



# Packaged Cooling with Electric Heat Rooftop Units

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**Voyager™**  
**12½ - 25 Tons - 60 Hz**



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October 2004

RT-PRC002-EN



## Introduction

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# Packaged Rooftop Air Conditioners

Through the years, Trane has designed and developed the most complete line of Packaged Rooftop products available in the market today. Trane was the first to introduce the Micro—microelectronic unit controls—and has continued to improve and revolutionize this design concept.

The ReliaTel control platform offers the same great features and functionality as the original Micro, with additional benefits for greater application flexibility.

Voyager continues to provide the highest standards in quality and reliability, comfort, ease of service, and the performance of Trane light commercial products.

Trane customers demand products that provide exceptional reliability, meet stringent performance requirements, and are competitively priced. Trane delivers with Voyager.

Voyager features cutting edge technologies: reliable compressors, Trane engineered ReliaTel controls, computer-aided run testing, and Integrated Comfort™ Systems. So, whether you're the contractor, the engineer, or the owner you can be certain Voyager Products are built to meet your needs.

It's Hard To Stop A Trane.®



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# Features and Benefits

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## Factory Installed Options

- Black Epoxy Pre-Coated Coils
- Dehumidification Option
- High Efficiency Motors
- High Pressure Cutout
- Hinged Access Doors
- Novar Unit Controls
- Novar Return Air Sensor
- Powered or Unpowered Convenience Outlet
- Supply and/or Return Air Smoke Detector
- Thermal Expansion Valve/Face-Split Evaporator Coil Option
- Through the Base Electrical with Circuit Breaker
- Through the Base Electrical With Disconnect Switch
- Through the Base Utilities Access
- Two-Inch Pleated Filters

## Factory or Field Installed Options

- Clogged Filter/Fan Failure Switch
- Differential Pressure Switches
- Discharge Air Sensing Kit
- Downflow – Economizer
- Electric Heaters
- Froststat
- LonTalk® Communications Interface
- Oversized Motors
- Reference or Comparative Enthalpy
- Tool-less Hail Guards
- Trane Communications Interface (TCI)

## Field Installed Options

- CO<sub>2</sub> Sensing
- Digital Display Zone Sensor
- Dual Thermistor Remote Zone Sensor
- Low Static Drive
- High Static Drive
- Manual Outside Air Damper
- Motorized Outside Air Dampers
- Powered Exhaust
- Downflow – Roof Curb
- Horizontal – Economizer
- Remote Potentiometer
- Ventilation Override Accessory
- Zone Sensors

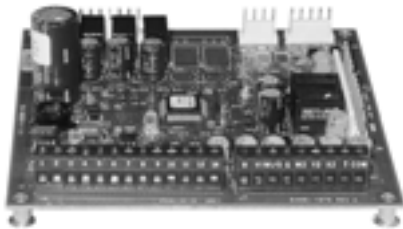
# Features and Benefits

## Easy to Install, Service and Maintain

Because today's owners are very cost-conscious when it comes to service and maintenance, the Trane Voyager was designed with direct input from service contractors. This valuable information helped to design a product that would get the serviceman off the job quicker and save the owner money. Voyager does this by offering:

## Quality and Reliability

### ReliaTel™ Controls (LCI-R)



ReliaTel controls provide unit control for heating, cooling and ventilating utilizing input from sensors that measure outdoor and indoor temperature.

Quality and Reliability are enhanced through ReliaTel control and logic:

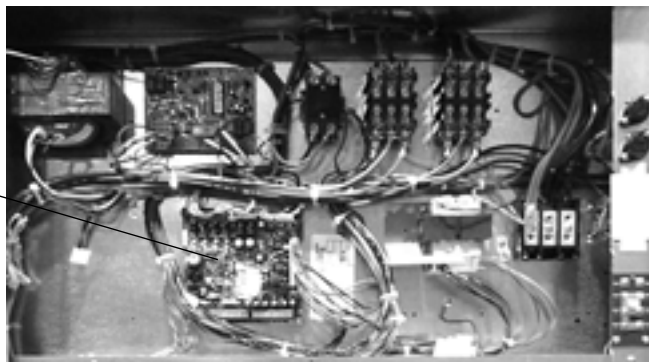
- prevents the unit from short cycling, considerably improving compressor life.
- ensures that the compressor will run for a specific amount of time which allows oil to return for better lubrication, enhancing the reliability of the compressor.

Voyager with ReliaTel reduces the number of components required to operate the unit, thereby reducing possibilities for component failure.

### ReliaTel Makes Installing and Servicing Easy

ReliaTel eliminates the need for field installed anti-shortcycle timer and time delay relays. ReliaTel controls provide these functions as an integral part of the unit. The contractor no longer has to purchase these controls as options and pay to install them.

The wiring of the low voltage connections to the unit and the zone sensors is as easy as 1-1, 2-2, and 3-3. This simplified system makes wiring easier for the installer.



ReliaTel™

### ReliaTel Makes Testing Easy

ReliaTel requires no special tools to run the Voyager unit through its paces. Simply place a jumper between Test 1 and Test 2 terminals on the Low Voltage Terminal Board and the unit will walk through its operational steps automatically.

- The unit automatically returns control to the zone sensor after stepping through the test mode a single time, even if the jumper is left on the unit.

As long as the unit has power and the "system on" LED is lit, ReliaTel is operational. The light indicates that the controls are functioning properly.

ReliaTel features expanded diagnostic capabilities when utilized with Trane Integrated Comfort™ Systems.

Some zone sensor options have central control panel lights which indicate the mode the unit is in and possible diagnostic information (dirty filters for example).

### Other ReliaTel Benefits

The ReliaTel built-in anti-shortcycle timer, time delay relay and minimum "on" time control functions are factory tested to assure proper operation.

ReliaTel softens electrical "spikes" by staging on fans, compressors and heaters.

Intelligent Fallback is a benefit to the building occupant. If a component goes astray, the unit will continue to operate at predetermined temperature setpoint.

Intelligent Anticipation is a standard ReliaTel feature. It functions continuously as ReliaTel and zone sensor(s) work together in harmony to provide much tighter comfort control than conventional electro-mechanical thermostats.

The same ReliaTel Board fits all Voyager Packaged Gas/Electrics, Cooling with Electric Heat, and Heat Pump models. This provides standardization of parts for contractors. Less money is tied up in inventory with ReliaTel.



# Features and Benefits

## Outstanding Standard and Optional Components

### Black Epoxy Pre-Coated Coils

The pre-coated coils are an economical option for protection in mildly corrosive environments.

### Cabinet Integrity

For added water integrity, Voyager has a raised  $1\frac{1}{8}$ " lip around the supply and return of the downflow units to prevent water from blowing into the ductwork.

### Clogged Filter/Fan Failure Switch

A dedicated differential pressure switch is available to achieve active fan failure indication and/or clogged filter indication.

### CO<sub>2</sub> Sensing

The CO<sub>2</sub> sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO<sub>2</sub> (Carbon Dioxide) in the air. As the CO<sub>2</sub> levels increase, the outside air damper modulates to meet the CO<sub>2</sub> space ventilation requirements. The CO<sub>2</sub> sensor kit is available as a field installed accessory.

### Colored And Numbered Wiring

Save time and money tracing wires and diagnosing the unit.

### Compressors

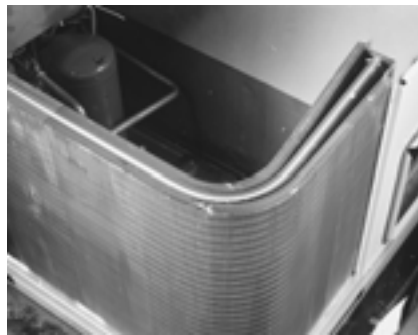
Voyager contains the best compressor technology available to achieve the highest possible performance. Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications. Dual compressors are available on all models.

### Refrigerant Circuits

All Voyager 12 $\frac{1}{2}$ -25 ton units shall have crankcase heaters, low and high pressure controls as standard.

### Condenser Coil

Voyager boasts a patent-pending 1+1+1 condenser coil, permanently gapped for easy cleaning.



### Digital Display Zone Sensor

The Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality of standard zone sensors. This sensor should be utilized with ReliaTel™ controls.

### Discharge Air Sensing Kit

Provides true discharge air sensing in heating models. The kit is functional only with the ReliaTel Options Module.

### Downflow And Horizontal Economizers

The economizers come with three control options — dry bulb is standard, enthalpy and differential enthalpy are optional.

### Dual Thermistor Remote Zone Sensor

This sensor will reduce the total number of remote sensors to obtain space temperature averaging. This sensor should be utilized with ReliaTel controls.

### Factory Built Roof Curbs

Available for downflow units. Only two roof curbs for the entire Voyager line simplifies curb selection.

### Fresh Air

0 - 25% manual or 0 - 50% motorized outside air hoods are available.

### High Static Drive Accessory

Available on many models, this high static drive accessory extends the capability of the standard motor. Avoid expensive motors and operating costs by installing this optimized sheave accessory.

### Hinged Access Doors

These doors permit easy access to the filter, fan/heat, and compressor/control sections. They reduce the potential roof damage from screws or sharp access door corners.

### LonTalk® Communications Interface

The LonTalk communications interface allows the unit to communicate as a Tracer™ LCI-V device or directly with generic LonTalk Network Building Automation System Controls.

### Power Exhaust Option

This option is available on downflow units and provides exhaust of the return air, when using a downflow economizer, to maintain proper building pressurization. Great for relieving most building overpressurization problems.

### Quick-Access Panels

Remove three or fewer screws for access to the standardized internal components and wiring.

### Quick-Adjust Idler Arm

With the Quick-Adjust Idler Arm, the belt and sheaves can be quickly adjusted without moving the mounted fan motor. The result is a major savings in time and money.



# Features and Benefits

**Reference or Comparative Enthalpy**  
Measures and communicates humidity while maximizing comfort control.

**Sloped Drain Pans**  
Standard on every unit.

**Standardized Components**  
Components are placed in the same location on all Voyager units. Familiarize yourself with one Voyager and you are familiar with every Voyager.

Due to standardized components throughout the Voyager line, contractors/owners can stock fewer parts.

**Supply and/or Return Air Smoke Detector**

With this option installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. Return Air Smoke Detectors require minimum allowable airflow when used with certain models.



**Tool-less Hail Guards**  
Tool-less, hail protection quality coil guards shall be either

factory or field-installed for condenser coil protection. This option protects the condenser coil from vandalism and/or hail damage.



**Trane Communication Interface (TCI)**  
Available factory or field installed. This module when applied with the ReliaTel™ easily interfaces with Trane's Integrated Comfort™ System.

**VariTrac**  
When Trane's changeover VAV System for light commercial applications is coupled with Voyager, it provides the latest in technological advances for comfort management systems and can allow thermostat control in every zone served by VariTrac.

**Ventilation Override Accessory**  
With the Ventilation Override Accessory installed, the unit can be set to transition to up to 3 different pre-programmed sequences for Smoke Purge, Pressurization, and Exhaust. The transition occurs when a binary input on the RTOM is closed (shorted). This would typically be a hard wired relay output from a smoke detector or fire control panel. The ventilation override kit is available as a field installed accessory.

**Zone Sensors**  
Available in programmable, automatic and manual styles.

**Rigorous Testing**  
The fan and idler arm assembly designs have been tested to over 300,000 cycles each. Our combined cycle testing is now over 7,000,000 cycles.

All of Voyager's designs were rigorously rain tested at the factory to ensure water integrity.

Actual shipping tests were performed to determine packaging requirements. Units were test shipped around the country to determine the best packaging. Factory shake and drop tests were used as part of the package design process to help assure that the unit arrives at the job site in top condition.

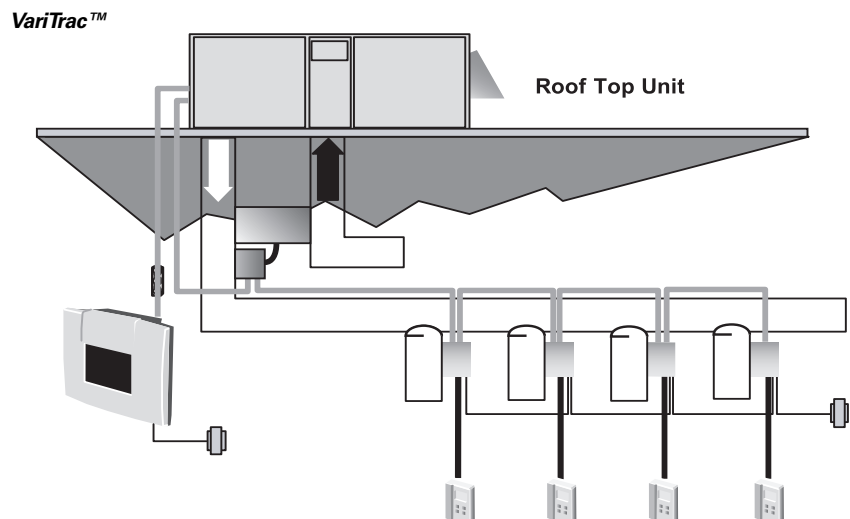
Rigging tests include lifting a unit into the air and letting it drop one foot, assuring that the lifting lugs and rails hold up under stress.

We perform a 100% coil leak test at the factory. The evaporator and condenser coils are leak tested at 200 psig and pressure tested to 450 psig.

All parts are inspected at the point of final assembly. Sub-standard parts are identified and rejected immediately.

Every unit receives a 100% unit run test before leaving the production line to make sure it lives up to rigorous Trane requirements.

Voyager units incorporate either a one piece top or the Trane-Tite-Top (T<sup>3</sup>). Each part of the top (either two or three pieces) overlaps in such a way that water cannot leak into the unit. These overlapped edges are gasketed and sealed to ensure superior water integrity.



# Features and Benefits

## Easy to Install and Service

### Conversionless Units

The dedicated design units (either downflow or horizontal) require no panel removal or alteration time to convert in the field — a major cost savings during installation.

Horizontal units come complete with duct flanges so the contractor doesn't have to field fabricate them. These duct flanges are a time and cost saver.

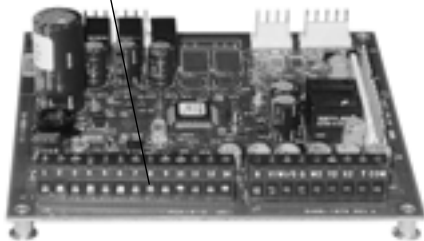
### Easy Access Low Voltage Terminal Board

Voyager's Low Voltage Terminal Board is external to the electrical control cabinet. It is extremely easy to locate and attach the thermostat wire. This is another cost and time saving installation feature.



### Low Voltage Connections

The wiring of the low voltage connections to the unit and the zone sensors is as simple as 1-1, 2-2, and 3-3. This simplified system makes it easy for the installer to wire.



### Electric Heaters

Electric heat modules are available within the basic unit. If ordering the Through the Base Electrical option with an Electrical Heater, the heater must be factory installed.

### Powered or Unpowered Convenience Outlet

This option is a GFCI, 120v/15amp, 2 plug, convenience outlet, either powered or unpowered. This option can only be ordered when the Through the Base Electrical with either the Disconnect Switch, or Circuit Breaker, option is ordered. This option is available on all downflow models.



### Single Point Power

A single electrical connection powers the unit.

### Single Side Service

Single side service is standard on all units.

### Through the Base Electrical with Circuit Breaker

This option is a factory installed thermal magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections. This option is available on all downflow models.

### Through the Base Electrical with Disconnect Switch

Factory installed 3-pole, molded case, disconnect switch with provisions for through the base electrical connections are available. This option is available on all downflow models.

### Through the Base Utilities Access

An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. Option will allow for field installation of liquid-tight conduit and an external field installed disconnect switch.

### Factory Installed Options

A wide variety of Factory Installed Options (FIOPs) are available.

## Added Efficiency

### Airflow

Airflow is outstanding. The Voyager can replace an older machine with old ductwork and, in many cases, improve the comfort through better air distribution.

### High Efficiency Motors

This option is available with efficiency ratings from 86.5 up to 91.0. It is not available for all models.

### U-shaped Airflow

U-shaped airflow allows for improved static capabilities.

### Low Ambient Cooling

Cooling capabilities down to 0°F as standard.

### Oversized Motors

Factory or field installed oversized motors available for high static applications.

### One of our Finest Assets:

Trane Sales Representatives are a Support group that can assist you with:

- Product
- Application
- Service
- Training
- Special Applications
- Specifications
- Computer Programs and much more

Voyager has the features and benefits that make it first class in the light commercial rooftop market. Designed with input from field contractors and engineers, its U-shaped airflow performance is outstanding.



# Application Considerations

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Application of this product should be within the cataloged airflow and cooling considerations.

## **Low Ambient Cooling**

This Voyager line features, as standard, low ambient cooling down to 0°F. The following options need to be included/considered when low ambient applications are required: continuous fan operation, crankcase heaters, thermal expansion valves, frostat. Contact your local Trane Representative for more assistance with low ambient cooling applications.

## **Barometric Relief**

This product line offers an optional barometric relief damper included in the downflow economizer accessory. This accessory consists of gravity dampers which open with increased pressure. As the building air pressure increases, the pressure in the unit return air section also increases, opening the dampers and relieving the conditioned space.

NOTE: THE EFFECTIVENESS OF BAROMETRIC RELIEF DAMPER DURING ECONOMIZING OPERATION IS SYSTEM RELATED.

PRESSURE DROP OF THE RETURN AIR SYSTEM SHOULD BE CONSIDERED TO CONTROL BUILDING PRESSURIZATION.

## **Power Exhaust Accessory**

The power exhaust accessory is available on all 12½-25 ton downflow units. This accessory can be field installed and will assist in relieving building pressurization.

## **Condensate Trap**

The evaporator is a draw-thru configuration. A trap must be field provided prior to start-up on the cooling cycle.

## **Clearance Requirements**

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances which appear inadequate should be reviewed with the local Trane sales personnel.

## **Unit Pitch**

These units have sloped condensate drain pans. Units must be installed level, any unit slope must be toward access side of unit.



# Selection Procedures

## Cooling Capacity

### Step 1

Calculate the building's total and sensible cooling loads at design conditions. Use the Trane calculation methods or any other standard accepted method.

Factors used in unit selection:

- A** Total Cooling Load: 180 MBh
- B** Sensible Cooling Load: 129 MBh
- C** Airflow: 6000 cfm
- D** Electrical Characteristics: 460/60/3
- E** Summer Design Conditions: Entering Evaporator Coil: 80 DB, 67 WB Outdoor Ambient: 95 DB
- F** External Static Pressure: 0.49 in. wg
- G** Rooftop - downflow configuration
- H** Accessories
  - Roof curb
  - Economizer
  - Electric Heat
- I** Heating
  - Capacity 115 MBh
  - 460 volt/3 phase Electric Heat —at 6000 cfm

### Step 2

As a starting point, a rough determination must be made of the size of the unit. The final selection will be made after examining the performance at the given conditions. Divide the total cooling load by nominal BTUH per ton (12 MBh per ton); then round up to the nearest unit size.

$$180 \text{ MBh} / 12 \text{ MBh} = 15.0 \text{ Tons}$$

### Step 3

Table PD - 2 shows that a TCD180B4 has a gross cooling capacity of 184 MBh and 130 MBh sensible capacity at 6000 cfm and 95 DB outdoor ambient with 80 DB, 67 WB air entering the evaporator.

## To Find Capacity at Intermediate Conditions Not in the Table

When the design conditions are between two numbers that are in the capacity table, interpolation is required to approximate the capacity. Note: Extrapolation outside of the table conditions is not recommended.

### Step 4

In order to select the correct unit which meets the building's requirements, the fan motor heat must be deducted from the gross cooling capacity. The amount of heat that the fan motor generates is dependent on the effort by the motor - cfm and static pressure. To determine the total unit static pressure you add the external static pressure to the additional static related by the added features:

External Static (duct system)	0.49 wg
Standard Filter 1 in. from Table PD-35	0.10 wg
Economizer (100% Return Air) from Table PD-35	0.04 wg
Electric Heater Size 36 kw from Table PD-35	0.07 wg
<b>Total Static Pressure</b>	<b>0.60 wg</b>

Note: The Evaporator Fan Performance Table PD-18 has already accounted for the pressure drop for standard filters and wet coils (see note below Table PD-18). Therefore, the actual total static pressure is 0.60 - 0.10 (from Table PD-35) = 0.50 wg.

With 6000 cfm and 0.50 wg. Table PD-18 shows 2.56 bhp for this unit. Note below the table gives a formula to calculate Fan Motor Heat,  
 $3.15 \times \text{bhp} = \text{MBH}$   
 $3.15 \times 2.56 = 8.06 \text{ MBH}$ .

Now subtract the fan motor heat from the gross cooling capacity of the unit:  
 Net Total Cooling Capacity  
 $= 184 \text{ MBh} - 8.06 = 175.9 \text{ MBH}$ .

Net Sensible Cooling Capacity  
 $= 130 \text{ MBh} - 8.06 = 121.9 \text{ MBH}$ .

### Step 5

If the performance will not meet the required load of the building -total or sensible cooling load, try a selection at the next higher size unit.

## Heating Capacity

### Step 1

Calculate the building heating load using the Trane calculation form or other standard accepted method.

### Step 2

Size the system heating capacity to match the calculated building heating load. The following are building heating requirements:

- A** Total heating load of 115.0 MBH
- B** 6000 cfm
- C** 460 volt/3 phase Power Supply

The electric heat accessory capacities are listed in Table PD-36. From the table, a 36 kw heater will deliver 122.94 MBH at 480 volts. In order to determine capacity at 460 volts, the heater voltage correction factor from Table PD-37 must be used. Therefore,  $122.94 \text{ MBH} \times .94$  (voltage correction factor) = 115.6 MBH.

## Air Delivery Selection

External static pressure drop through the air distribution system has been calculated to be 0.50 inches of water. From Table PD-35 static pressure drop through the economizer is 0.04 and the 36 kw heater is 0.07 inches of water (0.49 + 0.04 + 0.07). Enter Table PD-18 for a TCD180B4 at 6000 cfm and 0.50 static pressure. The standard motor at 777 rpm will give the desired airflow at a rated bhp of 2.71.

# Selection Procedure

## Dehumidification Selection

Determine normal unit cooling and heating capacities as previously described in the selection procedures on prior page.

Typical 20 ton TFD241C  
 6400 cfm Total Supply airflow  
 2560 cfm Outside Air (40%)  
 3840 cfm Return Air  
 0.41" External Static Pressure

### OA Conditions

*Part load day and raining*  
 68°F db  
 67°F wb  
 66.5 dp  
 95% RH

### RA' conditions

75°F db  
 63°F wb  
 52% RH  
 55.9 dp

### Step 1: Determine the mixed/entering air condition (MA')

MA' = (% outside air\*outside air dry-bulb temperature) + (% return air\*return air dry-bulb temperature)  
 MA' = (0.40\*68°F) + (0.60\*75°F)  
 MA' = 72.20°F db

### Note: Repeat for wet-bulb temperature (wb).

Plot on psychrometric chart.

