ 119	+ 246.2	+ 73.3	+ 164	+ 327.2
-26.1	-15	+ 5.0	-1.1	+ 30	+ 86.0	+ 23.9	+ 75	+ 167.0	+ 48.9	+ 120	+ 248.0	+ 73.9	+ 165	+ 329.0
-25.6	-14	+ 6.8	-0.6	+ 31	+ 87.8	+ 24.4	+ 76	+ 168.8	+ 49.4	+ 121	+ 249.8	+ 74.4	+ 166	+ 330.8
-25.0	-13	+ 8.6	0.0	+ 32	+ 89.6	+ 25.0	+ 77	+ 170.6	+ 50.0	+ 122	+ 251.6	+ 75.0	+ 167	+ 332.6
-24.4	-12	+ 10.4	+ 0.6	+ 33	+ 91.4	+ 25.6	+ 78	+ 172.4	+ 50.6	+ 123	+ 253.4	+ 75.6	+ 168	+ 334.4
-23.9	-11	+ 12.2	+ 1.1	+ 34	+ 93.2	+ 26.1	+ 79	+ 174.2	+ 51.1	+ 124	+ 255.2	+ 76.1	+ 169	+ 336.2
-23.3	-10	+ 14.0	+ 1.7	+ 35	+ 95.0	+ 26.7	+ 80	+ 176.0	+ 51.7	+ 125	+ 257.0	+ 76.7	+ 170	+ 338.0
-22.8	-9	+ 15.8	+ 2.2	+ 36	+ 96.8	+ 27.2	+ 81	+ 177.8	+ 52.2	+ 126	+ 258.8	+ 77.2	+ 171	+ 339.8
-22.2	-8	+ 17.6	+ 2.8	+ 37	+ 98.6	+ 27.8	+ 82	+ 179.6	+ 52.8	+ 127	+ 260.6	+ 77.8	+ 172	+ 341.6
-21.7	-7	+ 19.4	+ 3.3	+ 38	+ 100.4	+ 28.3	+ 83	+ 181.4	+ 53.3	+ 128	+ 262.4	+ 78.3	+ 173	+ 343.4
-21.1	-6	+ 21.2	+ 3.9	+ 39	+ 102.2	+ 28.9	+ 84	+ 183.2	+ 53.9	+ 129	+ 264.2	+ 78.9	+ 174	+ 345.2
-20.6	-5	+ 23.0	+ 4.4	+ 40	+ 104.0	+ 29.4	+ 85	+ 185.0	+ 54.4	+ 130	+ 266.0	+ 79.4	+ 175	+ 347.0
-20.0	-4	+ 24.8	+ 5.0	+ 41	+ 105.8	+ 30.0	+ 86	+ 186.8	+ 55.0	+ 131	+ 267.8	+ 80.0	+ 176	+ 348.8
-19.4	-3	+ 26.6	+ 5.5	+ 42	+ 107.6	+ 30.6	+ 87	+ 188.6	+ 55.6	+ 132	+ 269.6	+ 80.6	+ 177	+ 350.6
-18.9	-2	+ 28.4	+ 6.1	+ 43	+ 109.4	+ 31.1	+ 88	+ 190.4	+ 56.1	+ 133	+ 271.4	+ 81.1	+ 178	+ 352.4
-18.3	-1	+ 30.2	+ 6.7	+ 44	+ 111.2	+ 31.7	+ 89	+ 192.2	+ 56.7	+ 134	+ 273.2	+ 81.7	+ 179	+ 354.2
-17.8	0	+ 32.0	+ 7.2	+ 45	+ 113.0	+ 32.2	+ 90	+ 194.0	+ 57.2	+ 135	+ 275.0	+ 82.2	+ 180	+ 356.0
-17.2	+ 1	+ 33.8	+ 7.8	+ 46	+ 114.8	+ 32.8	+ 91	+ 195.8	+ 57.8	+ 136	+ 276.8	+ 82.8	+ 181	+ 357.8
-16.7	+ 2	+ 35.6	+ 8.3	+ 47	+ 116.6	+ 33.3	+ 92	+ 197.6	+ 58.3	+ 137	+ 278.6	+ 83.3	+ 182	+ 359.8
-16.1	+ 3	+ 37.4	+ 8.9	+ 48	+ 118.4	+ 33.9	+ 93	+ 199.4	+ 58.9	+ 138	+ 280.4	+ 83.9	+ 183	+ 361.4
-15.6	+ 4	+ 39.2	+ 9.4	+ 49	+ 120.2	+ 34.4	+ 94	+ 201.2	+ 59.4	+ 139	+ 282.2	+ 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.



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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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