### MA'

72.2°F db  
 64.7°F wb

### Step 2: Determine static pressure drop add for reheat

Table PD-35 shows a static pressure drop of 0.35" for the reheat coil and an additional .04 for the mandatory 2" pleated filters required when ordering the dehumidification option. Total static pressure =

$$1.0 + 0.035 + 0.04 = 1.075$$

( $\approx 1.1$  for manual calculations)

Do not forget to also add any additional static from other accessories.

Table PD-29 (airflow table for 20 ton dehumidification units) indicates that a standard motor and drive is needed for this airflow and static pressure range.

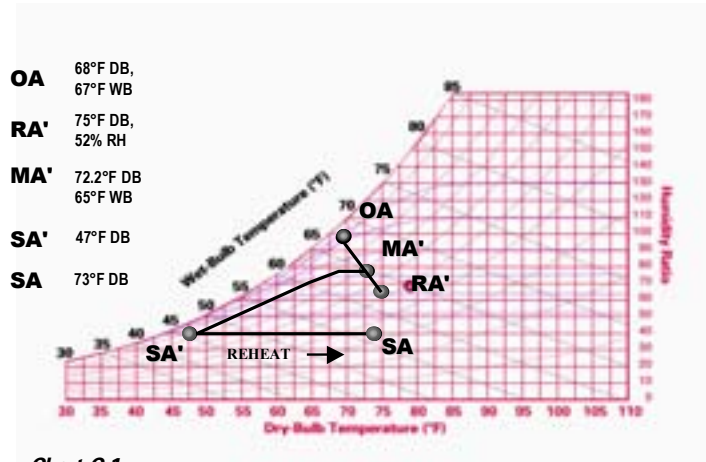


Chart C-1

### Step 3a: Determine leaving evaporator temperature SA'

Leaving Unit Temperature = SA'  
 Utilizing the manual selection method as previously described and the formula

$$\Delta \text{Temp} = \frac{\text{cooling capacity in Bth}}{(\text{cfm})(1.085)}$$

or using the TOPSS™ program determine the leaving evaporator temperature (temperature without the addition of fan heat).

51774 db  
 51.03 wb

### Step 3b: Determine leaving unit temperature in standard cooling mode

Find the leaving unit temperature including fan heat as discussed in prior selection procedures and using the temperature formula from Step 3a or refer to your TOPSS selection.

53.6 db  
 51 wb  
 84% RH  
 49% dp

### Step 4: Determine reheat temperature rise

Using the leaving evaporator temp, go to PD-39 and find the reheat temperature rise for that particular cfm: 17.55°F db

*Note: Reheat temperature rise is based on supply airflow and leaving evaporator coil temperature.*

### Step 5: Determine leaving unit temperature with reheat active (SA')

Reheat temperature (obtained in step 3) + SA' = SA  
 17.55°F db + 53.6°F = 71.2°F db  
 SA' = 71.2°F

51 wb  
 20.8 RH  
 29.4 dp

Consider Chart C-1. If the space relative humidity is equal to or above the space relative humidity setpoint, the Dehumidification option will:

- Energize compressor or both compressors (2 stage compressor units).
- Hot gas reheat valve is energized and hot gas is diverted to the reheat coil.
- Dehumidification/reheat is terminated when space humidity is reduced to 5% below relative humidity setpoint.

At MA', air enters the RTU. The RTU filters, cools, and dehumidifies the air as it moves through the evaporator coil. Air leaves the evaporator coil saturated at the preset dew point condition (SA') and is reheated by the hot gas reheat coil to deliver 71°F (SA) supply air to the space.



# Model Number Description

## Packaged Cooling with Electric Heat Unit Typical Model Nomenclature

<b>T</b>	<b>C</b>	<b>D</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>C</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>A</b>	<b>A</b>
1	2	3	4	5	6	7	8	9	10	11	12

### Digits 1, 2 - Product Type

TC = Packaged Cooling, Electric Heat  
 TF = With Factory Installed Options

### Digit 3 - Airflow Configuration

D = Downflow  
 H = Horizontal

### Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

150 = 12½ Tons Standard Efficiency  
 151 = 12½ Tons High Efficiency  
 180 = 15 Tons Standard Efficiency  
 181 = 15 Tons High Efficiency  
 210 = 17½ Tons Standard Efficiency  
 211 = 17½ Tons High Efficiency  
 240 = 20 Tons Standard Efficiency  
 241 = 20 Tons High Efficiency  
 300 = 25 Tons Standard Efficiency  
 301 = 25 Tons High Efficiency

### Digit 7- Major Development Sequence

#### Digit 8 - Electrical Characteristics

3 = 208-230/60/3  
 4 = 460/60/3  
 W = 575/60/3  
 K = 380/60/3

### Digit 9, 10 - Factory-Installed Options

00 = No Factory-installed Options  
 0A = Factory-installed Economizer  
 0B = Oversized Motor  
 0C = Downflow Economizer and Oversized Motor  
 0F = Trane Communications Interface (TCI)  
 0G = Downflow Economizer and TCI  
 0H = TXV/Face-Split Evaporator  
 0J = Oversized Motor and TXV/Face-Split Evaporator  
 0K = Downflow Economizer, Oversized Motor, and TXV/Face-Split Evaporator  
 0L = Downflow Economizer with TXV/Face-Split Evaporator  
 0M = Reheat Coil  
 0N = Downflow Economizer and Reheat Coil  
 0P = Oversized Motor and Reheat Coil  
 0R = Downflow Economizer, Oversized Motor and Reheat Coil

### Digit 11- Minor Design Sequence

### Digit 12- Service Digit



# General Data

# (12½, 15 Ton) Standard Efficiency

Table GD - 1 – General Data

	12½ Ton Downflow and Horizontal Units TC*150D3, D4, DW, DK	15 Ton Downflow and Horizontal Units TC*180B3, B4, BW, BK
<b>Cooling Performance<sup>1</sup></b>		
Gross Cooling Capacity	150,000	182,000
EER <sup>2</sup>	9.8	9.9
Nominal CFM / ARI Rated CFM	5,000/4,400	6,000/5,300
ARI Net Cooling Capacity	142,000	174,000
Integrated Part Load Value <sup>3</sup>	10.5	10.2
System Power (KW)	14.49	17.57
<b>Compressor</b>		
No./Type	2/Scrolls	2/Scrolls
<b>Sound Rating (BELS)<sup>4</sup></b>		
	9.2	9.2
<b>Outdoor Coil — Type</b>		
	Hi-Performance	Hi-Performance
Tube Size (in.) O.D.	.375	.375
Face Area (sq ft)	24.18	27.12
Rows/FPI	2/16	3/16
<b>Indoor Coil — Type</b>		
	Hi-Performance	Hi-Performance
Tube Size (in.)	.375	.375
Face Area (sq ft)	175	175
Rows/FPI	2/15	2/15
Refrigerant Control	Short Orifice	Short Orifice
Drain Connection No./Size (in.)	1/1.00 NPT	1/1.00 NPT
<b>Outdoor Fan — Type</b>		
	Propeller	Propeller
No. Used/Diameter (in.)	2/26	2/26
Drive Type/No. Speeds	Direct/1	Direct/1
CFM	10,600	10,200
No. Motors/HP	2/.50	2/.50
Motor RPM	1,100	1,100
<b>Indoor Fan — Type</b>		
	FC Centrifugal	FC Centrifugal
No. Used	1	1
Diameter x Width (in.)	15 x 15	15 x 15
Drive Type/No. Speeds	Belt/1	Belt/1
No. Motors	1	1
Motor HP (Standard/Oversized)	3.0/5.0	3.0/5.0
Motor RPM (Standard/Oversized)	1,740/3,450	1,740/3,450
Motor Frame Size (Standard/Oversized)	145T/145T	145T/145T
<b>Filters — Type Furnished<sup>6</sup></b>		
	Throwaway	Throwaway
(No.) Size Recommended (in.)		
Downflow	(2) 20 x 20 x 2, (4) 20 x 25 x 2	(2) 20 x 20 x 2, (4) 20 x 25 x 2
Horizontal	(2) 20 x 20 x 2, (4) 20 x 25 x 2	(2) 20 x 20 x 2, (4) 20 x 25 x 2
<b>Refrigerant Charge (Lbs of R-22)<sup>5</sup></b>		
	9.3/9.4/Circuit	17.5/9.5/Circuit

Notes:

- Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Certified in accordance with the Unitary Large Equipment certification program, which is based on ARI Standard 340/360-93.
- EER is rated at ARI conditions and in accordance with ARI Standard 210/240 or 360.
- Integrated Part Load Value is based in accordance with ARI Standard 210/240 or 360. Units are rated at 80°F ambient, 80°F entering dry bulb, and 67°F entering wet bulb at ARI rated cfm.
- Sound Rating shown is tested in accordance with ARI Standard 270 or 370.
- Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
- Optional 2 inch pleated filters are also available.
- For 380V/60Hz units, the oversized motor is used as the standard motor. Refer to oversized motor data.

\*Indicates both downflow and horizontal units.



# General Data

# (17½, 20, 25 Ton) Standard Efficiency

Table GD - 2 — General Data

	17½Ton Downflow and Horizontal Units TC*210C3, C4, CW, CK	20Ton Downflow and Horizontal Units TC*240B3, B4, BW, BK	25Ton Downflow and Horizontal Units TC*300B3, B4, BW, BK
<b>Cooling Performance<sup>1</sup></b>			
Gross Cooling Capacity	210,000	242,000	290,000
EER <sup>2</sup>	9.8	9.7	9.7
Nominal CFM / ARI Rated CFM	7,000/5,800	8,000/7,000	10,000/8,750
ARI Net Cooling Capacity	196,000	232,000	272,000
Integrated Part Load Value <sup>3</sup>	10.0	10.0	9.8
System Power (KW)	20.0	23.91	28.05
<b>Compressor</b>			
No./Type	2/Scrolls	2/Scrolls	2/Scrolls
<b>Sound Rating (BELS)<sup>4</sup></b>			
	9.4	9.4	9.4
<b>Outdoor Coil — Type</b>			
	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.) O.D.	.375	.375	.375
Face Area (sq ft)	27.12	35.30	36.43
Rows/FPI	3/16	3/16	2/16
<b>Indoor Coil — Type</b>			
	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.)	.375	.375	.375
Face Area (sq ft)	17.50	26.00	26.00
Rows/FPI	4/15	2/15	3/15
Refrigerant Control	Short Orifice	Short Orifice	Short Orifice
Drain Connection No./Size (in.)	1/1.00 NPT	1/1.00 NPT	1/1.00 NPT
<b>Outdoor Fan — Type</b>			
	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	2/26	2/26	2/28
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
CFM	13,400	14,600	16,700
No. Motors/HP	2/1.0	2/1.0	2/1.0
Motor RPM	1,125	1,125	1,125
<b>Indoor Fan — Type</b>			
	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used	1	1	1
Diameter x Width (in.)	15 x 15	18 x 18	18 x 18
Drive Type/No. Speeds	Belt / 1	Belt / 1	Belt / 1
No. Motors	1	1	1
Motor HP (Standard/Oversized)	5.0/7.5	5.0/7.5	7.5/NA
Motor RPM (Standard/Oversized)	3,450/3,470	3,450/3,470	3,470/NA
Motor Frame Size (Standard/Oversized)	145T/184T	145T/184T	184T/NA
<b>Filters — Type Furnished<sup>7</sup></b>			
	Throwaway	Throwaway	Throwaway
(No.) Size Recommended (in.)			
Downflow	(2) 20 x 20 x 2, (4) 20 x 25 x 2	(4) 20 x 20 x 2, (4) 20 x 25 x 2	(4) 20 x 20 x 2, (4) 20 x 25 x 2
Horizontal	(2) 20 x 20 x 2, (4) 20 x 25 x 2	(8) 20 x 25 x 2	(8) 20 x 25 x 2
<b>Refrigerant Charge (Lbs of R-22)<sup>5</sup></b>			
	21.0/14.3/Circuit <sup>6</sup>	18.9/21.0/Circuit	17.0/Circuit

Notes:

- Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. 17½ - 20 ton models are certified in accordance with the Unitary Large Equipment certification program, which is based on ARI Standard 340/360-93. 25 ton model ratings shown are tested in accordance with ARI Standard 340/360-93.
- EER is rated at ARI conditions and in accordance with ARI Standard 210/240 or 360.
- Integrated Part Load Value is based in accordance with ARI Standard 210/240 or 360. Units are rated at 80°F ambient, 80°F entering dry bulb, and 67°F entering wet bulb at ARI rated cfm.
- Sound Rating shown is tested in accordance with ARI Standard 270 or 370.
- Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
- Refrigerant charge for horizontal models is 21.5/14.5 per circuit.
- Optional two inch pleated filters are also available.
- For 380V/60Hz units, the oversized motor is used as the standard motor. Refer to oversized motor data.

\*Indicates both downflow and horizontal units.



# General Data

# (12½, 15 Ton) High Efficiency

Table GD - 3 — General Data

	12½Ton Downflow and Horizontal TC*151C3,C4,CW	15Ton Downflow and Horizontal TC*181C3,C4, CW
<b>Cooling Performance<sup>1</sup></b>		
Gross Cooling Capacity	154,000	189,000
EER <sup>2</sup>	11.3	11.5 <sup>2</sup>
Nominal CFM / ARI Rated CFM	5,000/4,400	6,000/5,300
ARI Net Cooling Capacity	146,000	180,000
Integrated Part Load Value <sup>3</sup>	11.5	13.3
System Power KW	12.92	15.65 <sup>3</sup>
<b>Compressor</b>		
No./Type	2/Scrolls	2/Scrolls
<b>Sound Rating (BELS)<sup>4</sup></b>		
	9.2	9.2
<b>Outdoor Coil — Type</b>		
Tube Size (in.) O.D.	Hi-Performance 0.375	Hi-Performance 0.375
Face Area (sq ft)	27.12	35.30
Rows/FPI	3/16	3/16
<b>Indoor Coil — Type</b>		
Tube Size (in.)	Hi-Performance 0.375	Hi-Performance 0.375
Face Area (sq ft)	17.50	26.00
Rows/FPI	3/15	3/15
Refrigerant Control	Short Orifice <sup>9</sup>	Short Orifice <sup>9</sup>
Drain Connection No./Size (in.)	1/1.0 NPT	1/1.0 NPT
<b>Outdoor Fan — Type</b>		
No. Used/Diameter (in.)	Propeller 2/26	Propeller 2/26
Drive Type/No. Speeds	Direct/1	Direct/1
CFM	10,400	11,000
No. Motors/HP	2/.50	2/.50
Motor RPM	1100	1100
<b>Indoor Fan — Type</b>		
No. Used	FC Centrifugal 1	FC Centrifugal 1
Diameter x Width (in.)	15 x 15	18 x 18
Drive Type/No. Speeds	BELT/1	BELT/1
No. Motors	1	1
Motor HP (Standard/Oversized)	3.0/5.0	3.0/5.0
Motor RPM (Standard/Oversized)	1740/3450	1740/3450
Motor Frame Size (Standard/Oversized)	145T/145T	145T/145T
<b>Filters — Type/Furnished? (No.) Size Recommended (in.)</b>		
	Throwaway/Yes <sup>5</sup> (2)20 x 20 x 2 (4)20 x 25 x 2	Throwaway/Yes <sup>5</sup> (4) 20 x 20 x 2 (4) 20 x 25 x 2
<b>Optional Hot Gas Reheat Coil — Type</b>		
Tube Size (in.) OD	Hi-Performance 0.375	Hi-Performance 0.375
Face Area (sq. ft.)	175	26
Rows/FPI	1/16	1/16
<b>Refrigerant Charge (Lbs of R-22)<sup>6</sup>/Circuit</b>		
Standard	15.0/13.8 <sup>9</sup>	25.0/13.0 <sup>8</sup>
Optional Hot Gas Reheat Coil	15.3/14.3	27.8/11.4

Notes:

- Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Certified in accordance with the Unitary Large Equipment certification program, which is based on ARI Standard 340/360-93.
- EER is rated at ARI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is based in accordance with ARI Standard 210/240 or 360. Units are rated at 80°F ambient, 80°F entering dry bulb, and 67°F entering wet bulb at ARI rated cfm.
- Sound Rating shown is tested in accordance with ARI Standard 270 or 370.
- Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
- Face area for Indoor Coil on horizontal models is 12.36.
- Horizontal models have 4 - 20 x 25 x 2 filters.
- Optional two inch pleated filters are also available for 12½ ton models.
- TXV/Face-Split Option (Downflow Only) TCD151C3,4,W (Refrigerant Control): Expansion Valve; (Refrigerant Charge): 13.4/12.0.

\*Indicates both downflow and horizontal units.



# General Data

# (17½, 20, 25 Ton) High Efficiency

Table GD - 4 — General Data

	17½Ton Downflow and Horizontal TC*211C3,C4,CW	20Ton Downflow and Horizontal TC*241C3,C4,CW	25Ton Downflow and Horizontal TC*301C3,C4,CW
<b>Cooling Performance<sup>1</sup></b>			
Gross Cooling Capacity	220,000	268,000 <sup>9</sup>	300,000 <sup>11</sup>
EER <sup>2</sup>	11.0	10.6	10.4 <sup>11</sup>
Nominal CFM / ARI Rated CFM	7,000/6,200	8,000/7,000	10,000/8,750
ARI Net Cooling Capacity	208,000	250,000 <sup>9</sup>	278,000
Integrated Part Load Value <sup>3</sup>	12.0	11.2	11.0 <sup>11</sup>
System Power KW	18.91	23.58 <sup>9</sup>	26.73 <sup>11</sup>
<b>Compressor</b>			
No./Type	2/Scrolls	2/Scrolls	2/Scrolls
<b>Sound Rating (BELS)<sup>4</sup></b>			
	9.4	9.4	9.4
<b>Outdoor Coil — Type</b>			
	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.) O.D.	0.375	0.375	0.375
Face Area (sq ft)	35.30	35.30	35.30
Rows/FPI	3/16	3/16	3/16
<b>Indoor Coil — Type</b>			
	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.)	0.375	0.375	0.375
Face Area (sq ft)	26.000	26.00	26.00
Rows/FPI	4/15	4/15	4/15
Refrigerant Control	Short Orifice	Short Orifice <sup>9</sup>	Short Orifice <sup>11</sup>
Drain Connection No./Size (in.)	1/1.0 NPT	1/1.0 NPT	1/1.0 NPT
<b>Outdoor Fan — Type</b>			
	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	2/26	2/26	2/26
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
CFM	12,800	13,700	13,700
No. Motors/HP	2/1.00	2/1.00	2/1.00
Motor RPM	1125	1125	1125
<b>Indoor Fan — Type</b>			
	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used	1	1	1
Diameter x Width (in.)	18 x 18	18 x 18	18 x 18
Drive Type/No. Speeds	BELT/1	BELT/1	BELT/1
No. Motors	1	1	1
Motor HP (Standard/Oversized)	5.0/7.5	5.0/7.5	7.5/NA
Motor RPM(Standard/Oversized)	3450/3470	3450/3470	3470/NA
Motor Frame Size (Standard/Oversized)	145T/184T	145T/184T	184T/NA
<b>Filters — Type Furnished<sup>7</sup></b>			
	Throwaway	Throwaway	Throwaway
(No.) Size Recommended (in.)	(4/4)20 x 20 x 2/20 x 25 x 2 <sup>6</sup>	(4/4)20 x 20 x 2/20 x 25 x 2 <sup>6</sup>	(4/4)20 x 20 x 2/20 x 25 x 2 <sup>6</sup>
<b>Optional Hot Gas Reheat Coil — Type</b>			
	—	Hi-Performance	—
Tube Size (in.) OD	—	0.375	—
Face Area	—	26	—
Rows/FPI	—	1/16	—
<b>Refrigerant Charge (Lbs of R-22)<sup>5</sup> / Circuit</b>			
Standard	25.7/12.5 <sup>10</sup>	21.8/21.8 <sup>9</sup>	24.5/24.5 <sup>11</sup>
Optional Hot Gas Reheat Coil	—	21.3/21.0	—

Notes:

- Cooling Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. 15 - 20 ton models are certified in accordance with the Unitary Large Equipment certification program, which is based on ARI Standard 340/360-93. 25 ton model ratings shown are tested in accordance with ARI Standard 340/360-93.
- EER is rated at ARI conditions and in accordance with DOE test procedures.
- Integrated Part Load Value is based in accordance with ARI Standard 210/240 or 360. Units are rated at 80°F ambient, 80°F entering dry bulb, and 67°F entering wet bulb at ARI rated cfm.
- Sound Rating shown is tested in accordance with ARI Standard 270 or 370.
- Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
- Horizontal models have 8 - 20 x 25 x 2 filters.
- Optional two inch pleated filters are also available.
- TXV/Face-Split Option (Downflow Only) TCD181C3,4,W (EER):11.4; (System Power kW): 15.79; (Refrigerant Control): Expansion Valve; (Refrigerant Charge): 26.0/12.0
- TXV/Face-Split Option (Downflow Only) TCD241C3,4,W (Gross Cooling Capacity):259,000; (ARI Net Cooling Capacity): 244,000; (System Power kW): 23.02; (Refrigerant Control): Expansion Valve; (Refrigerant Charge): 21.5/22.2
- TXV/Face-Split Option (Downflow Only) TCD211C3,4,W Refrigerant Charge): 27.0/10.0
- TXV/Face-Split Option (Downflow Only) TCD301C3,4,W (EER): 10; (Gross Cooling Capacity): 294,000; (ARI Net Cooling Capacity): 272,000; (IPLV): 10.6; System Power kW): 27.2; Refrigerant Control: Expansion Valve; (Refrigerant Charge): 21.0/23.0

\*Indicates both downflow and horizontal units.









# Performance Data

# (25 Ton) Standard Efficiency

**Table PD-5— Gross Cooling Capacities (MBH) 25 Ton Three Phase TC\*300B3, B4, BW, BK**

		Ambient Temperature (F)																							
		85						95						105						115					
CFM	Enter. Dry Bulb (F)	Entering Wet Bulb (F)																							
		61		67		73		61		67		73		61		67		73		61		67		73	
Airflow		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
9000	75	266	224	299	174	319	118	247	215	285	167	309	113	228	205	266	172	297	108	209	196	244	163	280	99.9
	80	270	268	300	215	321	161	252	252	285	209	311	155	237	237	266	200	297	149	221	221	244	190	280	142
	85	286	286	301	255	323	196	272	272	286	250	312	194	256	256	267	242	298	189	240	240	246	233	281	183
	90	301	301	304	295	326	232	289	289	289	289	314	231	275	275	275	275	300	229	259	259	259	259	282	224
10000	75	272	237	303	180	322	120	253	227	290	174	312	115	234	218	271	165	300	109	214	208	249	156	284	102
	80	277	277	304	223	324	171	262	262	290	219	314	161	246	246	271	211	301	155	229	229	249	201	284	147
	85	294	294	306	266	327	208	282	282	291	263	316	200	266	266	273	257	302	197	249	249	253	248	285	192
	90	308	308	310	309	329	239	297	297	297	297	318	240	284	284	284	284	304	239	268	268	268	268	286	235
10500	75	275	243	305	183	323	122	256	233	291	177	314	117	236	223	273	188	301	111	216	214	251	178	285	103
	80	282	282	306	227	325	174	267	267	292	223	315	162	250	250	273	216	302	157	233	233	251	206	286	150
	85	298	298	308	272	328	216	286	286	294	270	317	203	270	270	276	264	304	200	253	253	256	255	286	196
	90	312	312	311	311	330	256	301	301	301	301	320	244	288	288	288	288	306	244	273	273	272	272	288	241
11000	75	278	248	306	185	324	123	258	239	293	181	315	118	239	229	275	172	302	113	217	217	253	184	286	104
	80	286	286	308	231	325	160	271	271	294	228	316	163	254	254	276	221	304	160	237	237	253	212	287	153
	85	301	301	310	277	327	224	289	289	296	276	319	205	274	274	278	271	305	204	257	257	257	257	288	200
	90	314	314	314	314	330	266	304	304	304	304	321	248	291	291	291	291	307	249	276	276	276	276	289	246

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBH = Total Gross Capacity
3. SHC = Sensible Heat Capacity
4. Table is for 460 volt capacity. For capacity at 230 volt, multiply table capacity by 101%.

\*Indicates both downflow and horizontal units.



# Performance Data

# (12½ Ton) High Efficiency

**Table PD-6 – Gross Cooling Capacities (MBH) 12½ Ton Three Phase TC\*151C3, C4, CW– Standard Refrigeration System**

CFM Airflow		Ambient Temperature																							
		85				95				105				115											
		Enter Dry Bulb		61		67		73		Entering Wet Bulb		61		67		73		61		67		73			
(F)	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC			
4500	75	137.0	116.0	157.0	90.2	166.0	60.8	127.0	110.0	151.0	87.1	163.0	58.5	116.0	105.0	140.0	82.3	158.0	55.8	106.0	99.7	128.0	80.6	152.0	52.8
	80	140.0	139.0	158.0	111.0	167.0	82.9	130.0	130.0	151.0	109.0	164.0	80.8	122.0	122.0	141.0	104.0	159.0	77.8	114.0	114.0	128.0	98.5	152.0	74.6
	85	149.0	149.0	158.0	132.0	169.0	100.0	142.0	142.0	151.0	131.0	165.0	99.4	133.0	133.0	141.0	126.0	159.0	98.2	125.0	125.0	130.0	121.0	152.0	96.0
	90	158.0	158.0	160.0	153.0	170.0	118.0	152.0	152.0	154.0	152.0	166.0	118.0	145.0	145.0	145.0	145.0	160.0	118.0	137.0	137.0	137.0	137.0	153.0	117.0
5000	75	141.0	123.0	159.0	93.4	167.0	61.6	131.0	117.0	154.0	90.9	164.0	59.4	120.0	112.0	144.0	86.6	159.0	56.8	109.0	107.0	132.0	81.0	153.0	53.7
	80	145.0	145.0	160.0	116.0	168.0	84.1	136.0	136.0	154.0	114.0	165.0	82.4	128.0	128.0	144.0	110.0	161.0	80.9	119.0	119.0	132.0	105.0	154.0	77.5
	85	155.0	155.0	161.0	138.0	170.0	103.0	148.0	148.0	155.0	138.0	166.0	102.0	140.0	140.0	145.0	135.0	161.0	102.0	131.0	131.0	134.0	129.0	154.0	100.0
	90	162.0	162.0	163.0	160.0	172.0	121.0	157.0	157.0	157.0	157.0	168.0	122.0	151.0	151.0	151.0	151.0	163.0	123.0	143.0	143.0	143.0	143.0	155.0	122.0
5500	75	145.0	129.0	161.0	95.8	168.0	62.6	134.0	124.0	156.0	94.4	165.0	60.4	123.0	119.0	147.0	90.4	161.0	57.8	112.0	112.0	135.0	85.1	154.0	54.6
	80	150.0	150.0	162.0	119.0	169.0	85.2	142.0	142.0	156.0	119.0	167.0	84.0	133.0	133.0	147.0	116.0	162.0	82.4	124.0	124.0	135.0	111.0	155.0	80.1
	85	158.0	158.0	163.0	143.0	172.0	104.0	153.0	153.0	157.0	144.0	168.0	104.0	146.0	146.0	149.0	143.0	163.0	105.0	137.0	137.0	137.0	137.0	156.0	104.0
	90	165.0	165.0	165.0	165.0	173.0	123.0	161.0	161.0	161.0	161.0	170.0	126.0	156.0	156.0	156.0	156.0	164.0	127.0	149.0	149.0	149.0	149.0	157.0	127.0
6000	75	148.0	136.0	162.0	97.9	168.0	63.5	137.0	131.0	157.0	97.1	166.0	61.4	126.0	125.0	150.0	94.3	162.0	58.9	116.0	116.0	138.0	89.0	155.0	55.6
	80	154.0	154.0	163.0	123.0	170.0	86.2	147.0	147.0	158.0	124.0	168.0	85.8	138.0	138.0	150.0	122.0	162.0	83.3	128.0	128.0	138.0	117.0	156.0	82.2
	85	161.0	161.0	165.0	147.0	172.0	106.0	157.0	157.0	160.0	150.0	169.0	106.0	151.0	151.0	152.0	150.0	164.0	107.0	142.0	142.0	142.0	142.0	158.0	107.0
	90	167.0	167.0	167.0	167.0	174.0	126.0	164.0	164.0	164.0	164.0	171.0	128.0	159.0	159.0	159.0	159.0	166.0	131.0	153.0	153.0	153.0	153.0	159.0	132.0

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBH = Total Gross Cooling Capacity
3. SHC = Sensible Heat Capacity

\*Indicates both downflow and horizontal units.





# Performance Data

# (15 Ton) High Efficiency

**Table PD-8 – Gross Cooling Capacities (MBH) 15 Ton Three Phase TC\*181C3, C4, CW– Standard Refrigeration System**

CFM Airflow		Ambient Temperature																							
		85						95						105						115					
		Enter. Dry Bulb (F)		61		67		73		61		67		73		61		67		73		61		67	
5400	75	172	144	194	112	205	75.2	159	138	185	107	200	71.9	147	131	172	101	193	68	130	130	158	97	183	63.4
	80	175	169	195	138	207	103	164	162	186	134	202	99.7	153	153	173	128	194	95.4	142	142	158	122	183	90.5
	85	185	185	196	164	209	126	176	176	186	161	203	124	165	165	174	156	195	122	155	155	155	155	184	117
6000	75	177	153	197	116	207	76	164	147	189	112	202	73.2	151	140	176	106	195	69.3	138	131	162	99.8	185	64.8
	80	181	180	198	144	209	105	170	170	189	142	204	103	159	159	177	136	196	99.4	148	148	162	130	186	94.6
	85	192	192	199	172	211	129	183	183	190	171	206	129	173	173	173	173	197	127	162	162	162	162	186	124
6600	75	181	162	198	123	208	76.6	168	155	191	117	204	74.4	152	152	180	111	197	70.6	142	139	165	105	187	66.2
	80	186	186	200	151	210	107	177	177	192	148	206	105	166	166	180	144	198	102	154	154	166	137	188	98.6
	85	197	197	202	179	213	131	189	189	194	180	208	132	179	179	183	173	199	132	168	168	170	166	189	129
7200	75	184	170	200	127	209	79.1	168	168	193	121	206	76.4	156	156	182	116	198	71.9	145	145	168	110	189	67.4
	80	191	191	202	153	211	108	182	182	194	154	207	107	171	171	183	151	199	105	159	159	169	145	190	102
	85	200	200	204	185	214	134	194	194	194	194	209	136	185	185	187	181	201	135	174	174	174	174	191	134
	90	207	207	208	207	217	160	203	203	203	203	211	163	195	195	195	195	203	166	186	186	186	186	192	167

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBH = Total Gross Capacity
3. SHC = Sensible Heat Capacity

\*Indicates both downflow and horizontal units.





# Performance Data

# (17½ Ton) High Efficiency

**Table PD-10 — Gross Cooling Capacities (MBH) 17½ Ton Three Phase TC\*211C3, C4, CW — Standard Refrigeration Option**

CFM Airflow		Ambient Temperature																							
		85				95				105				115											
		Enter Dry Bulb		61		67		73		Entering Wet Bulb		61		67		73		61		67		73			
(F)	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC			
6300	75	200.0	169.0	224.0	130.0	233.0	86.2	184.0	162.0	215.0	125.0	231.0	83.3	169.0	154.0	199.0	118.0	226.0	79.3	147.0	147.0	180.0	113.0	214.0	74.2
	80	202.0	202.0	225.0	161.0	236.0	118.0	190.0	190.0	216.0	158.0	234.0	117.0	177.0	177.0	200.0	151.0	227.0	112.0	164.0	164.0	181.0	142.0	214.0	107.0
	85	216.0	216.0	227.0	191.0	239.0	143.0	206.0	206.0	217.0	190.0	236.0	146.0	193.0	193.0	202.0	184.0	228.0	144.0	180.0	180.0	185.0	176.0	215.0	139.0
	90	227.0	227.0	230.0	221.0	242.0	169.0	220.0	220.0	220.0	220.0	239.0	175.0	209.0	209.0	209.0	209.0	229.0	174.0	196.0	196.0	195.0	195.0	217.0	171.0
7000	75	205.0	180.0	226.0	134.0	234.0	87.6	190.0	172.0	219.0	131.0	233.0	84.8	174.0	164.0	204.0	124.0	228.0	80.8	155.0	155.0	184.0	116.0	218.0	76.0
	80	210.0	210.0	228.0	167.0	237.0	119.0	198.0	198.0	220.0	167.0	236.0	120.0	185.0	185.0	205.0	160.0	229.0	117.0	171.0	171.0	186.0	152.0	218.0	112.0
	85	223.0	223.0	230.0	199.0	241.0	145.0	215.0	215.0	222.0	202.0	238.0	150.0	202.0	202.0	209.0	197.0	231.0	150.0	188.0	188.0	191.0	189.0	219.0	147.0
	90	232.0	232.0	233.0	230.0	244.0	173.0	227.0	227.0	227.0	241.0	180.0	218.0	218.0	218.0	218.0	232.0	182.0	205.0	205.0	204.0	204.0	221.0	181.0	
7700	75	210.0	190.0	228.0	138.0	235.0	88.9	195.0	183.0	222.0	137.0	234.0	86.0	179.0	175.0	208.0	130.0	229.0	82.4	161.0	161.0	188.0	122.0	220.0	77.7
	80	217.0	217.0	231.0	173.0	239.0	120.0	206.0	206.0	223.0	174.0	237.0	121.0	192.0	192.0	209.0	169.0	231.0	121.0	178.0	178.0	190.0	161.0	221.0	116.0
	85	228.0	228.0	232.0	206.0	242.0	148.0	221.0	221.0	226.0	211.0	240.0	153.0	210.0	210.0	214.0	209.0	234.0	156.0	196.0	196.0	195.0	195.0	222.0	154.0
	90	235.0	235.0	235.0	235.0	245.0	176.0	232.0	232.0	232.0	243.0	185.0	224.0	224.0	224.0	224.0	235.0	189.0	213.0	213.0	212.0	212.0	224.0	191.0	
8400	75	214.0	200.0	230.0	141.0	236.0	90.3	200.0	193.0	224.0	141.0	235.0	87.4	181.0	181.0	211.0	136.0	230.0	83.8	166.0	166.0	191.0	128.0	222.0	79.2
	80	222.0	222.0	232.0	177.0	239.0	133.0	213.0	213.0	226.0	181.0	238.0	123.0	199.0	199.0	213.0	178.0	233.0	124.0	184.0	184.0	194.0	170.0	223.0	121.0
	85	231.0	231.0	234.0	211.0	243.0	149.0	226.0	226.0	229.0	220.0	241.0	155.0	216.0	216.0	216.0	216.0	235.0	161.0	203.0	203.0	202.0	202.0	224.0	162.0
	90	238.0	238.0	238.0	238.0	246.0	178.0	235.0	235.0	235.0	244.0	189.0	229.0	229.0	229.0	229.0	237.0	195.0	219.0	219.0	219.0	219.0	227.0	199.0	

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBH = Total Gross Cooling Capacity
3. SHC = Sensible Heat Capacity

\*Indicates both downflow and horizontal units.







# Performance Data

# (20 Ton) High Efficiency

**Table PD-12 — Gross Cooling Capacities (MBH) 20 Ton Three Phase TC\*241C3, C4, CW — Standard Refrigeration Option**

CFM Airflow		Ambient Temperature (F)																							
		85						95						105						115					
		Enter. Dry Bulb (F)		61		67		73		Enter. Wet Bulb (F)		61		67		73		61		67		73			
MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC		
7200	75	246	205	273	158	284	105	228	196	263	152	280	101	208	186	246	145	273	96.5	191	176	222	136	261	91.5
	80	250	245	274	192	287	142	232	232	264	190	283	141	216	216	246	183	274	135	201	201	223	172	261	130
	85	263	263	275	227	290	171	251	251	265	228	285	173	236	236	248	221	275	170	219	219	225	211	262	168
	90	274	274	278	262	293	201	266	266	268	265	288	206	254	254	254	254	277	205	239	239	237	237	262	205
8000	75	253	218	275	163	285	107	234	209	267	159	282	103	214	199	252	152	275	98.3	194	189	228	142	266	93.6
	80	257	257	277	199	289	144	243	243	268	199	285	143	227	227	252	194	277	140	210	210	228	184	266	136
	85	270	270	279	236	292	174	261	261	270	240	288	177	247	247	255	237	278	177	230	230	232	226	266	177
	90	280	280	282	273	295	205	274	274	274	274	291	212	264	264	264	264	280	214	250	250	248	248	267	218
8800	75	258	230	278	167	287	109	240	221	270	164	284	105	219	211	256	159	277	100	199	199	232	149	269	95.5
	80	264	264	280	204	290	155	252	252	271	208	287	145	236	236	257	205	279	144	218	218	233	195	269	141
	85	276	276	282	244	293	177	268	268	274	250	290	181	256	256	260	251	281	182	240	240	238	238	269	185
	90	285	285	286	281	297	209	280	280	280	280	293	217	271	271	271	271	283	221	258	258	258	258	271	229
9600	75	262	240	280	169	288	110	246	233	273	169	285	106	225	223	260	166	278	102	205	205	236	156	271	97.1
	80	270	270	282	209	291	161	260	260	274	215	288	147	245	245	261	215	281	147	226	226	237	205	271	146
	85	280	280	284	250	295	179	274	274	277	260	291	184	263	263	265	263	282	186	248	248	246	246	272	193
	90	288	288	288	288	298	212	284	284	284	284	294	222	276	276	276	276	285	228	264	264	265	265	275	240

**Notes:**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBH = Total Gross Capacity
3. SHC = Sensible Heat Capacity

\*Indicates both downflow and horizontal units.







# Performance Data

# (25 Ton) High Efficiency

**Table PD-15 — Gross Cooling Capacities (MBH) 25 Ton Three Phase TC\*301C3, C4, CW - Standard Refrigeration System**

CFM Airflow		Ambient Temperature (F)																							
		85						95						105			115								
		Enter. Dry Bulb (F)		61		67		73		61		67		73		61		67		73					
9000	75	277	243	306	187	316	117	258	234	295	178	314	115	238	224	276	169	305	110	218	214	253	163	292	104
	80	284	284	307	225	321	169	269	269	295	225	317	161	252	252	277	217	307	158	235	235	254	207	293	151
	85	300	300	309	269	325	198	289	289	298	271	320	202	273	273	280	266	308	201	256	256	259	256	293	198
	90	312	312	313	312	329	236	305	305	305	305	321	240	293	293	293	293	310	245	277	277	277	277	295	244
10000	75	284	258	310	188	319	121	264	249	299	185	316	117	244	239	282	178	308	112	224	224	259	168	295	106
	80	294	294	310	233	323	175	280	280	300	236	319	170	263	263	283	230	309	163	245	245	260	221	296	158
	85	307	307	313	280	327	202	298	298	303	286	322	207	284	284	287	284	312	208	267	267	267	267	297	208
	90	318	318	318	318	331	241	312	312	312	312	324	248	301	301	301	301	314	255	287	287	287	287	299	257
10500	75	286	265	311	190	320	122	267	256	300	189	316	118	247	246	284	182	309	113	228	228	261	172	296	107
	80	297	297	312	237	324	178	285	285	302	241	320	174	267	267	285	237	310	165	249	249	262	227	298	162
	85	310	310	315	285	328	204	302	302	305	293	323	210	289	289	289	289	313	212	272	272	272	272	299	213
	90	320	320	320	320	332	244	314	314	314	314	325	251	305	305	305	305	316	260	292	292	292	292	301	264
11000	75	289	272	312	192	321	123	270	264	302	192	317	119	249	249	286	186	309	114	231	231	263	176	297	108
	80	300	300	313	240	324	181	289	289	304	246	321	177	272	272	287	243	311	170	253	253	265	234	299	165
	85	312	312	316	289	329	205	305	305	307	299	324	212	293	293	293	293	314	215	276	276	276	276	300	217
	90	322	322	321	321	332	246	317	317	317	317	326	255	308	308	308	308	317	265	295	295	295	295	303	270

**Notes**

1. All capacities shown are gross and have not considered indoor fan heat. To obtain **NET** cooling capacity subtract indoor fan heat. For indoor fan heat formula, refer to appropriate airflow table notes.
2. MBH = Total Gross Capacity
3. SHC = Sensible Heat Capacity

\*Indicates both downflow and horizontal units.





# Performance Data

# (12½ Ton) Standard Efficiency

**Table PD-17 – Evaporator Fan Performance – 12½Ton – TC\*150D**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Field Supplied Low Static Drive</b>										<b>3 HP Standard Motor &amp; Sheaves</b>										
4000	—	—	—	—	—	—	565	0.93	599	1.03	632	1.15	663	1.27	695	1.38	727	1.48	757	1.59
4500	—	—	—	—	571	1.10	603	1.21	634	1.31	665	1.43	694	1.56	723	1.69	750	1.82	778	1.94
5000	547	1.18	581	1.30	613	1.42	643	1.54	672	1.67	700	1.78	727	1.91	755	2.05	781	2.19	806	2.34
5500	595	1.55	627	1.68	656	1.81	685	1.94	711	2.08	737	2.21	763	2.34	788	2.47	813	2.62	837	2.77
6000	643	1.99	673	2.12	701	2.26	727	2.41	752	2.56	777	2.71	801	2.85	825	2.99	848	3.13	871	3.27

**Table PD-17 – Evaporator Fan Performance – 12½ Ton – TC\*150D – Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Sheaves</b>									<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>											
4000	786	1.70	813	1.81	841	1.91	867	2.02	893	2.12	919	2.22	943	2.32	966	2.41	989	2.50	1011	2.60
4500	806	2.06	834	2.19	861	2.31	886	2.43	911	2.56	935	2.67	960	2.79	983	2.90	1005	3.02	1028	3.13
5000	830	2.48	856	2.62	882	2.76	907	2.89	931	3.02	955	3.16	977	3.30	1001	3.44	1022	3.56	1045	3.70
5500	861	2.93	884	3.10	906	3.25	930	3.41	953	3.56	976	3.70	999	3.86	1021	4.00	1043	4.15	1064	4.31
6000	894	3.43	916	3.61	938	3.79	959	3.97	980	4.15	1000	4.31	1019	4.46	1040	4.62	1061	4.78	1082	4.95
<b>5 HP Oversize Motor &amp; Sheaves</b>																				

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Fan motor heat (MBH) = 3.15 x Fan BHP

Data includes pressure drop due to wet coils and filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Notes:

- Field Supplied Fan Sheave BK90 Required. Field Supplied Belt may be necessary.
- 5 HP Oversized Motor with Field Supplied Motor Sheave IVL40 Required. Field Supplied Belt may be necessary.
- For 380V/60 Hz units, the oversized motor is used as the standard motor. Refer to "Motor & Sheave/Fan Speed" tables to determine operating range.

**5 HP Oversize Motor & Field Supplied Drive**

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



# Performance Data

# (15 Ton) Standard Efficiency

**Table PD-18 — Evaporator Fan Performance — 15 Ton — TC\*180B**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>3 HP Standard Motor &amp; Field Supplied Low Static Drive (1)</b>									<b>3 HP Standard Motor &amp; Sheaves</b>										
4800	—	—	563	1.17	596	1.29	626	1.41	656	1.52	685	1.63	714	1.76	742	1.90	768	2.04	794	2.18
5400	585	1.47	618	1.60	648	1.72	676	1.86	703	1.99	729	2.12	756	2.25	782	2.38	807	2.52	832	2.68
6000	643	1.99	673	2.12	701	2.26	727	2.41	752	2.56	777	2.71	801	2.85	825	2.99	848	3.13	871	3.27
6600	701	2.61	729	2.76	755	2.91	780	3.07	804	3.23	827	3.39	849	3.56	871	3.72	892	3.88	914	4.03
7200	760	3.35	786	3.52	810	3.69	834	3.85	856	4.02	878	4.20	899	4.38	919	4.56	939	4.74	959	4.91
	<b>(2)</b>									<b>5 HP Oversized Motor &amp; Sheaves</b>										

**Table PD-18 — Evaporator Fan Performance — 15 Ton — TC\*180B — Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>3 HP Standard Motor &amp; Sheaves</b>								<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>											
4800	819	2.30	844	2.43	871	2.57	898	2.70	923	2.83	946	2.96	970	3.09	994	3.23	1018	3.39	1041	3.54
5400	855	2.84	878	3.00	901	3.15	923	3.29	945	3.43	969	3.58	993	3.73	1016	3.88	1038	4.03	1060	4.17
6000	894	3.43	916	3.61	938	3.79	959	3.97	980	4.15	1000	4.31	1019	4.46	1040	4.62	1061	4.78	1082	4.95
6600	935	4.18	956	4.34	977	4.51	997	4.70	1018	4.90	1037	5.10	1056	5.30	1075	5.49	1093	5.67	—	—
7200	979	5.08	999	5.25	1018	5.41	1038	5.58	1057	5.77	—	—	—	—	—	—	—	—	—	—
	<b>5 HP Oversized Motor &amp; Sheaves</b>								<b>5 HP Oversized Motor &amp; Field Supplied Drive (3)</b>											

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

- Notes:
1. Field Supplied Fan Sheave BK105 Required. Field Supplied Belt may be necessary.
  2. 5 HP Oversized Motor with Field Supplied Fan Sheave BK160 Required. Field Supplied Belt may be necessary.
  3. 5 HP Oversized Motor with Field Supplied Motor Sheave IVP50 Required. Field Supplied Belt may be necessary.
  4. For 380V/60 Hz units, the oversized motor is used as the standard motor. Refer to "Motor & Sheave/Fan Speed" tables to determine operating range.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.





# Performance Data

# (17½ Ton) Standard Efficiency

**Table PD-19 – Evaporator Fan Performance – 17½ Ton – TC\*210C**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>5 HP Standard Motor with Low Static Drive Accessory</b>																				
5600	—	—	—	—	735	2.34	759	2.46	783	2.60	807	2.74	830	2.89	852	3.03	875	3.18	898	3.33
6300	765	2.96	788	3.10	810	3.23	831	3.36	852	3.50	874	3.65	895	3.81	917	3.97	937	4.13	956	4.29
7000	845	4.02	866	4.18	886	4.33	906	4.48	925	4.62	944	4.77	963	4.93	982	5.10	1002	5.29	1021	5.47
7700	925	5.32	944	5.49	963	5.66	982	5.82	999	5.98	1016	6.14	1033	6.30	1050	6.47	1069	6.66	1086	6.86
8400	1006	6.87	1024	7.06	1041	7.24	1058	7.42	1075	7.60	1091	7.78	1107	7.95	1122	8.13	1138	8.31	1154	8.50

**7.5 HP Oversize Motor & Sheaves**

**5 HP Standard Motor & Sheaves**

**Table PD-19 – Evaporator Fan Performance – 17½ Ton – TC\*210C – Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>5 HP Standard Motor &amp; Sheaves</b>																				
5600	923	3.50	946	3.68	968	3.85	989	4.03	1011	4.21	1033	4.39	1056	4.58	1078	4.77	1099	4.96	1122	5.18
6300	976	4.46	997	4.63	1019	4.82	1040	5.00	1060	5.19	1079	5.39	1100	5.60	1118	5.79	1138	6.00	1157	6.20
7000	1039	5.65	1057	5.82	1074	6.00	1092	6.19	1111	6.39	1130	6.59	1150	6.80	1168	7.01	1186	7.22	1205	7.46
7700	1104	7.06	1122	7.26	1138	7.46	1154	7.66	1170	7.84	1186	8.05	1202	8.25	1220	8.47	—	—	—	—
8400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

**7.5 HP Oversize Motor & Sheaves**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 For Standard Motor & Low Static Drive Accessory Fan Speed (RPM), reference Table PD-34.  
 Fan motor heat (MBH) = 3.15 x Fan BHP

Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Notes:  
 1. For 380V/60 Hz units, the oversized motor is used as the standard motor. Refer to "Motor & Sheave/ Fan Speed" tables to determine operating range.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.



# Performance Data

# (20 Ton) Standard Efficiency

**Table PD-20 — Evaporator Fan Performance — 20 Ton — TC\*240B**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>5 HP Standard Motor &amp; Field Supplied Low Static Drive (1)</b>											<b>5 HP Standard Motor &amp; Sheaves</b>									
6400	—	—	514	1.69	546	1.88	574	2.05	599	2.21	624	2.37	648	2.54	671	2.71	695	2.90	720	3.11
7200	527	2.08	562	2.29	592	2.50	619	2.71	644	2.91	667	3.09	689	3.26	711	3.45	732	3.64	752	3.83
8000	578	2.79	610	3.03	639	3.26	666	3.50	690	3.73	712	3.96	733	4.16	753	4.35	773	4.55	792	4.75
8800	629	3.65	659	3.93	687	4.18	712	4.43	736	4.69	758	4.96	778	5.20	797	5.43	816	5.65	834	5.86
9600	681	4.67	709	4.99	735	5.27	759	5.54	782	5.82	804	6.11	824	6.39	843	6.67	861	6.92	878	7.16
<b>5 HP Standard Motor &amp; Sheaves</b>											<b>7.5 HP Oversized Motor &amp; Sheaves</b>									

**Table PD-20 — Evaporator Fan Performance — 20 Ton — TC\*240B — Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>5 HP Standard Motor &amp; Sheaves</b>											<b>5 HP Standard Motor &amp; High Static Drive Accessory</b>									
6400	744	3.32	768	3.52	790	3.72	811	3.91	833	4.13	855	4.36	877	4.59	897	4.82	917	5.05	936	5.29
7200	773	4.04	795	4.27	817	4.50	839	4.74	860	4.96	880	5.19	898	5.41	917	5.64	937	5.88	957	6.14
8000	811	4.96	830	5.18	848	5.40	867	5.64	887	5.90	907	6.16	927	6.42	946	6.68	964	6.93	982	7.18
8800	852	6.08	869	6.30	887	6.53	904	6.77	921	7.01	938	7.26	955	7.52	973	7.81	991	8.09	—	—
9600	895	7.40	911	7.63	928	7.86	944	8.11	960	8.36	976	8.61	—	—	—	—	—	—	—	—
<b>7.5 HP Oversized Motor &amp; Sheaves</b>																				

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.  
 Notes:

1. Field Supplied Fan Sheave BK190 Required. Field Supplied Belt may be necessary.
2. 7.5 HP Standard Motor with Field Supplied Motor Sheave IVP50 Required. Field Supplied Belt may be necessary.
3. For 380V/60 Hz units, the oversized motor is used as the standard motor. Refer to "Motor & Sheave/Fan Speed" tables to determine operating range.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.



# Performance Data

# (25 Ton) Standard Efficiency

**Table PD-21 — Evaporator Fan Performance — 25 Ton — TC\*300B**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>7.5 HP Standard Motor &amp; Low Static Drive Accessory</b>											<b>7.5 HP Standard Motor &amp; Sheaves</b>									
7000	—	—	—	—	593	2.42	619	2.62	643	2.80	667	2.98	690	3.16	712	3.35	733	3.53	754	3.73
7500	—	—	595	2.66	624	2.88	649	3.10	673	3.31	695	3.50	717	3.68	738	3.88	759	4.08	779	4.28
8000	595	2.92	627	3.16	655	3.39	679	3.63	702	3.86	724	4.07	745	4.28	766	4.48	786	4.68	805	4.90
8500	628	3.47	659	3.73	686	3.97	710	4.23	732	4.47	754	4.71	774	4.94	794	5.15	813	5.36	832	5.58
9000	661	4.08	691	4.36	717	4.62	741	4.89	763	5.15	784	5.41	803	5.66	822	5.89	841	6.12	859	6.35
9500	695	4.76	723	5.06	749	5.34	772	5.62	794	5.90	814	6.18	833	6.45	852	6.71	870	6.95	887	7.19
10000	729	5.52	755	5.84	781	6.13	804	6.42	825	6.72	844	7.01	863	7.31	881	7.59	899	7.86	916	8.11
10500	762	6.35	788	6.69	812	7.00	835	7.31	856	7.62	875	7.93	894	8.24	911	8.54	—	—	—	—
11000	796	7.27	821	7.63	844	7.96	867	8.3	887	8.60	—	—	—	—	—	—	—	—	—	—

**7.5 HP Standard Motor & Sheaves**

**7.5 HP Standard Motor & High Static Drive Accessory**

**Table PD-21 — Evaporator Fan Performance — 25 Ton — TC\*300B — Continued**

CFM	External Static Pressure (Inches of Water)									
	1.10		1.20		1.30		1.40		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>7.5 HP Standard Motor &amp; Sheaves</b>										
7000	776	3.95	798	4.18	820	4.40	841	4.62	862	4.84
7500	798	4.48	818	4.71	839	4.95	860	5.19	880	5.42
8000	824	5.11	842	5.32	860	5.55	880	5.80	899	6.06
8500	850	5.81	868	6.03	885	6.26	902	6.49	920	6.74
9000	877	6.58	894	6.81	911	7.05	928	7.29	944	7.53
9500	904	7.43	921	7.67	938	7.92	954	8.17	970	8.42
10000	933	8.36	949	8.62	—	—	—	—	—	—
10500	—	—	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—

**7.5 HP Standard Motor & High Static Drive Accessory**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Standard Motor & Low Static Drive Accessory Fan Speed (RPM), reference Table PD-34.  
 Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data. Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.  
 Note:  
 1. For 380V/60 Hz units, the oversized motor is used as the standard motor. Refer to "Motor & Sheave/Fan Speed" tables to determine operating range.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.



# Performance Data

# (12½ Ton) High Efficiency

**Table PD-22 — Evaporator Fan Performance — 12½Ton — TCD151C — Standard or TXV Refrigeration System**

CFM	External Static Pressure (Inches of Water)																				
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00		
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Field Supplied Low Static Drive (2)</b>						<b>3 HP Standard Motor &amp; Field Supplied High Static Drive (2)</b>						<b>3 HP Standard Motor &amp; Drive</b>									
2500*	—	—	402	0.30	460	0.39	510	0.48	555	0.56	595	0.64	633	0.74	667	0.83	699	0.92	731	1.02	
3250*	378	0.35	447	0.49	503	0.62	552	0.74	595	0.86	634	0.97	672	1.08	706	1.19	739	1.30	769	1.40	
4000	430	0.56	495	0.74	549	0.91	596	1.07	638	1.22	677	1.37	712	1.52	747	1.66	778	1.80	809	1.94	
4500	466	0.74	528	0.95	580	1.14	627	1.33	668	1.51	706	1.68	742	1.85	776	2.02	806	2.18	836	2.34	
5000	503	0.96	562	1.20	612	1.42	657	1.63	699	1.84	736	2.04	771	2.23	803	2.41	835	2.61	865	2.80	
5500	540	1.22	597	1.49	645	1.74	689	1.98	729	2.20	767	2.44	801	2.66	833	2.87	864	3.07	893	3.28	
6000	579	1.53	633	1.82	680	2.10	722	2.37	761	2.63	797	2.87	832	3.13	864	3.38	894	3.61	922	3.83	

**3 HP Standard Motor & High Static Drive Accessory**

**5 HP Oversize Motor & Drive**

**Table PD-22 — Evaporator Fan Performance — 12½ Ton — TCD151C — Continued**

CFM	External Static Pressure (Inches of Water)																				
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00		
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Drive</b>						<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>															
2500*	760	1.11	789	1.21	817	1.31	842	1.41	868	1.51	892	1.60	916	1.71	939	1.81	962	1.91	984	2.01	
3250*	798	1.52	827	1.64	853	1.76	880	1.88	905	2.01	928	2.13	953	2.26	976	2.38	998	2.51	1020	2.63	
4000*	839	2.07	867	2.21	893	2.33	919	2.47	943	2.59	967	2.73	991	2.88	1013	3.03	1036	3.18	1056.4	3.33	
4500	865	2.50	892	2.66	919	2.81	945	2.96	970	3.11	994	3.25	1017	3.40	1039	3.55	1061	3.70	1082.3	3.85	
5000	892	2.97	920	3.15	946	3.33	971	3.50	996	3.68	1020	3.85	1043	4.02	1066	4.18	1088	4.35	1109.6	4.50	
5500	922	3.49	949	3.70	975	3.90	999	4.09	1023	4.28	1047	4.48	1070	4.68	1091	4.87	1114	5.06	1135.6	5.24	
6000	950	4.05	977	4.29	1002	4.51	1028	4.74	1052	4.96	1074	5.16	1098	5.38	1120	5.59	—	—	—	—	

**5 HP Oversized Motor & Drive**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.

**\*Unit applications below 4000 CFM**

- **Electric heaters restricted on applications below 4000 CFM.**
- **Dehumidification (Hot Gas Reheat) or TXV with Frost and Crankcase Heaters are required on applications below 4000 CFM.**

Fan motor heat (MBH) = 3.15 x Fan BHP

Data includes pressure drop due to wet coils and filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Note:

1. Field Supplied Fan Sheave BK115 Required. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



# Performance Data

# (12½ Ton) High Efficiency

**Table PD-23 — Evaporator Fan Performance — 12½Ton — T\*D151C — Dehumidification (Hot Gas Reheat) Option**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Drive w/Field Supplied Low Static Drive Fan Sheave</b>										<b>3 HP Standard Motor &amp; Drive</b>										
2500*	—	—	—	—	526	0.52	570	0.62	609	0.73	646	0.83	681	0.93	713	1.03	744	1.14	776	1.25
3000*	—	—	534	0.63	578	0.74	618	0.86	656	0.98	692	1.11	725	1.23	756	1.35	786	1.48	814	1.60
3500*	551	0.78	594	0.90	633	1.03	670	1.16	706	1.30	739	1.44	771	1.58	802	1.73	831	1.88	859	2.02
4000	618	1.11	656	1.26	692	1.40	727	1.55	759	1.71	791	1.86	821	2.01	850	2.17	878	2.34	905	2.50
4500	686	1.54	720	1.71	753	1.87	785	2.03	815	2.20	844	2.37	873	2.54	901	2.71	928	2.89	953	3.07
5000	755	2.07	786	2.26	816	2.44	846	2.61	874	2.79	902	2.98	928	3.17	954	3.37	979	3.56	1004	3.75
5500	824	2.71	853	2.91	881	3.13	908	3.32	935	3.51	960	3.70	985	3.91	1010	4.13	1033	4.34	1056	4.54
6000	894	3.47	921	3.70	947	3.93	972	4.15	996	4.36	1021	4.56	1044	4.78	1068	5.01	1090	5.24	1112	5.47

**3 HP Standard Motor & High Static Drive Accessory**

**5 HP Oversized Motor & Drive**

**Table PD-23 — Evaporator Fan Performance — 12½ Ton — T\*D151C — Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Drive</b>					<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>															
2500*	804	1.36	832	1.48	859	1.59	883	1.71	908	1.83	931	1.95	954	2.08	977	2.21	998	2.33	1020	2.47
3000*	842	1.73	869	1.85	895	1.98	920	2.11	945	2.24	968	2.38	991	2.51	1014	2.65	1035	2.79	1057	2.94
3500*	885	2.17	910	2.31	935	2.45	959	2.59	983	2.74	1006	2.89	1029	3.04	1051	3.19	1072	3.34	1093	3.49
4000	930	2.67	956	2.85	980	3.01	1003	3.17	1026	3.34	1047	3.50	1069	3.66	1090	3.82	1110	3.99	1132	4.16
4500	978	3.25	1002	3.44	1026	3.63	1049	3.83	1071	4.02	1093	4.21	1113	4.38	1134	4.57	1154	4.75	1174	4.94
5000	1028	3.94	1051	4.14	1074	4.35	1096	4.55	1118	4.76	1140	4.98	1159	5.18	1180	5.40	1200	5.61	—	—
5500	1079	4.76	1102	4.97	1123	5.17	1146	5.40	1166	5.62	—	—	—	—	—	—	—	—	—	—
6000	1133	5.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

**5 HP Oversized Motor & Drive**

**5 HP Oversized Motor & Drive w/Field Supplied Fan Sheave**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Table includes Dehumidification (Hot Gas Reheat Option).

- **Unit applications below 4000 CFM**
- **Electric heaters restricted on applications below 4000 CFM.**
- **Dehumidification (Hot Gas Reheat) or TXV with Frost and Crankcase Heaters are required on applications below 4000 CFM.**

Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.  
 Note:

1. Field Supplied Fan Sheave BK115 Required. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



# Performance Data

# (12½ Ton) High Efficiency

**Table PD-24 – Evaporator Fan Performance – 12½Ton – TCH151C – Standard Refrigeration System**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Field Supplied Low Static Drive (1)</b>										<b>3 HP Standard Motor &amp; Drive</b>										
4000	—	—	—	—	510	0.98	541	1.10	572	1.22	602	1.35	631	1.48	659	1.62	687	1.76	714	1.91
4500	—	—	521	1.17	551	1.29	579	1.42	607	1.56	635	1.68	662	1.82	688	1.98	713	2.13	738	2.28
5000	534	1.40	566	1.54	593	1.67	620	1.81	645	1.95	671	2.11	696	2.25	720	2.40	744	2.56	767	2.73
5500	581	1.83	611	1.99	637	2.13	661	2.28	685	2.43	709	2.59	732	2.76	754	2.92	777	3.08	799	3.25
6000	628	2.34	657	2.51	682	2.68	704	2.83	727	3.00	749	3.16	770	3.33	791	3.52	812	3.70	833	3.87
<b>5 HP Oversized Motor &amp; Drive</b>																				

**Table PD-24 – Evaporator Fan Performance – 12½ Ton – TCH151C – Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>3 HP Standard Motor &amp; Drive</b>										<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>										
4000	740	2.07	766	2.23	791	2.38	814	2.54	838	2.70	860	2.86	883	3.02	905	3.19	926	3.37	948	3.55
4500	763	2.44	787	2.61	811	2.78	835	2.96	858	3.13	880	3.31	901	3.48	922	3.66	943	3.84	963	4.02
5000	790	2.90	812	3.07	835	3.24	857	3.42	879	3.61	901	3.81	922	4.00	942	4.20	962	4.39	982	4.59
5500	820	3.43	842	3.61	862	3.80	883	3.98	904	4.17	924	4.37	944	4.57	964	4.78	984	4.99	1003	5.20
6000	853	4.04	874	4.23	893	4.43	913	4.63	932	4.83	951	5.03	970	5.24	988	5.45	1007	5.66	—	—
<b>5 HP Oversized Motor &amp; Drive</b>																				

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Note:  
 1. Field Supplied Fan Sheave BK115 Required. Field Supplied Belt may be necessary.



# Performance Data

# (15 Ton) High Efficiency

**Table PD-25 — Evaporator Fan Performance — 15 Ton — TC\*181C — Standard or TXV Refrigeration System**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>3 HP Standard Motor &amp; Field Supplied Extra Low Static Drive (2)</b>						<b>3 HP Standard Motor &amp; Field Supplied Low Static Drive (1)</b>													
3000*	—	—	337	0.32	387	0.42	432	0.53	472	0.65	511	0.77	547	0.90	580	1.03	611	1.16	640	1.29
3900*	341	0.45	384	0.55	423	0.66	462	0.78	500	0.91	536	1.05	569	1.19	600	1.35	630	1.51	660	1.67
4800	399	0.76	437	0.89	471	1.01	503	1.14	535	1.29	566	1.44	598	1.60	629	1.77	658	1.94	684	2.11
5400	445	1.04	474	1.19	506	1.33	536	1.47	564	1.62	592	1.78	621	1.95	648	2.12	676	2.30	704	2.49
6000	479	1.38	513	1.55	543	1.72	571	1.87	597	2.03	623	2.19	648	2.36	673	2.55	699	2.74	723	2.93
6600	519	1.79	552	1.98	580	2.17	606	2.35	632	2.52	656	2.69	679	2.87	702	3.05	725	3.25	748	3.46
7200	560	2.28	591	2.49	618	2.70	643	2.91	667	3.09	690	3.27	712	3.46	734	3.65	755	3.85	776	4.06
	<b>3 HP Standard Motor &amp; Drive</b>												<b>5 HP Oversized Motor &amp; Drive</b>							

**Table PD-25 — Evaporator Fan Performance — 15 Ton — TC\*181C — Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>3 HP Standard Motor &amp; Drive</b>						<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>													
3000*	667	1.43	693	1.57	717	1.71	740	1.86	763	2.01	784	2.16	805	2.31	825	2.47	845	2.63	864	2.80
3900*	688	1.84	715	2.00	741	2.17	766	2.34	790	2.51	812	2.68	834	2.85	855	3.03	875	3.21	895	3.39
4800	710	2.29	735	2.48	760	2.68	785	2.88	809	3.09	832	3.29	854	3.49	876	3.69	898	3.90	919	4.10
5400	730	2.68	755	2.88	778	3.07	800	3.28	823	3.49	845	3.71	867	3.94	889	4.17	910	4.40	931	4.62
6000	749	3.13	774	3.34	798	3.56	821	3.77	842	3.99	863	4.20	884	4.43	904	4.66	924	4.90	944	5.15
6600	771	3.67	794	3.88	816	4.09	839	4.32	862	4.56	884	4.80	904	5.03	924	5.27	943	5.51	961	5.75
7200	797	4.29	818	4.51	839	4.74	860	4.96	881	5.20	902	5.45	923	5.70	—	—	—	—	—	—
	<b>3 HP Standard Motor &amp; Drive</b>												<b>5 HP Oversized Motor &amp; Drive</b>							

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.

- \*Unit applications below 4000 CFM
- Electric heaters restricted on applications below 4000 CFM.
- Dehumidification (Hot Gas Reheat) or TXV with Froststat and Crankcase Heaters are required on applications below 4000 CFM.

Fan motor heat (MBH) = 3.15 x Fan BHP

Data includes pressure drop due to wet coils and filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Note:

1. Field Supplied Fan Sheave BK120 Required. Field Supplied Belt may be necessary. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.



# Performance Data

# (15 Ton) High Efficiency

**Table PD-26 — Evaporator Fan Performance — 15 Ton — T\*D181C — Dehumidification (Hot Gas Reheat) Option**

CFM	External Static Pressure (Inches of Water)																						
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00				
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
	<b>3 HP Standard Motor w/Field Supplied Motor Sheave (2)</b>				<b>3 HP Standard Motor w/Field Supplied Motor Sheave (1)</b>				<b>3 HP Standard Motorw/Field Supplied Low Static Drive Fan Sheave</b>														
3000*	295	0.26	346	0.35	391	0.45	432	0.56	471	0.68	506	0.80	539	0.92	569	1.04	596	1.17	622	1.30			
3600*	333	0.40	379	0.51	420	0.62	458	0.74	494	0.87	527	1.00	559	1.14	589	1.28	617	1.43	644	1.57			
4200*	373	0.60	415	0.72	452	0.85	487	0.98	520	1.12	551	1.26	581	1.41	610	1.57	638	1.73	664	1.89			
4800	414	0.84	452	0.99	487	1.13	519	1.27	550	1.43	579	1.59	607	1.74	635	1.91	660	2.08	686	2.26			
5400	455	1.14	491	1.32	524	1.48	554	1.64	582	1.80	610	1.98	637	2.15	662	2.33	687	2.51	710	2.70			
6000	497	1.51	531	1.73	561	1.91	590	2.08	617	2.26	643	2.44	667	2.63	692	2.83	715	3.02	739	3.22			
6600	540	1.96	572	2.20	601	2.42	628	2.61	653	2.80	678	2.99	701	3.20	724	3.41	746	3.61	768	3.83			
7200	583	2.50	613	2.75	641	3.02	666	3.23	690	3.44	714	3.65	736	3.86	758	4.08	778	4.30	799	4.53			
	<b>3 HP Standard Motor &amp; Drive</b>										<b>5 HP Oversized Motor &amp; Drive</b>												

**Table PD-26 — Evaporator Fan Performance — 15 Ton — T\*D181C — Continued**

CFM	External Static Pressure (Inches of Water)																						
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00				
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
	<b>3 HP Standard Motor &amp; Drive</b>										<b>3 HP Standard Motor &amp; High Static Drive Accessory</b>												
3000*	646	1.43	669	1.56	692	1.70	714	1.84	734	1.98	755	2.13	775	2.28	793	2.42	813	2.58	830	2.72			
3600*	669	1.72	694	1.88	716	2.02	738	2.18	759	2.34	778	2.49	798	2.66	817	2.82	835	2.98	854	3.16			
4200*	690	2.06	715	2.23	737	2.39	760	2.57	782	2.74	803	2.92	822	3.09	842	3.28	861	3.46	878	3.64			
4800	711	2.44	735	2.63	758	2.81	780	3.00	802	3.19	823	3.38	843	3.58	864	3.78	882	3.97	901	4.17			
5400	734	2.89	758	3.09	780	3.29	801	3.49	822	3.69	844	3.91	864	4.12	883	4.33	903	4.55	921	4.76			
6000	761	3.42	782	3.63	804	3.84	824	4.05	845	4.27	865	4.49	885	4.72	904	4.95	923	5.18	941	5.41			
6600	789	4.05	810	4.26	831	4.49	850	4.71	870	4.94	889	5.18	908	5.41	927	5.65	—	—	—	—			
7200	819	4.76	840	5.00	859	5.23	879	5.47	898	5.72	—	—	—	—	—	—	—	—	—	—			
	<b>5 HP Oversized Motor &amp; Drive</b>																						

**3 HP Standard Motor & High Static Drive Accessory**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Table includes Dehumidification (Hot Gas Reheat Option).

- **Unit applications below 4800 CFM**
- **Electric heaters restricted on applications below 4800 CFM.**
- **Dehumidification (Hot Gas Reheat) or TXV with Frost and Crankcase Heaters are required on applications below 4800 CFM.**

Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options accessories.  
 Note:

1. Field Supplied Fan Sheave BK120 Required. Field Supplied Belt may be necessary. Field Supplied Belt may be necessary.
2. Field Supplied Fan Sheave BK160 Required. Field Supplied Belt may be necessary. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.





# Performance Data

## (17½ Ton) High Efficiency

**Table PD-27 — Evaporator Fan Performance — 17½ Ton — TC\*211C — Standard or TXV Refrigeration System**

CFM	External Static Pressure (Inches of Water)																					
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00			
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
<b>5 HP Standard Motor &amp; Field Supplied Extra Low Static Drive (2)</b>									<b>5 HP Standard Motor &amp; Field Supplied Low Static Drive (1)</b>													
3500*	—	—	—	—	—	—	—	448	0.66	488	0.78	523	0.91	557	1.05	590	1.20	622	1.35	652	1.50	
4550*	—	—	—	—	457	0.90	490	1.03	524	1.17	557	1.32	590	1.48	621	1.64	649	1.80	676	1.97	710	2.63
5600	452	1.14	487	1.30	518	1.45	547	1.60	575	1.75	602	1.91	629	2.08	656	2.26	683	2.43	710	2.63	735	3.19
6300	499	1.63	532	1.76	561	1.94	588	2.10	614	2.26	639	2.43	663	2.60	687	2.79	711	2.99	735	3.19	766	3.85
7000	546	2.11	578	2.31	606	2.52	631	2.71	655	2.89	678	3.07	701	3.25	723	3.44	744	3.64	766	3.85	801	4.65
7700	594	2.75	625	2.98	651	3.21	675	3.43	698	3.64	720	3.84	741	4.03	761	4.23	782	4.44	801	4.65	840	5.60
8400	642	3.52	671	3.78	697	4.03	720	4.27	741	4.51	762	4.73	782	4.95	802	5.16	821	5.38	840	5.60		

**5 HP Standard Motor & High Static Drive Accessory**

**Table PD-27— Evaporator Fan Performance — 17½ Ton — TC\*211C — Continued**

CFM	External Static Pressure (Inches of Water)																					
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00			
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
<b>5 HP Standard Motor &amp; Drive</b>												<b>5 HP Standard Motor &amp; High Static Drive Accessory</b>										
3500*	680	1.65	707	1.80	732	1.95	756	2.11	779	2.27	801	2.43	822	2.60	843	2.77	863	2.94	882	3.11	913	3.89
4550*	703	2.15	729	2.34	754	2.54	779	2.73	803	2.92	827	3.11	849	3.31	871	3.50	892	3.70	913	3.89	935	4.80
5600	736	2.83	761	3.03	785	3.23	807	3.43	829	3.64	851	3.86	872	4.09	893	4.32	914	4.56	935	4.80	952	5.43
6300	759	3.38	783	3.59	807	3.82	830	4.04	853	4.27	874	4.49	894	4.72	913	4.95	933	5.19	952	5.43	975	6.22
7000	788	4.07	810	4.29	831	4.51	852	4.74	874	4.97	895	5.22	917	5.47	937	5.72	957	5.97	975	6.22	997	7.12
7700	821	4.87	841	5.10	861	5.34	881	5.59	900	5.83	919	6.07	939	6.32	958	6.58	978	6.85	997	7.12	—	—
8400	858	5.82	876	6.06	894	6.30	912	6.55	930	6.81	949	7.08	967	7.34	984	7.60	1002	7.87	—	—	—	—

**7.5 Oversize Motor & Drive**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.

For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.

For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.

**\*Unit applications below 5600 CFM**

- **Electric heaters restricted on applications below 5600 CFM.**
- **Dehumidification (Hot Gas Reheat) or TXV with Froststat and Crankcase Heaters are required on applications below 5600 CFM.**

Fan motor heat (MBH) = 3.15 x Fan BHP

Data includes pressure drop due to wet coils and filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Note:

1. Field Supplied Fan Sheave BK190 Required. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.



# Performance Data

# (20 Ton) High Efficiency

**Table PD-28 — Evaporator Fan Performance — 20 Ton — TC\*241C — Standard or TXV Refrigeration System**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>5 HP Standard Motor &amp; Field Supplied Extra Low Static Drive (3)</b>									<b>5 HP Standard Motor &amp; Field Supplied Low Static Drive (1)</b>										
4000*	—	—	—	—	428	0.69	467	0.82	504	0.95	538	1.08	572	1.23	603	1.38	632	1.55	660	1.71
5200*	426	0.94	463	1.09	494	1.22	524	1.35	555	1.51	585	1.67	614	1.83	642	2.00	670	2.17	696	2.35
6400	506	1.64	540	1.84	570	2.03	595	2.19	620	2.34	644	2.51	669	2.69	693	2.89	717	3.09	741	3.29
7200	560	2.28	592	2.50	620	2.72	646	2.92	668	3.10	690	3.27	711	3.45	733	3.65	755	3.86	777	4.08
8000	616	3.07	645	3.31	672	3.56	696	3.80	719	4.02	739	4.22	759	4.41	778	4.60	797	4.81	817	5.03
8800	671	4.04	698	4.29	724	4.55	747	4.83	769	5.10	790	5.34	808	5.56	826	5.77	844	5.98	861	6.20
9600	728	5.19	753	5.46	776	5.74	799	6.04	820	6.34	840	6.63	859	6.90	876	7.14	893	7.37	909	7.59
	<b>5 HP Standard Motor &amp; Drive</b>						<b>(2)</b>		<b>7.5 HP Oversized Motor &amp; Drive</b>											

**Table PD-28 — Evaporator Fan Performance — 20 Ton — TC\*241C — Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>5 HP Standard Motor &amp; Drive</b>												<b>5 HP Standard Motor &amp; High Static Drive Accessory</b>							
4000*	688	1.87	714	2.03	739	2.20	764	2.36	787	2.53	810	2.70	831	2.87	852	3.05	873	3.23	892	3.41
5200*	722	2.54	747	2.73	771	2.93	795	3.14	817	3.35	839	3.56	861	3.77	882	3.98	902	4.19	923	4.41
6400	765	3.49	788	3.70	810	3.91	832	4.12	854	4.34	875	4.57	896	4.80	916	5.04	936	5.29	955	5.54
7200	799	4.31	820	4.53	841	4.76	862	4.99	883	5.22	902	5.46	922	5.69	942	5.94	961	6.19	980	6.44
8000	837	5.26	857	5.51	876	5.76	896	6.01	915	6.26	934	6.52	953	6.77	971	7.03	989	7.29	—	—
8800	879	6.43	897	6.67	915	6.93	933	7.19	951	7.46	969	7.74	986	8.01	—	—	—	—	—	—
9600	925	7.83	941	8.07	958	8.32	974	8.58	—	—	—	—	—	—	—	—	—	—	—	—
	<b>7.5 HP Oversized Motor &amp; Drive</b>																			

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.

**\*Unit applications below 6400 CFM**

- Electric heaters restricted on applications below 6400 CFM.
- Dehumidification (Hot Gas Reheat) or TXV with Frost and Crankcase Heaters are required on applications below 6400 CFM.

Fan motor heat (MBH) = 3.15 x Fan BHP

Data includes pressure drop due to wet coils and filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Notes:

1. Field Supplied Fan Sheave BK190 Required. Field Supplied Belt may be necessary.
2. 7.5 HP Standard Motor with Field Supplied Motor Sheave 1VP50 Required. Field Supplied Belt may be necessary.
3. Field Supplied Fan Sheave B5V200 and Motor Sheave IVP34 required. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.



# Performance Data

# (20 Ton) High Efficiency

**Table PD-29 — Evaporator Fan Performance — 20 Ton — T\*D241C — Dehumidification (Hot Gas Reheat) Option**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>5 HP Standard Motor &amp; Field Supplied Fan Sheave (1)</b>								<b>5 HP Standard Motor &amp; Drive &amp; Field Supplied Low Static Fan Sheave</b>								<b>5 HP Standard Motor &amp; Drive</b>			
4000*	—	—	—	—	441	0.77	477	0.90	511	1.03	543	1.17	573	1.32	603	1.47	631	1.63	658	1.78
4800*	414	0.84	452	0.99	487	1.13	519	1.27	550	1.43	579	1.59	607	1.74	635	1.91	660	2.08	686	2.26
5600*	469	1.25	504	1.45	536	1.61	566	1.78	594	1.95	620	2.12	647	2.30	672	2.49	696	2.67	720	2.87
6400	525	1.80	558	2.03	588	2.24	615	2.42	641	2.61	666	2.80	689	3.00	713	3.20	736	3.41	758	3.62
7200	583	2.50	613	2.75	641	3.02	666	3.23	690	3.44	714	3.65	736	3.86	758	4.08	778	4.30	799	4.53
8000	641	3.37	669	3.64	695	3.93	719	4.21	742	4.45	763	4.67	785	4.91	805	5.14	825	5.38	844	5.62
8800	699	4.42	725	4.72	750	5.03	773	5.35	794	5.65	815	5.91	835	6.15	854	6.41	873	6.66	892	6.93
9600	758	5.67	782	6.00	805	6.32	827	6.68	848	7.04	867	7.35	886	7.63	904	7.90	923	8.18	941	8.46

(3)

5 HP Standard Motor & High Static Drive

**Table PD-29 — Evaporator Fan Performance — 20 Ton — T\*D241C — Continued**

CFM	External Static Pressure (Inches of Water)																			
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>5 HP Standard Motor &amp; Drive</b>																<b>5 HP Standard Motor &amp; High Static Drive</b>			
4000*	684	1.94	708	2.10	731	2.27	753	2.43	775	2.60	795	2.77	814	2.94	834	3.12	852	3.29	870	3.47
4800*	711	2.44	735	2.63	758	2.81	780	3.00	802	3.19	823	3.38	843	3.58	864	3.78	882	3.97	901	4.17
5600*	743	3.06	765	3.26	787	3.46	809	3.67	830	3.88	850	4.09	871	4.31	890	4.53	910	4.75	929	4.98
6400	779	3.82	800	4.04	821	4.26	841	4.48	861	4.70	881	4.93	899	5.16	919	5.41	938	5.66	956	5.90
7200	819	4.76	840	5.00	859	5.23	879	5.47	898	5.72	916	5.96	933	6.19	952	6.46	968	6.70	987	6.97
8000	863	5.87	881	6.12	900	6.38	918	6.64	936	6.90	954	7.16	971	7.42	988	7.69	—	—	—	—
8800	909	7.19	927	7.46	944	7.73	961	8.01	978	8.29	994	8.56	—	—	—	—	—	—	—	—
9600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

7.5 HP Oversized Motor & Drive

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
 For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.  
 For Oversized Evaporator Fan Speed (RPM), reference Table PD-33.  
 Table includes Dehumidification (Hot Gas Reheat Option).

- **Unit applications below 6400 CFM**
- **Electric heaters restricted on applications below 6400 CFM.**
- **Dehumidification (Hot Gas Reheat) or TXV with Froststat and Crankcase Heaters are required on applications below 6400 CFM.**

Fan motor heat (MBH) = 3.15 x Fan BHP  
 Data includes pressure drop due to wet coils and filters.  
 No accessories or options are included in pressure drop data.  
 Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

- Notes:
1. Field Supplied Motor Sheave IVP34 Required. Field Supplied Belt may be necessary.
  2. Field Supplied Fan Sheave BK190 Required. Field Supplied Belt may be necessary.
  3. 7.5 HP Standard Motor with Field Supplied Motor Sheave 1VP50 Required. Field Supplied Belt may be necessary.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



# Performance Data

# (25 Ton) High Efficiency

**Table PD-30 — Evaporator Fan Performance — 25 Ton — TC\*301C — Standard Refrigeration System**

CFM	External Static Pressure (Inches of Water)																			
	.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>7.5 HP Standard Motor &amp; Field Supplied Extra Low Static Drive (1)</b>											<b>7.5 HP Standard Motor &amp; Low Static Drive Accessory</b>									
5000*	—	—	—	—	—	—	—	—	—	—	576	1.56	606	1.71	635	1.88	663	2.05	690	2.22
6500*	—	—	—	—	576	2.11	601	2.27	625	2.43	649	2.59	674	2.78	698	2.97	722	3.18	746	3.38
7000*	—	—	579	2.32	608	2.54	633	2.73	656	2.89	678	3.06	700	3.25	723	3.44	745	3.65	768	3.87
7500*	582	2.59	611	2.78	640	3.02	665	3.24	687	3.43	708	3.61	729	3.79	749	3.98	770	4.19	792	4.41
8000	616	3.07	645	3.31	672	3.56	696	3.80	719	4.02	739	4.22	759	4.41	778	4.60	797	4.81	817	5.03
8500	650	3.66	678	3.90	704	4.16	728	4.43	750	4.68	771	4.90	790	5.10	808	5.31	826	5.52	844	5.74
9000	685	4.31	712	4.56	737	4.83	760	5.12	782	5.39	802	5.65	821	5.88	839	6.09	856	6.30	873	6.53
9500	721	5.04	746	5.30	770	5.58	792	5.88	814	6.18	834	6.46	853	6.72	870	6.96	887	7.18	903	7.41
10000	756	5.85	780	6.12	803	6.41	825	6.72	846	7.04	866	7.35	884	7.64	902	7.90	918	8.14	934	8.38
10500	791	6.74	814	7.03	836	7.33	858	7.64	878	7.98	898	8.31	916	8.62	—	—	—	—	—	—
11000	827	7.71	849	8.02	870	8.33	891	8.63	—	—	—	—	—	—	—	—	—	—	—	—

**7.5 HP Standard Motor & Drive**

**7.5 HP Standard Motor & Higher Static Drive Accessory**

**Table PD-30 — Evaporator Fan Performance — 25 Ton — TC\*301C — Continued**

CFM	External Static Pressure (Inches of Water)									
	1.10		1.20		1.30		1.40		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
<b>7.5 HP Standard Motor &amp; Drive</b>										
5000*	716	2.41	741	2.60	765	2.80	789	3.00	812	3.20
6500*	769	3.59	792	3.80	814	4.01	836	4.22	857	4.44
7000*	790	4.09	812	4.31	833	4.53	854	4.76	875	4.99
7500*	813	4.65	833	4.88	854	5.12	874	5.36	894	5.59
8000	837	5.26	857	5.51	876	5.76	896	6.01	915	6.26
8500	863	5.97	881	6.21	900	6.46	919	6.73	937	6.99
9000	890	6.76	908	7.00	925	7.25	943	7.52	961	7.79
9500	919	7.64	936	7.88	952	8.13	969	8.40	985	8.67
10000	949	8.62	—	—	—	—	—	—	—	—
10500	—	—	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—

**7.5 HP Standard Motor & High Static Drive Accessory**

For Standard Evaporator Fan Speed (RPM), reference Table PD-31.  
For Standard Motor & High Static Drive Accessory Fan Speed (RPM), reference Table PD-32.

For Standard Motor & Low Static Drive Accessory Fan Speed (RPM), reference Table PD-34.

Fan motor heat (MBH) = 3.15 x Fan BHP

**\*Unit applications below 8000 CFM**

- Electric heaters restricted on applications below 8000 CFM.
- Dehumidification (Hot Gas Reheat) or TXV with Froststat and Crankcase Heaters are required on applications below 8000 CFM.

Notes:

Data includes pressure drop due to wet coils and filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-35 to determine add'l static pressure drop due to other options/accessories.

Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

\*Indicates both downflow and horizontal units.

# Performance Data

## (12½-25 Ton)

**Table PD-31— Standard Motor & Drive/Fan Speed (Rpm)**

Tons	Unit Model No.	6Turns Open	5Turns Open	4Turns Open	3Turns Open	2Turns Open	1Turn Open	Closed
12½	TC*150D3,4,W, TC*151C3,4,W	640	680	720	760	800	840	N/A
	TC*150DK	705	756	806	857	907	957	N/A
15	TC*180B3,4,W	679	721	764	806	849	891	N/A
	TC*180BK	N/A	680	733	785	837	889	941
	TC*181C3,4,W	560	600	640	680	720	760	N/A
17½	TC*210C3,4,W	869	923	978	1032	1087	1141	N/A
	TC*210CK	869	924	978	1032	1087	1141	N/A
	TC*211C3,4,W	615	659	703	747	791	835	N/A
20	TC*240B3,4,W,TC*241C3,4,W	615	659	703	747	791	835	N/A
	TC*240BK	590	627	664	701	738	775	N/A
25	TC*300B/301C3,4,W	705	742	779	817	854	891	N/A
	TC*300BK	701	738	775	812	849	886	N/A

Factory set at 3 turns open.

**Table PD-32— Standard Motor & High Static Drive Accessory/Fan Speed (Rpm)**

Tons	Unit Model No.	6Turns Open	5Turns Open	4Turns Open	3Turns Open	2Turns Open	1Turn Open	Closed
12½	TC*151C3,4,W	807	857	908	958	1009	1059	N/A
15	TC*180B3,4,W	806	849	891	934	976	1019	N/A
	TC*181B3,4,W	640	680	720	760	800	840	N/A
17½	TC*211C3,4,W	835	879	923	967	1011	1055	N/A
20	TC*240B/241C3,4,W	835	879	923	967	1011	1055	N/A
25	TC*300B/301C3,4,W	816	853	890	928	965	1002	N/A

**Table PD-33— Oversized Motor & Drive/Fan Speed (Rpm)**

Tons	Unit Model No.	6Turns Open	5Turns Open	4Turns Open	3Turns Open	2Turns Open	1Turn Open	Closed
12½	TC*150D,151C3,4,W	869	923	978	1032	1087	1141	N/A
15	TC*180B3,4,W	806	856	907	957	1008	1058	N/A
	TC*181C3,4,W	705	755	806	856	907	957	N/A
17½	TC*210C3,4,W	949	1008	1068	1127	1187	1246	N/A
	TC*211C3,4,W	816	853	890	928	965	1002	N/A
20	TC*240B/241C3,4,W	816	853	890	928	965	1002	N/A

**Table PD-34 — Standard Motor & Low Static Fan Drive**

Tons	Unit Model No.	6Turns Open	5Turns Open	4Turns Open	3Turns Open	2Turns Open	1Turn Open	Closed
17½	TC*210C3,4,W	705	755	806	856	907	957	N/A
25	TC*300B/301C3,4,W	594	631	668	705	742	779	N/A

\*Indicates both downflow and horizontal units.



# Performance Data

(12½-25 Ton)

**Table PD-35 — Static Pressure Drops Through Accessories (Inches Water Column)**

Tons	Unit Model No.	CFM	Standard Filters <sup>1</sup>	Through Reheat Coil	2 Inch Pleated Filters <sup>4</sup>	Economizer with OA/RA Dampers <sup>2</sup>		Electric Heater Accessory (KW) <sup>3</sup>				
						100% OA	100% RA	5-12	14-27	36	54	72
12½	TC*150D, TCH151C	4000	0.05	—	0.08	0.19	0.02	—	0.03	0.03	0.04	—
		5000	0.07	—	0.11	0.26	0.03	—	0.04	0.05	0.06	—
		6000	0.10	—	0.15	0.33	0.04	—	0.06	0.07	0.09	—
	TCD151C	2500	0.02	0.01	0.03	0.07	0.01	—	*	*	*	—
		4000	0.05	0.03	0.08	0.19	0.02	—	0.03	0.03	0.04	—
		5000	0.07	0.05	0.11	0.26	0.03	—	0.04	0.05	0.06	—
15	TC*180B	6000	0.10	—	0.15	0.33	0.04	—	0.06	0.07	0.08	—
		7200	0.15	—	0.19	0.40	0.05	—	0.09	0.10	0.12	—
		3000	0.02/0.01	0.01	0.03/0.02	0.07	0.03	—	*	*	*	—
	TCD181C	4800	0.04/0.03	0.02	0.07/0.06	0.14	0.03	—	0.04	0.04	0.05	—
		6000	0.06/0.05	0.03	0.10/0.09	0.20	0.04	—	0.06	0.07	0.08	—
		7200	0.09/0.07	0.04	0.13/0.11	0.27	0.05	—	0.09	0.10	0.12	—
TCH181C	4800	0.04/0.03	—	0.07/0.06	0.14	0.03	—	0.04	0.04	0.05	—	
	6000	0.06/0.05	—	0.10/0.09	0.20	0.04	—	0.06	0.07	0.08	—	
	7200	0.09/0.07	—	0.13/0.11	0.27	0.05	—	0.09	0.10	0.12	—	
17½	TC*210C	5600	0.09	—	0.13	0.30	0.04	—	—	0.06	0.07	—
		7000	0.14	—	0.18	0.39	0.05	—	—	0.10	0.11	—
		8400	0.20	—	0.24	0.47	0.06	—	—	0.15	0.17	—
	TCD211C	3500	0.02/0.02	—	0.03/0.03	0.09	0.03	—	—	*	*	*
		5600	0.06/0.05	—	0.09/0.08	0.18	0.04	—	—	0.05	0.06	0.07
		7000	0.09/0.07	—	0.13/0.11	0.26	0.04	—	—	0.08	0.09	0.11
TCH211C	8400	0.12/0.10	—	0.17/0.14	0.35	0.06	—	—	0.12	0.13	0.16	
	5600	0.06/0.05	—	0.09/0.08	0.18	0.04	—	—	0.05	0.06	0.07	
	7000	0.09/0.07	—	0.13/0.11	0.26	0.04	—	—	0.08	0.09	0.11	
20	TCD240B	8400	0.12/0.10	—	0.17/0.14	0.35	0.06	—	—	0.12	0.13	0.16
		6400	0.07	—	0.11	0.22	0.04	—	—	0.06	0.08	0.09
		8000	0.11	—	0.15	0.32	0.05	—	—	0.10	0.12	0.14
	TCD241C	9600	0.16	—	0.20	0.44	0.07	—	—	0.14	0.17	0.20
		4000	0.03	0.02	0.04	0.11	0.03	—	—	*	*	*
		6400	0.07	0.04	0.11	0.22	0.04	—	—	0.06	0.08	0.09
TCH240B, TCH241C	8000	0.09	—	0.13	0.32	0.05	—	—	0.10	0.12	0.14	
	9600	0.13	—	0.17	0.44	0.07	—	—	0.14	0.17	0.20	
	7000	0.09	—	0.13	0.26	0.04	—	—	0.08	0.10	0.11	
25	TCD300B	9000	0.14	—	0.18	0.40	0.07	—	—	0.13	0.15	0.18
		11000	0.21	—	0.25	0.57	0.10	—	—	0.18	0.22	0.26
		5000	0.04	—	0.06	0.15	0.03	—	—	*	*	*
	TCD301C	7000	0.09	—	0.13	0.26	0.04	—	—	0.08	0.10	0.11
		9000	0.14	—	0.18	0.40	0.07	—	—	0.13	0.15	0.18
		11000	0.21	—	0.25	0.57	0.10	—	—	0.18	0.22	0.26
TCH300B, TCH301C	7000	0.07	—	0.11	0.26	0.04	—	—	0.08	0.10	0.11	
	9000	0.11	—	0.15	0.40	0.07	—	—	0.13	0.15	0.18	
	11000	0.17	—	0.22	0.60	0.10	—	—	0.18	0.22	0.26	

**Notes:**

1. Tested with: 2" filters 12½-25 tons
  2. OA = Outside Air and RA = Return Air.
  3. Nominal KW ratings at 240, 480, 600 volts.
  4. Difference in pressure drop should be considered when utilizing optional 2" pleated filters.
- \*Heaters not permitted at airflows below 320 cfm/ton.

\*Indicates both downflow and horizontal units.

# Performance Data

## (12½-25 Ton)

**Table PD-36 — Auxiliary Electric Heat Capacity**

Tons	Unit Model No.	Total2		No. of Stages	Stage1		Stage 2	
		KW Input <sup>1</sup>	MBH Output <sup>1</sup>		KW Input <sup>1</sup>	MBH Output <sup>1</sup>	KW Input <sup>1</sup>	MBH Output <sup>1</sup>
12½-15	TC*150D3,D4,DW,DK	18.00	61.47	1	18.00	61.47	—	—
	TC*180B3,B4,BW,BK	27.00 <sup>4</sup>	92.15	2	9.00	30.72	18.00	61.43
	TC*151 or 181C3,C4,CW	36.00	122.94	2	18.00	61.47	18.00	61.47
17½, 20, 25	TC*210C3,C4,CW,CK	54.00	184.41	2	36.00	122.94	18.00	61.47
	TC*240, 300B3,B4,BW,BK	36.00	122.94	2	18.00	61.47	18.00	61.47
	TC*211, 241, 301C3,C4,CW	54.00	184.41	2	36.00	122.94	18.00	61.47
		72.00 <sup>3</sup>	245.88	2	36.00	122.94	36.00	122.94

**Notes:**

- Does not include indoor fan power or heat.
- Heaters are rated at 240v, 480v. and 600v. For other than rated voltage, CAP =  $\left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \times \text{rated cap.}$
- Not available on TC\*210C.
- 27KW heater can be used with TCD181C4, TCD211C4, TCD241C4 and TCD301C4 only. Cannot be used with oversized motor.

**Table PD-37 — Electric Heater Voltage Correction Factors (Applicable to Auxiliary Heat Capacity)**

Nominal Voltage	Distribution Voltage	Capacity Multiplier
240	208	0.75
	230	0.92
	240	1.00
480	440	0.84
	460	0.94
	480	1.00
600	540	0.81
	575	0.92
	600	1.00

**Table PD-38 — Air Temperature Rise Across Electric Heaters (Degree F)**

KW	Stages	12½ Ton	15 Ton	17½ Ton	20 Ton	25 Ton
		5000 CFM	6000 CFM	7000 CFM	8000 CFM	9000 CFM
		Three Phase TC*150 TC*151	Three Phase TC*180 TC*181	Three Phase TC*210 TC*211	Three Phase TC*240 TC*241	Three Phase TC*300 TC*301
9.00	1	—	—	—	—	—
17.30	1	—	—	—	—	—
18.00	1	11.4	9.5	—	—	—
27.00	2	—	14.2 <sup>2</sup>	12.2 <sup>21</sup>	10.7 <sup>2</sup>	9.5 <sup>2</sup>
36.00	2	22.8	19.0	16.3	14.2	12.6
54.00	2	34.1	28.5	24.4	21.3	19.0
72.00 <sup>2</sup>	2	—	—	32.5	28.5	25.3

For minimum design airflow, see airflow performance table for each unit.  
To calculate temp rise at different air flow, use following formula:

$$\text{Temp. Rise across Elect. Htr} = \frac{\text{KW} \times 3413}{1.08 \times \text{CFM}}$$

**Notes:**

- Not available on TC\*210 model.
- 27KW heater can be used with TCD181C4, TCD211C4, TCD241C4 and TCD301C4 only. Cannot be used with oversized motor.



# Performance Data

**Table PD-39— Hot Gas Reheat Temperature Rise<sup>1,2,3</sup>**

		Leaving Evaporator Dry Bulb [F] <sup>1</sup>						
Tons	SCFM	35	40	45	50	55	60	65
12½	2500	23.4	23.8	25.0	26.9	29.5	32.9	37.0
	3000	21.4	21.6	22.5	24.0	26.0	28.7	31.9
	3500	19.5	19.7	20.4	21.5	23.1	25.2	27.7
	4000	17.8	18.1	18.6	19.6	20.9	22.5	24.5
	4500	16.3	16.7	17.3	18.1	19.2	20.5	22.1
	5000	14.9	15.5	16.2	17.1	18.0	19.2	20.4
	5500	13.5	14.4	15.3	16.2	17.2	18.1	19.1
6000	12.1	13.4	14.6	15.7	16.7	17.6	18.3	
Tons	SCFM	35	40	45	50	55	60	65
15	3000	34.4	36.7	38.9	41.2	43.5	45.8	48.1
	3600	29.3	31.2	33.1	35.0	36.9	38.8	40.8
	4200	25.4	27.0	28.6	30.2	31.9	33.5	35.1
	4800	22.3	23.7	25.1	26.5	27.9	29.3	30.7
	5400	19.9	21.2	22.4	23.7	24.9	26.2	27.4
	6000	18.0	19.1	20.3	21.4	22.5	23.7	24.8
	6600	16.4	17.5	18.6	19.6	20.7	21.7	22.8
7200	15.1	16.1	17.1	18.1	19.1	20.1	21.1	
Tons	SCFM	35	40	45	50	55	60	65
20	4000	22.0	22.5	23.6	25.4	27.7	30.6	34.0
	4800	19.1	19.8	20.9	22.3	24.0	26.1	28.5
	5600	16.6	17.4	18.4	19.5	20.9	22.4	24.0
	6400	14.7	15.5	16.3	17.2	18.2	19.3	20.6
	7200	13.5	14.1	14.7	15.4	16.2	17.0	17.9
	8000	12.9	13.2	13.7	14.2	14.8	15.5	16.2
	8800	12.5	12.9	13.3	13.7	14.2	14.8	15.4
9600	12.4	12.8	13.1	13.5	13.9	14.5	15.0	

**Notes:**

1. Temperature does not account for indoor fan heat.
2. 70 deg OD Ambient Temperature.
3. For units with the Dehumidification (Hot Gas Reheat) option.



# Controls

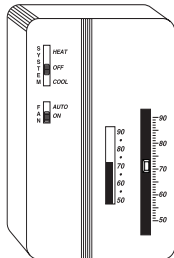
## Field Installed Control Options

### Zone Sensors

Zone sensors are the building occupant's comfort control devices. They replace the conventional electro-mechanical thermostats. The following zone sensor options are available for Voyager units with the ReliaTel™ control:

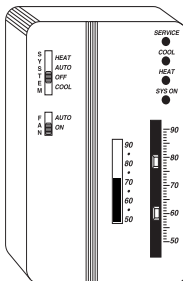
#### Manual Changeover

Heat, Cool or Off System Switch. Fan Auto or Off Switch. One temperature setpoint lever.



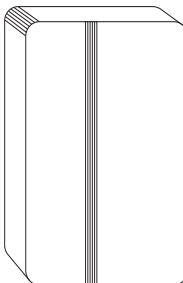
#### Manual/Automatic Changeover

Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Optional Status Indication LED lights, System On, Heat, Cool, or Service.



#### Remote Sensor

Sensor(s) available for all zone sensors to provide remote sensing capabilities.

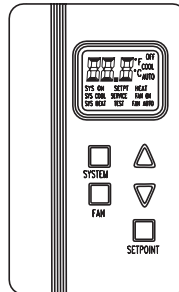


#### Dual Thermistor Remote Zone Sensor

This sensor will allow the customer to reduce the total number of remote sensors to obtain space temperature averaging. This sensor should be utilized with ReliaTel controls.

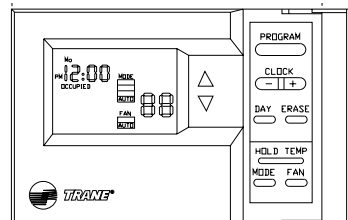
### Digital Display Zone Sensor

The Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality of standard zone sensors. This sensor includes a digital display of set point adjustment and space temperature in F (Fahrenheit) or C (Celsius). Includes FAN and SYSTEM buttons (supports the service functions of the standard sensor). E-squared memory stores last programmed set points. Requires 24 VAC (Volts AC). This sensor should be utilized with ReliaTel controls.



### Programmable Night Setback

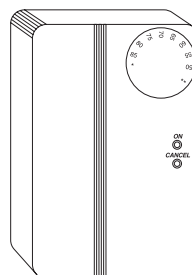
Auto or manual changeover with seven-day programming. Keyboard selection



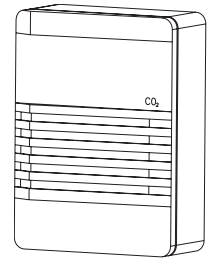
of Heat, Cool, Fan, Auto, or On. All programmable sensors have System On, Heat, Cool, Service LED/indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Un-occupied, and two (2) Override programs per day.

### Integrated Comfort™ System

Sensor(s) available with optional temperature adjustment and override buttons to provide central control through a Trane Integrated Comfort system.



**CO<sub>2</sub> Sensing** The CO<sub>2</sub> sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO<sub>2</sub> (Carbon Dioxide) in the air. As the CO<sub>2</sub> levels increase, the outside air damper modulates to meet the CO<sub>2</sub> space ventilation requirements. The CO<sub>2</sub> sensor kit is available as a field installed accessory.



### Economizer Controls

The standard equipment offering is a fixed dry bulb changeover control. In addition, there are two optional controls, Enthalpy and Differential Enthalpy Control.

#### Enthalpy Control

Replaces the dry bulb control with a wet bulb changeover controller which has a fully adjustable set point. Enthalpy control offers a higher level of comfort control, along with energy savings potential, than the standard dry bulb control. This is due to the additional wet bulb sensing capability.

#### Differential Enthalpy

Replaces the standard dry bulb control with two enthalpy sensors that compare total heat content of the indoor air and outdoor air to determine the most efficient air source. This control option offers the highest level of comfort control, plus energy efficiency, available.

#### Remote Potentiometer

Minimum position setting of economizer can be remotely adjusted with this accessory.

#### Differential Pressure Switches

This factory or field-installed option allows individual fan failure and dirty filter indication. The fan failure switch will disable all unit functions and "flash" the Service LED on the zone sensor. The dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation.

#### Trane Communication Interface (TCI)

This factory or field-installed micro-processor interface allows the unit to communicate to Trane's Integrated Comfort system.



# Electrical Data (Standard Efficiency)

**Table ED-1 – Unit Wiring – Standard Efficiency**

Tons	Unit Model No.	Unit Operating Voltage Range	Standard Indoor Fan Motor		Oversize Indoor Fan Motor	
			Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>	Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>
12½	TC*150D3	187-253	63	80	69	80
	TC*150D4	414-506	33	40	36	40
	TC*150DW	518-633	26	30	28	35
	TC*150DK	342-418	43	50	–	–
15	TC*180B3	187-253	78	90	84	100
	TC*180B4	414-506	39	50	42	50
	TC*180BW	517-633	31	40	33	40
	TC*180BK	342-418	50	60	–	–
17½	TC*210C3	187-253	88	100	96	125
	TC*210C4	414-506	44	50	47	60
	TC*210CW	517-633	35	45	38	45
	TC*210CK	342-418	57	70	–	–
20	TC*240B3	187-253	100	125	107	125
	TC*240B4	414-506	50	60	54	60
	TC*240BW	517-633	40	45	43	50
	TC*240BK	342-418	65	80	–	–
25	TC*300B3	187-253	118	150	–	–
	TC*300B4	414-506	58	70	–	–
	TC*300BW	517-633	46	50	–	–
	TC*300BK	342-418	70	80	–	–

- Notes:  
 1. HACR breaker per NEC.  
 2. Values do not include power exhaust accessory.

\*Indicates both downflow and horizontal units.

# Electrical Data (Standard Efficiency)

**Table ED-2 – Unit Wiring With Electric Heat (Single Point Connection) – Standard Efficiency (Downflow Only)**

Tons	To Use With	Heater Model No.	Heater KW Rating <sup>1</sup>	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>
<b>208/230 Volts Three Phase</b>								
12½	TCD150D3	AYDHTRF318A	13.5/18.0	1	63/68	80/80	69/76	80/80
		AYDHTRF336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYDHTRF354A	40.5/54.0	2	154/176	175/200	162/184	175/200
15	TCD180B3	AYDHTRK318A	13.5/18.0	1	78/78	100/100	84/84	100/100
		AYDHTRK336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYDHTRK354A	40.5/54.0	2	154/176	175/200	162/184	175/200
17½	TCD210C3	AYDHTRL336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYDHTRL354A	40.5/54.0	2	162/184	175/200	171/193	175/200
20	TCD240B3	AYDHTRL336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYDHTRL354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYDHTRK372A	54.0/72.0	2	209/238	225/250	218/247	225/250
25	TCD300B3	AYDHTRL336A	27.0/36.0	2	125/139	150/150	—	—
		AYDHTRL354A	40.5/54.0	2	171/193	175/200	—	—
		AYDHTRK372A	54.0/72.0	2	218/247	225/250	—	—
<b>460 Volts Three Phase</b>								
12½	TCD150D4	AYDHTRL418A	18.0	1	34	40	37	40
		AYDHTRK436A	36.0	2	61	70	64	70
		AYDHTRK454A	54.0	2	88	90	91	100
15	TCD180B4	AYDHTRL418A	18.0	1	39	50	42	50
		AYDHTRK436A	36.0	2	61	70	64	70
		AYDHTRK454A	54.0	2	88	90	91	100
17½	TCD210C4	AYDHTRL436A	36.0	2	64	70	68	70
		AYDHTRL454A	54.0	2	91	100	95	100
20	TCD240B4	AYDHTRL436A	36.0	2	64	70	68	70
		AYDHTRL454A	54.0	2	91	100	95	100
		AYDHTRK472A	72.0	2	118	125	123	125
25	TCD300B4	AYDHTRL436A	36.0	2	68	70	—	—
		AYDHTRL454A	54.0	2	95	100	—	—
		AYDHTRK472A	72.0	2	123	125	—	—
<b>575 Volts Three Phase</b>								
12½	TCD150DW	AYDHTRKW18A	18.0	1	27	30	30	35
		AYDHTRMW36A	36.0	2	49	50	51	60
		AYDHTRKW54A	54.0	2	70	70	73	80
15	TCD180BW	AYDHTRKW18A	18.0	1	31	40	33	40
		AYDHTRMW36A	36.0	2	49	50	51	60
		AYDHTRKW54A	54.0	2	70	70	73	80
17½	TCD210CW	AYDHTRMW36A	36.0	2	51	60	55	60
		AYDHTRLW54A	54.0	2	73	80	77	80
20	TCD240BW	AYDHTRMW36A	36.0	2	51	60	55	60
		AYDHTRLW54A	54.0	2	73	80	77	80
		AYDHTRKW72A	72.0	2	95	100	98	100
25	TCD300BW	AYDHTRMW36A	36.0	2	55	60	—	—
		AYDHTRLW54A	54.0	2	77	80	—	—
		AYDHTRKW72A	72.0	2	98	100	—	—

Notes:  
 1. Heater kw ratings are at 208/240 for 208/230V unit, 480V for 460 unit and 600V for 575 unit.  
 2. HACR type circuit breaker per NEC.



# Electrical Data (Standard Efficiency)

**Table ED-2 – Unit Wiring With Electric Heat (Single Point Connection) – Standard Efficiency (Downflow Only), continued**

Tons	To Use With	Heater Model No.	Heater KW Rating <sup>1</sup>	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>
<b>380 Volts Three Phase</b>								
12½	TCD150DK	AYDHTRL418A	11.3	1	43	50	—	—
		AYDHTRK436A	22.6	2	55	60	—	—
		AYDHTRK454A	33.8	2	76	80	—	—
15	TCD180BK	AYDHTRL418A	11.3	1	50	60	—	—
		AYDHTRK436A	22.6	2	55	60	—	—
		AYDHTRK454A	33.8	2	76	80	—	—
17½	TCD210CK	AYDHTRL436A	22.6	2	60	70	—	—
		AYDHTRL454A	33.8	2	81	90	—	—
20	TCD240BK	AYDHTRL436A	22.6	2	65	80	—	—
		AYDHTRL454A	33.8	2	81	90	—	—
		AYDHTRK472A	45.1	2	103	110	—	—
25	TCD300BK	AYDHTRL436A	22.6	2	70	80	—	—
		AYDHTRL454A	33.8	2	81	90	—	—
		AYDHTRK472A	45.1	2	103	100	—	—

Notes:  
 1. Heater kw ratings are at 380V for 380 unit.  
 2. HACR type circuit breaker per NEC.



# Electrical Data

## (Standard Efficiency)

**Table ED-3 – Unit Wiring With Electric Heat (Single Point Connection) – Standard Efficiency (Horizontal Only)**

Tons	To Use With	Heater Model No.	Heater KW Rating <sup>1</sup>	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>
<b>208/230 Volts Three Phase</b>								
12½	TCH150D3	AYHHTRN318A	13.5/18.0	1	63/68	80/80	69/76	80/80
		AYHHTRN336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYHHTRN354A	40.5/54.0	2	154/176	175/200	162/184	175/200
15	TCH180B3	AYHHTRN318A	13.5/18.0	1	78/78	100/100	84/84	100/100
		AYHHTRP336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYHHTRP354A	40.5/54.0	2	154/176	175/200	162/184	175/200
17½	TCH210C3	AYHHTRQ336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYHHTRQ354A	40.5/54.0	2	162/184	175/200	171/193	175/200
20	TCH240B3	AYHHTRN336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYHHTRN354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYHHTRN372A	54.0/72.0	2	209/238	225/250	218/247	225/250
25	TCH300B3	AYHHTRN336A	27.0/36.0	2	132/139	150/150	—	—
		AYHHTRN354A	40.5/54.0	2	171/193	175/200	—	—
		AYHHTRN372A	54.0/72.0	2	218/247	225/250	—	—
<b>460 Volts Three Phase</b>								
12½	TCH150D4	AYHHTRN418A	18.0	1	34	40	37	40
		AYHHTRN436A	36.0	2	61	70	64	70
		AYHHTRP454A	54.0	2	88	90	91	100
15	TCH180B4	AYHHTRN418A	18.0	1	37	50	42	50
		AYHHTRP436A	36.0	2	61	70	64	70
		AYHHTRP454A	54.0	2	88	90	91	100
17½	TCH210C4	AYHHTRQ436A	36.0	2	64	70	68	70
		AYHHTRQ454A	54.0	2	91	100	95	100
20	TCH240B4	AYHHTRN436A	36.0	2	64	70	68	70
		AYHHTRN454A	54.0	2	91	100	95	100
		AYHHTRN472A	72.0	2	118	125	123	125
25	TCH300B4	AYHHTRN436A	36.0	2	68	70	—	—
		AYHHTRN454A	54.0	2	95	100	—	—
		AYHHTRN472A	72.0	2	123	125	—	—
<b>575 Volts Three Phase</b>								
12½	TCH150DW	AYHHTRNW18A	18.0	1	27	30	30	35
		AYHHTRPW36A	36.0	2	49	50	51	60
		AYHHTRPW54A	54.0	2	70	70	73	80
15	TCH180BW	AYHHTRNW18A	18.0	1	31	40	33	40
		AYHHTRPW36A	36.0	2	49	50	51	60
		AYHHTRPW54A	54.0	2	70	70	73	80
17½	TCH210CW	AYHHTRPW36A	36.0	2	51	60	55	60
		AYHHTRQW54A	54.0	2	73	80	77	80
20	TCH240BW	AYHHTRMW36A	36.0	2	51	60	55	60
		AYHHTRNW54A	54.0	2	73	80	77	80
		AYHHTRNW72A	72.0	2	95	100	98	100
25	TCH300BW	AYHHTRMW36A	36.0	2	55	60	—	—
		AYHHTRNW54A	54.0	2	77	80	—	—
		AYHHTRNW72A	72.0	2	98	100	—	—

**Notes:**

1. Heater kw ratings are at 208/240 for 208/230V unit, 480V for 460 unit and 600V for 575 unit..
2. HACR type circuit breaker per NEC.



# Electrical Data (Standard Efficiency)

**Table ED-3 – Unit Wiring With Electric Heat (Single Point Connection) – Standard Efficiency (Horizontal Only) continued**

Tons	To Use With	Heater Model No.	Heater KW Rating <sup>1</sup>	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>
<b>380 Volts Three Phase</b>								
12½	TCD150DK	AYDHTRL418A	11.3	1	43	50	—	—
		AYDHTRK436A	22.6	2	55	60	—	—
		AYDHTRK454A	33.8	2	76	80	—	—
15	TCD180BK	AYDHTRL418A	11.3	1	50	60	—	—
		AYDHTRK436A	22.6	2	55	60	—	—
		AYDHTRK454A	33.8	2	76	80	—	—
17½	TCD210CK	AYDHTRL436A	22.6	2	60	70	—	—
		AYDHTRL454A	33.8	2	81	90	—	—
20	TCD240BK	AYDHTRL436A	22.6	2	65	80	—	—
		AYDHTRL454A	33.8	2	81	90	—	—
		AYDHTRK472A	45.1	2	103	110	—	—
25	TCD300BK	AYDHTRL436A	22.6	2	70	80	—	—
		AYDHTRL454A	33.8	2	81	90	—	—
		AYDHTRK472A	45.1	2	103	100	—	—

Notes:

1. Heater kw ratings are at 380V for 380 unit.
2. HACR type circuit breaker per NEC.



# Electrical Data (Standard Efficiency)

**Table ED-4— Electrical Characteristics — Compressor Motor And Condenser Motor — 60 Cycle — Standard Efficiency**

Tons	Unit Model No.	No.	Compressor Motors						Condenser Fan Motors				
			Volts	Phase	HP <sup>2</sup>	RPM	Amps <sup>1</sup>		No.	Phase	HP	Amps <sup>1</sup>	
							RLA	LRA				FLA	LRA
12½	TC*150D3	2	208-230	3	6.00	3450	20.4	156	2	1	.50	3.2	8.8
	TC*150D4	2	460	3	6.00	3450	10.8	75	2	1	.50	1.6	3.8
	TC*150DW	2	575	3	6.00	3450	8.3	54	2	1	.50	1.3	3.2
	TC*150DK	2	380	3	6.0	3450	13.1	70	2	1	.50	1.9	5.2
15	TC*180B3	2	208-230	3	9.30/5.10	3450	31.9/20.7	253/128	2	1	.50	3.2	8.8
	TC*180B4	2	460	3	9.30/5.10	3450	16.3/10.0	113/63	2	1	.50	1.6	3.8
	TC*180BW	2	575	3	9.30/5.10	3450	13.1/7.4	85/49	2	1	.50	1.3	3.2
	TC*180BK	2	380	3	9.3/5.1	3450	19.7/12.1	125/64	2	1	.50	1.9	5.2
17½	TC*210C3	2	208-230	3	9.3/6.0	3450	31.5/20.8	253/156	2	1	1.00	5.5	18.3
	TC*210C4	2	460	3	9.3/6.0	3450	15.9/10.0	113/75	2	1	1.00	2.9	9.3
	TC*210CW	2	575	3	9.3/6.0	3450	12.8/8.2	85/54	2	1	1.00	2.0	5.7
	TC*210CK	2	380	3	9.3/6.0	3450	19.2/12.1	125/70	2	1	1.00	3.5	8.5
20	TC*240B3	2	208-230	3	9.30	3450	31.7	253	2	1	1.00	5.5	18.3
	TC*240B4	2	460	3	9.30	3450	16.2	113	2	1	1.00	2.9	9.3
	TC*240BW	2	575	3	9.30	3450	13.0	85	2	1	1.00	2.0	5.7
	TC*240BK	2	380	3	9.3	3450	19.6	125	2	1	1.00	3.5	8.5
25	TC*300B3	2	208-230	3	10.00	3450	36.6	278	2	1	1.00	5.5	18.3
	TC*300B4	2	460	3	10.00	3450	17.9	124	2	1	1.00	2.9	9.3
	TC*300BW	2	575	3	10.00	3450	14.9	92	2	1	1.00	2.0	5.7
	TC*300BK	2	380	3	10.0	3450	21.7	137	2	1	1.00	3.5	8.5

**Notes:**

1. Amp draw for each motor; multiply value by numbers of motors to determine total amps.
2. HP for each compressor.

\*Indicates both downflow and horizontal units.



# Electrical Data

## (High Efficiency)

**Table ED-5 – Unit Wiring - High Efficiency - Standard Refrigeration System**

Tons	Unit Model No.	Unit Operating Voltage Range	Standard Indoor Fan Motor		Oversize Indoor Fan Motor	
			Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>	Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>
12½	TC*151C3	187-253	64	80	70	90
	TC*151C4	414-506	31	40	34	40
	TC*151CW	517-633	25	30	28	35
15	TC*181C3	187-253	74	90	80	100
	TC*181C4	414-506	36	50	38	50
	TC*181CW	517-633	29	40	31	40
17½	TC*211C3	187-253	91	110	98	125
	TC*211C4	414-506	44	60	48	60
	TC*211CW	517-633	35	45	38	50
20	TC*241C3	187-253	99	125	107	125
	TC*241C4	414-506	50	60	54	60
	TC*241CW	517-633	40	50	43	50
25	TC*301C3	187-253	120	150	N/A	N/A
	TC*301C4	414-506	58	70	N/A	N/A
	TC*301CW	517-633	47	60	N/A	N/A

Notes:

1. HACR breaker per NEC.
2. Values do not include power exhaust accessory.

**Table ED-6 – Unit Wiring - High Efficiency - TXV/Face-Split Evaporator Coil Option (Downflow Only)**

Tons	Unit Model No.	Unit Operating Voltage Range	Standard Indoor Fan Motor		Oversize Indoor Fan Motor	
			Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>	Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>
12½	TCD151C3	187-253	59	70	65	80
	TCD151C4	414-506	30	35	32	40
	TCD151CW	517-633	24	30	26	30
15	TCD181C3	187-253	74	90	80	90
	TCD181C4	414-506	37	50	39	50
	TCD181CW	517-633	30	40	32	40
17½	TCD211C3	187-253	91	125	99	125
	TCD211C4	414-506	45	60	49	60
	TCD211CW	517-633	36	45	39	50
20	TCD241C3	187-253	99	125	107	125
	TCD241C4	414-506	51	60	54	70
	TCD241CW	517-633	40	50	43	50
25	TCD301C3	187-253	117	150	N/A	N/A
	TCD301C4	414-506	57	70	N/A	N/A
	TCD301CW	517-633	46	50	N/A	N/A

Notes:

1. HACR breaker per NEC.
2. Values do not include power exhaust accessory.



# Electrical Data

## (High Efficiency)

**Table ED-7 – Unit Wiring - High Efficiency - Dehumidification (Hot Gas Reheat) Option  
(Downflow Only)**

Tons	Unit Model No.	Unit Operating Voltage Range	Standard Indoor Fan Motor		Oversize Indoor Fan Motor	
			Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>	Minimum Circuit Ampacity <sup>2</sup>	Maximum Fuse Size or Maximum Circuit Breaker <sup>1</sup>
12½	TCD151C3	187-253	59	70	65	80
	TCD151C4	414-506	30	35	32	40
	TCD151CW	517-633	24	30	26	30
15	TCD181C3	187-253	71	90	77	100
	TCD181C4	414-506	36	45	39	50
	TCD181CW	517-633	28	35	30	40
20	TCD241C3	187-253	98	125	105	125
	TCD241C4	414-506	50	60	53	60
	TCD241CW	517-633	39	50	42	50

Notes:

1. HACR breaker per NEC.
2. Values do not include power exhaust accessory.



# Electrical Data

(High Efficiency)

**Table ED-8 – Unit Wiring With Electric Heat (Single Point Connection) – High Efficiency, Standard Refrigeration System (Downflow Only)**

Tons	To Use With	Heater Model No.	Heater KW Rating	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>1</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>
<b>208/230 Volts Three Phase</b>								
12½	TCD151C3	AYDHTRK318A	13.5/18.0	1	64/68	80/80	70/76	90/90
		AYDHTRK336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYDHTRK354A	40.5/54.0	2	154/176	175/200	162/184	175/200
15	TCD181C3	AYDHTRK318A	13.5/18.0	1	74/74	100/100	80/80	100/100
		AYDHTRK336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYDHTRK354A	40.5/54.0	2	154/176	175/200	162/184	175/200
17½	TCD211C3	AYDHTRL336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYDHTRL354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYDHTRK372A	54.0/72.0	2	209/238	225/250	218/247	225/250
20	TCD241C3	AYDHTRL336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYDHTRL354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYDHTRK372A	54.0/72.0	2	209/238	225/250	218/247	225/250
25	TCD301C3	AYDHTRL336A	27.0/36.0	2	125/139	150/150	—	—
		AYDHTRL354A	40.5/54.0	2	171/193	175/200	—	—
		AYDHTRK372A	54.0/72.0	2	218/247	225/250	—	—
<b>460 Volts Three Phase</b>								
12½	TCD151C4	AYDHTRL418A	18.0	1	34	40	37	40
		AYDHTRK436A	36.0	2	61	70	64	70
		AYDHTRK454A	54.0	2	88	90	91	100
15	TCD181C4	AYDHTRL418A	18.0	1	36	50	38	50
		AYDHTRK427A	27.0	2	47	50	—	—
		AYDHTRK436A	36.0	2	61	70	64	70
17½	TCD211C4	AYDHTRK454A	54.0	2	88	90	91	100
		AYDHTRL427A	27.0	2	51	60	—	—
		AYDHTRL436A	36.0	2	64	70	68	70
20	TCD241C4	AYDHTRL454A	54.0	2	91	100	95	100
		AYDHTRK472A	72.0	2	118	125	123	125
		AYDHTRL427A	27.0	2	51	60	—	—
25	TCD301C4	AYDHTRL436A	36.0	2	64	70	68	70
		AYDHTRL454A	54.0	2	91	100	95	100
		AYDHTRK472A	72.0	2	118	125	123	125
<b>575 Volts Three Phase</b>								
12½	TCD151CW	AYDHTRKW18A	18.0	1	27	30	30	35
		AYDHTRMW36A	36.0	2	49	50	51	60
		AYDHTRKW54A	54.0	2	70	70	73	80
15	TCD181CW	AYDHTRKW18A	18.0	1	29	40	31	40
		AYDHTRMW36A	36.0	2	49	50	31	40
		AYDHTRKW54A	54.0	2	70	70	73	80
17½	TCD211CW	AYDHTRMW36A	36.0	2	51	60	55	60
		AYDHTRLW54A	54.0	2	73	80	77	80
		AYDHTRKW72A	72.0	2	95	100	98	100
20	TCD241CW	AYDHTRMW36A	36.0	2	51	60	55	60
		AYDHTRLW54A	54.0	2	73	80	77	80
		AYDHTRKW72A	72.0	2	95	100	98	100
25	TCD301CW	AYDHTRMW36A	36.0	2	55	60	—	—
		AYDHTRLW54A	54.0	2	77	80	—	—
		AYDHTRKW72A	72.0	2	98	100	—	—

Notes:  
 1. HACR type circuit breaker per NEC.  
 2. Values do not include power exhaust accessory.

# Electrical Data

(High Efficiency)

**Table ED-9 – Unit Wiring With Electric Heat (Single Point Connection) – High Efficiency, Standard Refrigeration System (Horizontal Only)**

Tons	To Use With	Heater Model No.	Heater KW Rating	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>1</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>
<b>208/230 Volts Three Phase</b>								
12½	TCH151C3	AYHHTRN318A	13.5/18.0	1	64/68	80/80	70/76	90/90
		AYHHTRP336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYHHTRP354A	40.5/54.0	2	154/176	175/200	162/184	175/200
15	TCH181C3	AYHHTRM318A	13.5/18.0	1	74/74	100/100	80/80	100/100
		AYHHTRM336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYHHTRM354A	40.5/54.0	2	154/176	175/200	162/184	175/200
17½	TCH211C3	AYHHTRN336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYHHTRN354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYHHTRN372A	54.0/72.0	2	209/238	225/250	218/247	225/250
20	TCH241C3	AYHHTRN336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYHHTRN354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYHHTRN372A	54.0/72.0	2	209/238	225/250	218/247	225/250
25	TCH301C3	AYHHTRN336A	27.0/36.0	2	125/139	150/150	—	—
		AYHHTRN354A	40.5/54.0	2	171/193	175/200	—	—
		AYHHTRN372A	54.0/72.0	2	218/247	225/250	—	—
<b>460 Volts Three Phase</b>								
12½	TCH151C4	AYHHTRN418A	18.0	1	34	40	37	40
		AYHHTRP436A	36.0	2	61	70	64	70
		AYHHTRP454A	54.0	2	88	90	91	100
15	TCH181C4	AYHHTRM418A	18.0	1	36	50	38	50
		AYHHTRM436A	36.0	2	61	70	64	70
		AYHHTRM454A	54.0	2	88	90	91	100
17½	TCH211C4	AYHHTRN436A	36.0	2	64	70	68	70
		AYHHTRN454A	54.0	2	91	100	95	100
		AYHHTRN472A	72.0	2	118	125	123	125
20	TCH241C4	AYHHTRN436A	36.0	2	64	70	68	70
		AYHHTRN454A	54.0	2	91	100	95	100
		AYHHTRN472A	72.0	2	118	125	123	125
25	TCH301C4	AYHHTRN436A	36.0	2	68	70	—	—
		AYHHTRN454A	54.0	2	95	100	—	—
		AYHHTRN472A	72.0	2	123	125	—	—
<b>575 Volts Three Phase</b>								
12½	TCH151CW	AYHHTRNW18A	18.0	1	27	30	30	35
		AYHHTRPW36A	36.0	2	49	50	51	60
		AYHHTRPW54A	54.0	2	70	70	73	80
15	TCH181CW	AYHHTRMW18A	18.0	1	29	40	31	40
		AYHHTRMW36A	36.0	2	49	50	31	40
		AYHHTRMW54A	54.0	2	70	70	73	80
17½	TCH211CW	AYHHTRMW36A	36.0	2	51	60	55	60
		AYHHTRNW54A	54.0	2	73	80	77	80
		AYHHTRNW72A	72.0	2	95	100	98	100
20	TCH241CW	AYHHTRMW36A	36.0	2	51	60	55	60
		AYHHTRNW54A	54.0	2	73	80	77	80
		AYHHTRNW72A	72.0	2	95	100	98	100
25	TCH301CW	AYHHTRMW36A	36.0	2	55	60	—	—
		AYHHTRNW54A	54.0	2	77	80	—	—
		AYHHTRNW72A	72.0	2	98	100	—	—

**Notes:**

1. HACR type circuit breaker per NEC.
2. Values do not include power exhaust accessory.



# Electrical Data

(High Efficiency)

**Table ED-10— Unit Wiring With Electric Heat (Single Point Connection) — High Efficiency, TXV/Face-Split Evaporator Coil and 151/181/ 241 Reheat Option(Downflow Only)**

Tons	To Use With	Heater Model No.	Heater KW Rating	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>1,2</sup>
<b>208/230 Volts Three Phase</b>								
12½	TCD151C3	AYDHTRK318A	13.5/18.0	1	61/68	70/70	68/76	80/80
		AYDHTRK336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYDHTRK354A	40.5/54.0	2	154/176	175/200	162/184	175/200
15	TCD181C3	AYDHTRK318A	13.5/18.0	1	74/74	100/100	80/80	90/90
		AYDHTRK336A	27.0/36.0	2	108/122	110/125	115/130	125/150
		AYDHTRK354A	40.5/54.0	2	154/176	175/200	162/184	175/200
	TCD181C3	*AYDHTRK318A	13.5/18.0	1	71/71	90/90	77/77	100/100
17½	TCD211C3	AYDHTRL336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYDHTRL354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYDHTRK372A	54.0/72.0	2	209/238	225/250	218/247	225/250
20	TCD241C3	AYDHTRL336A	27.0/36.0	2	115/130	125/150	125/139	125/150
		AYDHTRL354A	40.5/54.0	2	162/184	175/200	171/193	175/200
		AYDHTRK372A	54.0/72.0	2	209/238	225/250	218/247	225/250
25	TCD301C3	AYDHTRL336A	27.0/36.0	2	125/139	150/150	—	—
		AYDHTRL354A	40.5/54.0	2	171/193	175/200	—	—
		AYDHTRK372A	54.0/72.0	2	218/247	225/250	—	—
<b>460 Volts Three Phase</b>								
12½	TCD151C4	AYDHTRL418A	18.0	1	34	35	37	40
		AYDHTRK436A	36.0	2	61	70	64	70
		AYDHTRK454A	54.0	2	88	90	91	100
15	TCD181C4	AYDHTRL418A	18.0	1	37	50	39	50
		AYDHTRK427A <sup>3</sup>	27.0	2	47	50	—	—
		AYDHTRK436A	36.0	2	61	70	64	70
		AYDHTRK454A	54.0	2	88	90	91	100
	TCD181C4	*AYDHTRL418A	18.0	1	36	45	39	50
17½	TCD211C4	AYDHTRL427A <sup>3</sup>	27.0	2	51	60	—	—
		AYDHTRL436A	36.0	2	64	70	68	70
		AYDHTRL454A	54.0	2	91	100	95	100
		AYDHTRK472A	72.0	2	118	125	123	125
20	TCD241C4	AYDHTRL427A <sup>3</sup>	27.0	2	51	60	—	—
		AYDHTRL436A	36.0	2	64	70	68	70
		AYDHTRL454A	54.0	2	91	100	95	100
		AYDHTRK472A	72.0	2	118	125	123	125
25	TCD301C4	AYDHTRL427A <sup>3</sup>	27.0	2	57	70	—	—
		AYDHTRL436A	36.0	2	68	70	—	—
		AYDHTRL454A	54.0	2	95	100	—	—
		AYDHTRK472A	72.0	2	123	125	—	—

**Notes:**

1. HACR type circuit breaker per NEC.
  2. Values do not include power exhaust accessory.
  3. Do not use with oversized motor.
- \* Applies only to Dehumidification (Hot Gas Reheat) Models

# Electrical Data

## (High Efficiency)

**Table ED-10— Unit Wiring With Electric Heat (Single Point Connection) — High Efficiency, TXV/Face-Split Evaporator Coil and 151/181/ 241 Reheat Option(Downflow Only), continued**

Tons	To Use With	Heater Model No.	Heater KW Rating	Control Stages	Standard Indoor Motor		Oversize Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker <sup>2</sup>	MCA	Max Fuse Size or Max Circuit Breaker <sup>1,2</sup>
<b>575 Volts Three Phase</b>								
12½	TCD151CW	AYDHTRKW18A	18.0	1	27	30	30	30
		AYDHTRMW36A	36.0	2	49	50	51	60
		AYDHTRKW54A	54.0	2	70	70	73	80
15	TCD181CW	AYDHTRKW18A	18.0	1	30	40	32	40
		AYDHTRMW36A	36.0	2	49	50	51	60
		AYDHTRKW54A	54.0	2	70	70	73	80
	TCD181CW	*AYDHTRKW18A	18.0	1	28	35	30	40
17½	TCD211CW	AYDHTRMW36A	36.0	2	51	60	55	60
		AYDHTRLW54A	54.0	2	73	80	77	80
		AYDHTRKW72A	72.0	2	95	100	98	100
20	TCD241CW	AYDHTRMW36A	36.0	2	51	60	55	60
		AYDHTRLW54A	54.0	2	73	80	77	80
		AYDHTRKW72A	72.0	2	95	100	98	100
25	TCD301CW	AYDHTRMW36A	36.0	2	55	60	—	—
		AYDHTRLW54A	54.0	2	77	80	—	—
		AYDHTRKW72A	72.0	2	98	100	—	—

**Notes:**

1. HACR type circuit breaker per NEC.
  2. Values do not include power exhaust accessory.
  3. Do not use with oversized motor.
- \* Applies only to Dehumidification (Hot Gas Reheat) Models



# Electrical Data (High Efficiency)

**Table ED-11 – Electrical Characteristics – Compressor Motor And Condenser Motor – 60 Cycle – High Efficiency, Standard Refrigeration System**

Tons	Unit Model No.	No.	Compressor Motors						Condenser Fan Motors				
			Volts	Phase	HP <sup>2</sup>	RPM	Amps <sup>1</sup>		No.	Phase	HP	Amps <sup>1</sup>	
							RLA	LRA				FLA	LRA
12½	TC*151C3	2	208-230	3	5.70	3450	20.7	156	2	1	.50	3.2	8.8
	TC*151C4	2	460	3	5.70	3450	10.0	75	2	1	.50	1.6	3.8
	TC*151CW	2	575	3	5.70	3450	8.2	54	2	1	.50	1.3	3.2
15	TC*181C3	2	208-230	3	9.30/4.50	3450	31.5/16.9	253/124	2	1	.50	3.2	8.8
	TC*181C4	2	460	3	9.30/4.50	3450	15.1/8.2	113/59.6	2	1	.50	1.6	3.8
	TC*181CW	2	575	3	9.30/4.50	3450	12.1/6.6	85/49.4	2	1	.50	1.3	3.2
17½	TC*211C3	2	208-230	3	10.0/5.70	3450	33.3/20.7	278/156	2	1	1.00	5.5	18.3
	TC*211C4	2	460	3	10.0/5.70	3450	16.3/10.0	124/75	2	1	1.00	2.9	9.3
	TC*211CW	2	575	3	10.0/5.70	3450	13.2/8.2	92/54	2	1	1.00	2.0	5.7
20	TC*241C3	2	208-230	3	9.30	3450	31.6	253	2	1	1.00	5.5	18.3
	TC*241C4	2	460	3	9.30	3450	16.1	113	2	1	1.00	2.9	9.3
	TC*241CW	2	575	3	9.30	3450	12.9	85	2	1	1.00	2.0	5.7
25	TC*301C3	2	208-230	3	10.00	3450	37.6	278	2	1	1.00	5.5	18.3
	TC*301C4	2	460	3	10.00	3450	18.3	124	2	1	1.00	2.9	9.3
	TC*301CW	2	575	3	10.00	3450	14.9	92	2	1	1.00	2.0	5.7

- Notes:  
 1. Amp draw for each motor; multiply value by numbers of motors to determine total amps.  
 2. HP for each compressor.

**Table ED-12 – Electrical Characteristics – Compressor Motor And Condenser Motor – 60 Cycle – High Efficiency, TXV/Face-Split Evaporator Coil Option (Downflow Only)**

Tons	Unit Model No.	No.	Compressor Motors						Condenser Fan Motors				
			Volts	Phase	HP <sup>2</sup>	RPM	Amps <sup>1</sup>		No.	Phase	HP	Amps <sup>1</sup>	
							RLA	LRA				FLA	LRA
12½	TCD151C3	2	208-230	3	5.7	3450	18.6	156	2	1	.50	3.2	8.8
	TCD151C4	2	460	3	5.7	3450	9.4	75	2	1	.50	1.6	3.8
	TCD151CW	2	575	3	5.7	3450	7.4	54	2	1	.50	1.3	3.2
15	TCD181C3	2	208-230	3	9.30/4.50	3450	32.1/16.4	253/124	2	1	.50	3.2	8.8
	TCD181C4	2	460	3	9.30/4.50	3450	15.6/8.7	113/59.6	2	1	.50	1.6	3.8
	TCD181CW	2	575	3	9.30/4.50	3450	12.3/7.4	85/49.4	2	1	.50	1.3	3.2
17½	TCD211C3	2	208-230	3	10.00/5.7	3450	34.8/19.5	278/156	2	1	1.00	5.5	18.3
	TCD211C4	2	460	3	10.00/5.7	3450	17.0/10.3	124/75	2	1	1.00	2.9	9.3
	TCD211CW	2	575	3	10.00/5.7	3450	13.8/8.1	92/54	2	1	1.00	2.0	5.7
20	TCD241C3	2	208-230	3	9.0/9.3	3500/3450	30.4/32.6	225/253	2	1	1.00	5.5	18.3
	TCD241C4	2	460	3	9.0/9.3	3500/3450	16.1/16.8	114/113	2	1	1.00	2.9	9.3
	TCD241CW	2	575	3	9.0/9.3	3500/3450	12.5/13.4	80/85	2	1	1.00	2.0	5.7
25	TCD301C3	2	208-230	3	10.00	3450	36.2	278	2	1	1.00	5.5	18.3
	TCD301C4	2	460	3	10.00	3450	17.7	124	2	1	1.00	2.9	9.3
	TCD301CW	2	575	3	10.00	3450	14.3	92	2	1	1.00	2.0	5.7

- Notes:  
 1. Amp draw for each motor; multiply value by numbers of motors to determine total amps.  
 2. HP for each compressor.

**Table ED-13 – Electrical Characteristics – Compressor Motor And Condenser Motor – 60 Cycle – Dehumidification (Hot Gas Reheat) Option (Downflow Only)**

Tons	Unit Model No.	No.	Compressor Motors						Condenser Fan Motors				
			Volts	Phase	HP <sup>2</sup>	RPM	Amps <sup>1</sup>		No.	Phase	HP	Amps <sup>1</sup>	
							RLA	LRA				FLA	LRA
12½	TCD151C3	2	208-230	3	5.7/5.7	3450	18.6	156	2	1	.50	3.2	8.8
	TCD151C4	2	460	3	5.7/5.7	3450	9.7	75	2	1	.50	1.6	3.8
	TCD151CW	2	575	3	5.7/5.7	3450	7.6	54	2	1	.50	1.3	3.2
15	TCD181C3	2	208-230	3	8.3/5.7	3450	27.4/19.0	208/156	2	1	.50	3.2	8.8
	TCD181C4	2	460	3	8.3/5.7	3450	13.8/10.1	100/75	2	1	.50	1.6	3.8
	TCD181CW	2	575	3	8.3/5.7	3450	10.7/7.9	68/54	2	1	.50	1.3	3.2
20	TCD241C3	2	208-230	3	9.0/9.3	3500/3450	30.1/31.7	225/253	2	1	1.00	5.5	18.3
	TCD241C4	2	460	3	9.0/9.3	3500/3450	15.6/16.2	114/113	2	1	1.00	2.9	9.3
	TCD241CW	2	575	3	9.0/9.3	3500/3450	12.1/13.0	80/85	2	1	1.00	2.0	5.7

- Notes:  
 1. Amp draw for each motor; multiply value by numbers of motors to determine total amps.  
 2. HP for each compressor.

\*Indicates both downflow and horizontal units.

# Electrical Data

**Table ED-14 — Electrical Characteristics — Evaporator Fan Motor — 60 Cycle — Standard and Oversized**

Tons	Unit Model No.	Standard Evaporator Fan Motor						Oversized Evaporator Fan Motor					
		No.	Volts	Phase	HP	Amps		No.	Volts	Phase	HP	Amps	
						FLA	LRA					FLA	LRA
12½	TC*150D3, TC*151C3	1	208-230	3	3.00	10.6	81.0	1	208-230	3	5.00	16.7	109.8
	TC*150D4, TC*151C4	1	460	3	3.00	4.8	40.5	1	460	3	5.00	7.6	54.9
	TC*150DW, TC*151CW	1	575	3	3.00	3.9	31.0	1	575	3	5.00	6.1	41.6
	TC*150DK	1	380	3	5.0	9.2	66.5	—	—	—	—	—	—
15	TC*180B3, TC*181C3	1	208-230	3	3.00	10.6	81.0	1	208-230	3	5.00	16.7	109.8
	TC*180B4, TC*181C4	1	460	3	3.00	4.8	40.5	1	460	3	5.00	7.6	54.9
	TC*180BW, TC*181CW	1	575	3	3.00	3.9	31.0	1	575	3	5.00	6.1	41.6
	TC*180BK	1	380	3	5.0	9.2	66.5	—	—	—	—	—	—
17½	TC*210C3, TC*211C3	1	208-230	3	5.00	16.7	109.8	1	208-230	3	7.50	24.2	120.4
	TC*210C4, TC*211C4	1	460	3	5.00	7.6	54.9	1	460	3	7.50	11.0	74.0
	TC*210CW, TC*211CW	1	575	3	5.00	6.1	41.6	1	575	3	7.50	9.0	60.0
	TC*210CK	1	380	3	7.5	13.3	83.5	—	—	—	—	—	—
20	TC*240B3, TC*241C3	1	208-230	3	5.00	16.7	109.8	1	208-230	3	7.50	24.2	120.4
	TC*240B4, TC*241C4	1	460	3	5.00	7.6	54.9	1	460	3	7.50	11.0	74.0
	TC*240BW, TC*241CW	1	575	3	5.00	6.1	41.6	1	575	3	7.50	9.0	60.0
	TC*240BK	1	380	3	7.5	13.3	83.5	—	—	—	—	—	—
25	TC*300B3, TC*301C3	1	208-230	3	7.50	24.2	120.4	—	—	—	—	—	—
	TC*300B4, TC*301C4	1	460	3	7.50	11.0	74.0	—	—	—	—	—	—
	TC* 300BW, TC*301CW	1	575	3	7.50	9.0	60.0	—	—	—	—	—	—
	TC*300BK	1	380	3	7.5	13.3	83.5	—	—	—	—	—	—

\*Indicates both downflow and horizontal units.



# Electrical Data

**Table ED-15 – Electrical Characteristics – Power Exhaust Accessory**

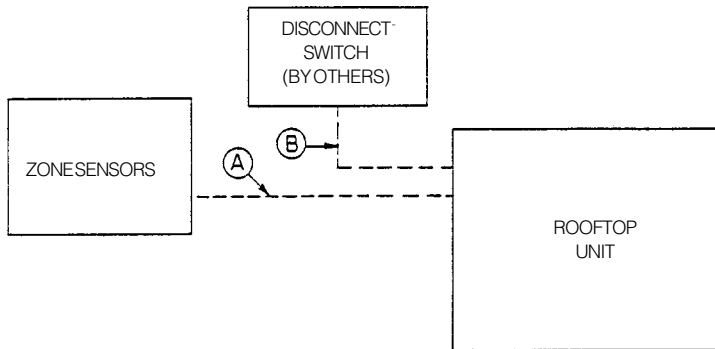
Tons	Accessory Operating Voltage	Phase	HP	RPM	√Amps	
					FLA	LRA
12½ <sup>1,2</sup>	208-230	1	3/4	1040	6.6	13.5
15, 17½	460	1	3/4	1040	3.2	8.4
20, 25	575	1	3/4	1040	2.1	5.2

Notes:

1. 12½ Ton Standard Unit.
2. 12½ Ton High Efficiency Unit.



# Jobsite Connections



### Zone Sensors – Typical Number Of Wires

A— Manual Changeover .....	4
Manual/Auto Changeover .....	5
Manual/Auto Changeover with Status Indication LED's .....	10
Programmable Night Setback with Status Indication LED's .....	7
B— 3 Power Wires + 1 Ground Wire (three phase)	
2 Power Wires + 1 Ground Wire (single phase)	

For specific wiring information, see the installation instructions.

All wiring except power wires is low voltage.

All customer supplied wiring to be copper and must conform to NEC or CEC and local electrical codes. Wiring shown dotted is to be furnished and installed by the customer.

# Typical Wiring

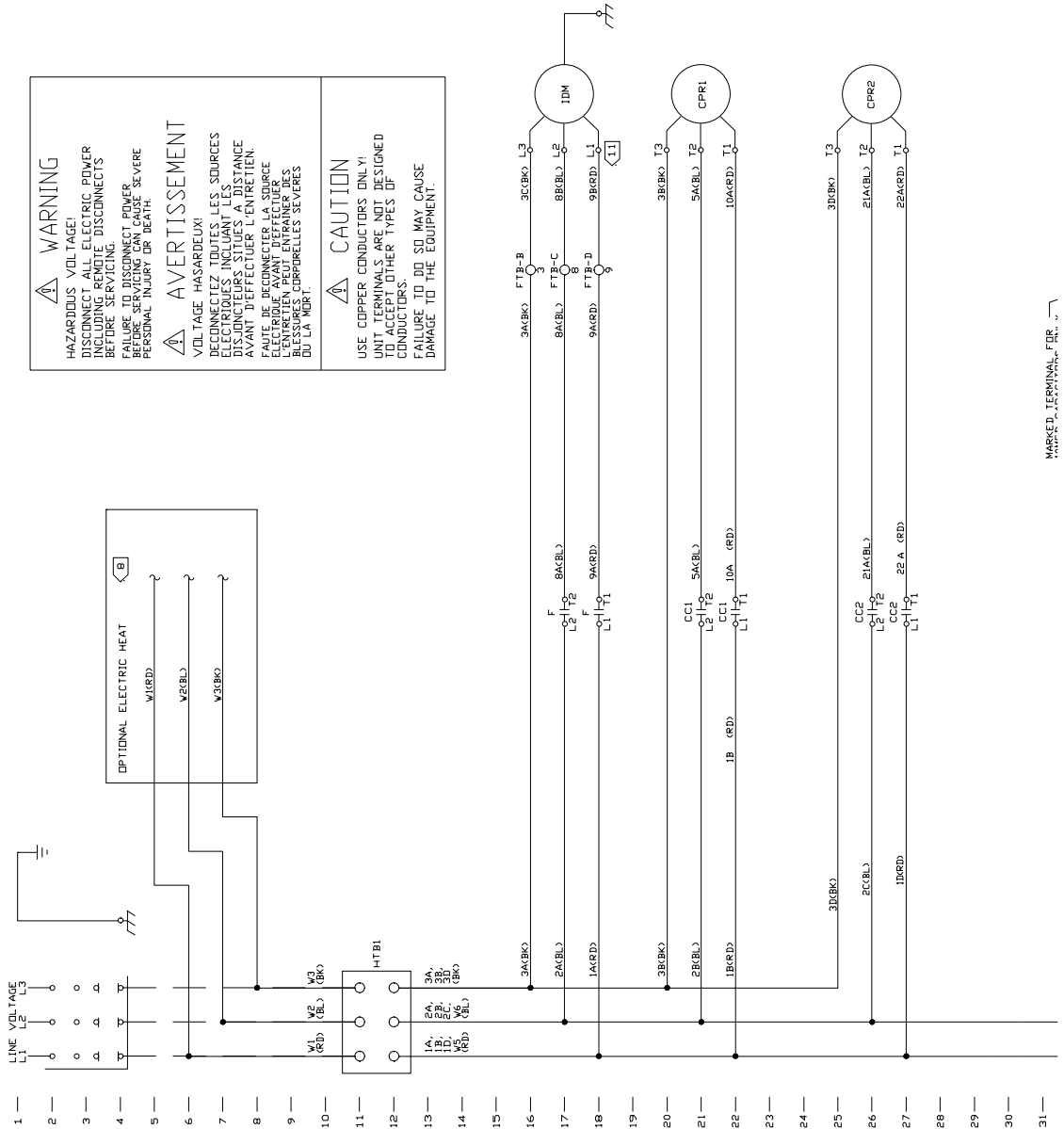
(12½-25 Ton)

WIRE DESIGNATION	DESCRIPTION	LINE NUMBER
AMCH	HEATER CONTACTOR (STAGE 1)	106,107
BH2H	HEATER CONTACTOR (STAGE 2)	108,109
BMS	BUILDING MANAGEMENT SYSTEM	91
CC1,CC2	COMPRESSOR CONTACTOR	64,65
CP1,CP2	OUTDOOR MOTOR CAPACITOR	33,37
CFS	CLOGGED FILTER SWITCH	98
CPRI,CPR2	COMPRESSOR	21,26
EXF	EXHAUST FAN RELAY	91
DTS	DISCHARGE TEMPERATURE SENSOR	93
ECA	ECONOMIZER ACTUATOR	93
FFS	FAN FAILURE SWITCH	100
F	INDOOR FAN CONTACTOR	17,18
RTM	RELATIEL OPTIIONS MODULE	
CDMM	COMMUNICATION MODULE	
FTB	FAN TERMINAL BLOCK	16,17,18
HTBI	HIGH PRESSURE CONTROL	112,114
HTB	HI VOLTAGE TERMINAL BLOCK	11
LTB	LOW VOLTAGE TERM BLOCK	17
LPC1,LPC2	LOW PRESSURE CONTROL	79,80
DAS	OUTDOOR AIR SENSOR	70
DHS	OUTDOOR HUMIDITY SENSOR	100
DDM1,DDM2	OUTDOOR FAN MOTOR	33,37
DDP1,DDP2	OUTDOOR FAN RELAY	59,69,34,38
RAS	RETURN AIR SENSOR	96
RHS	RETURN HUMIDITY SENSOR	98
RHT	RETURN HIGH TEMPERATURE	66
RMP	REMOTE MINIMUM POSITION	98
SAS	SUPPLY AIR SENSOR	91
SHT	SUPPLY HIGH TEMPERATURE	66
TC1	TRANE COMMUNICATION INTERFACE	63
TNS1	CONTROL POWER TRANSFORMER	58
ZXR	ZONING FAN RELAY	99
ZXR	ZONING FAN RELAY	80
RPT5,RPW5	ECONOMIZER PUS	
RPT7,RPW7	ELECTRIC HEAT PLUG	90-102

**⚠ WARNING**  
HAZARDOUS VOLTAGE!  
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.  
FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

**⚠ AVERTISSEMENT**  
VOLTAGE HASARDEUX!  
DECONNECTEZ TOUTES LES SOURCES DE COURANT ÉLECTRIQUE, Y COMPRIS LES DISCONNECTS À DISTANCE, AVANT D'EFFECTUER L'ENTRETIEN.  
FAUTE DE DECONNECTER LA SOURCE ÉLECTRIQUE AVANT D'EFFECTUER LE TRAVAIL PEUT CAUSER DE GRAVES BLESSURES PERSONNELLES SEVERES OU LA MORT.

**⚠ CAUTION**  
USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.



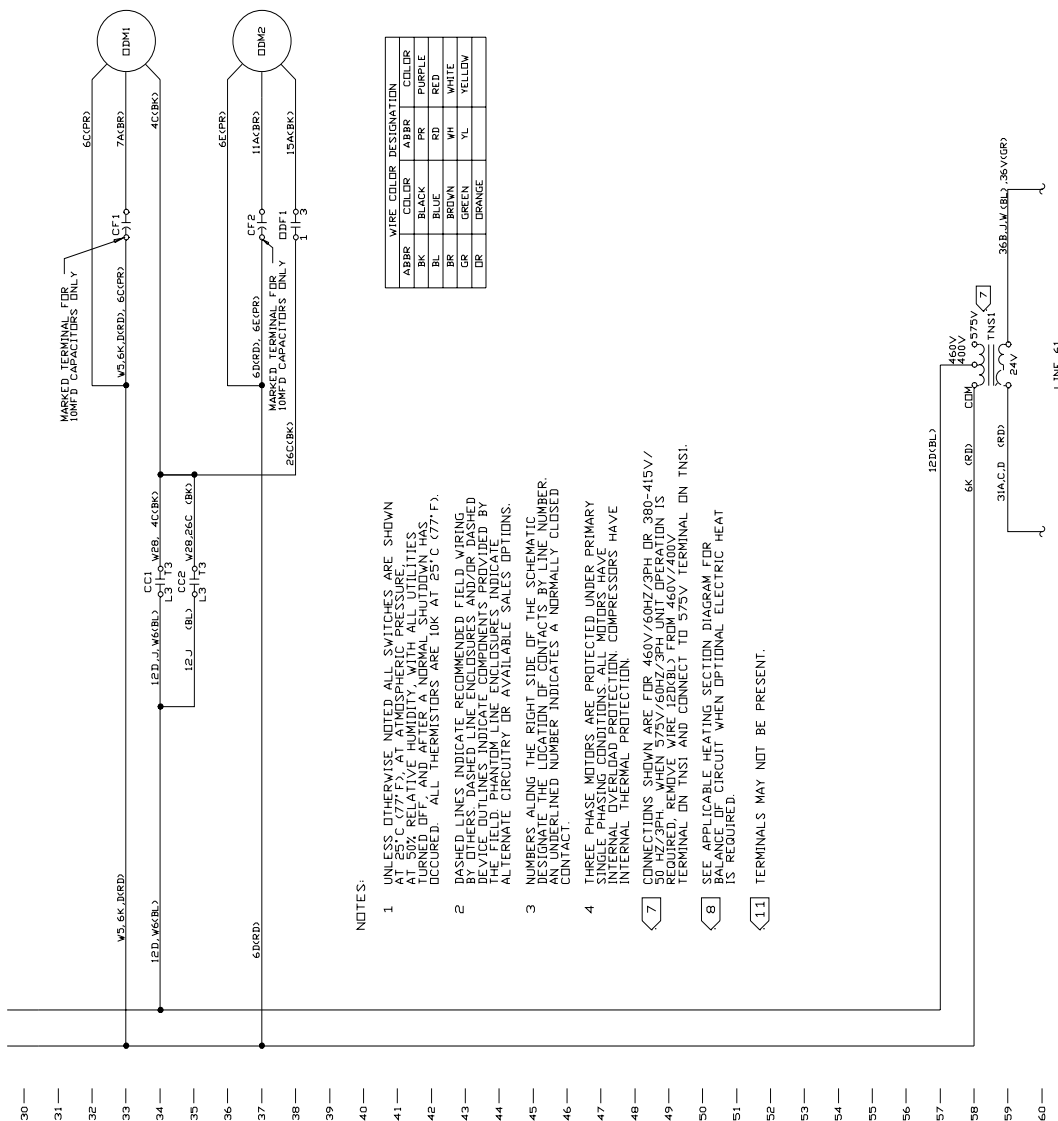
MARKED TERMINAL FOR

# Typical Wiring

## (12½-25 Ton)

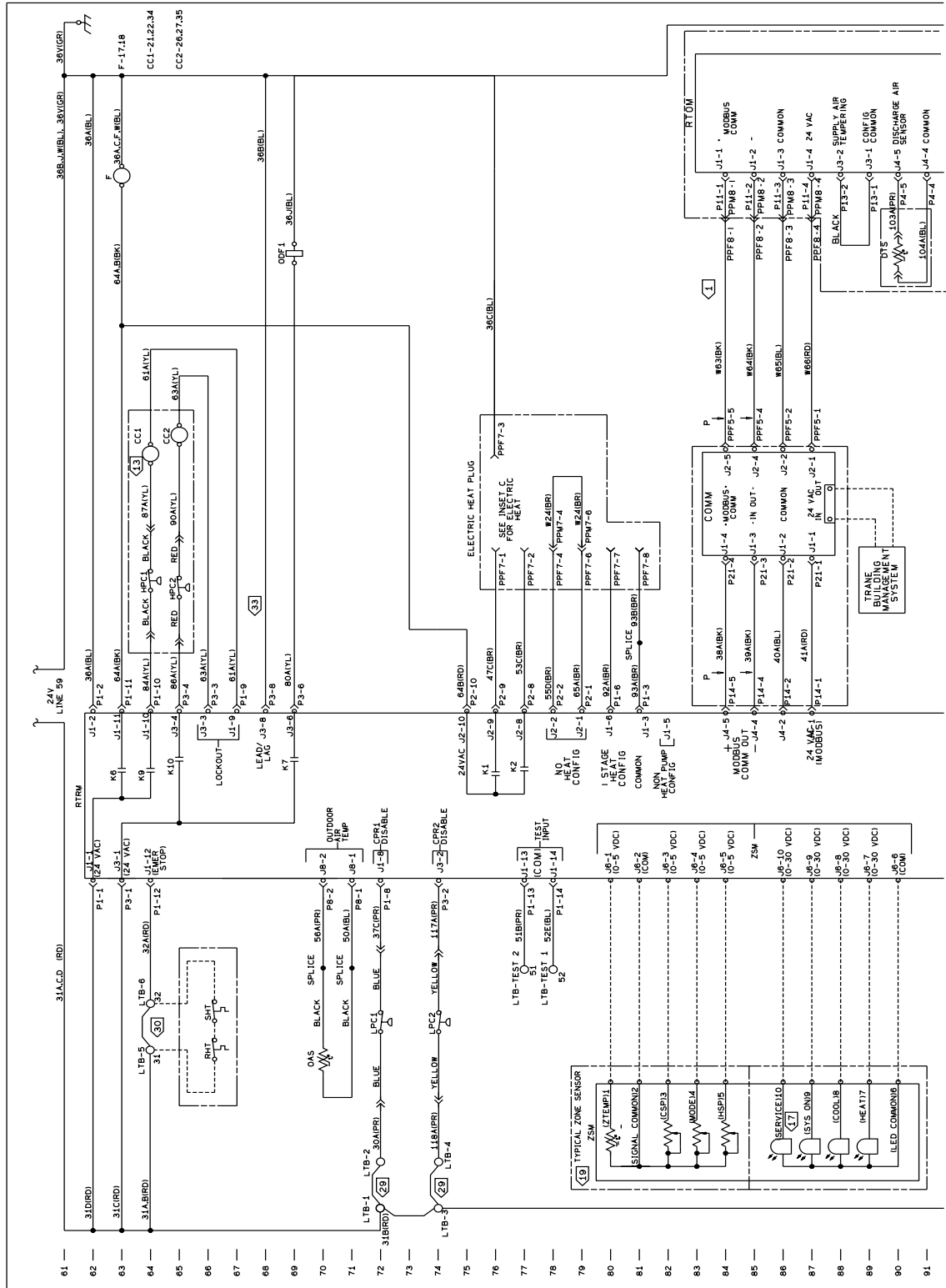
Typical wiring diagram. For specific wiring, see individual Service Facts.

2309-3122



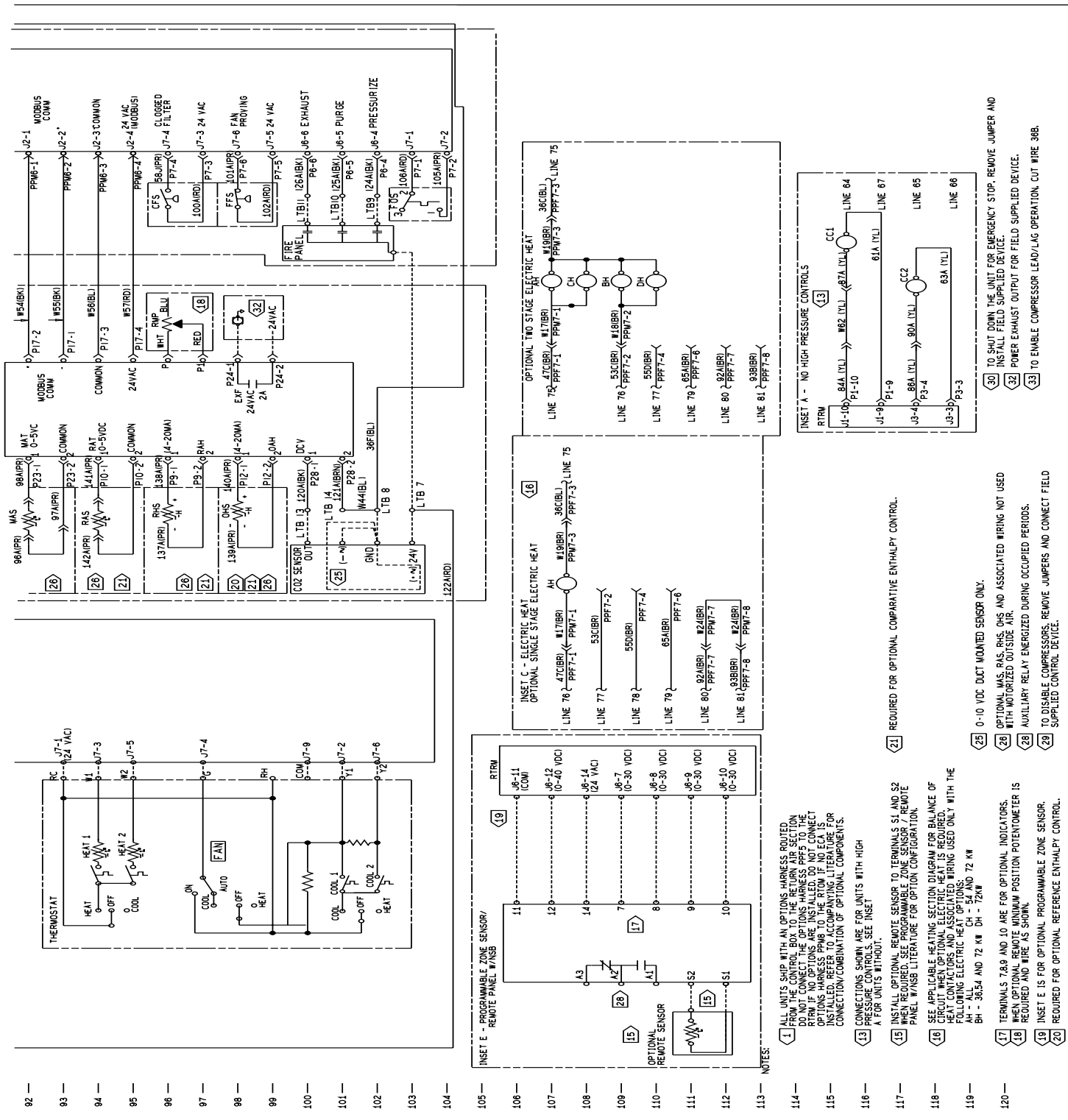
# Typical Wiring

(12½-25 Ton)



# Typical Wiring

## (12½-25 Ton)



- 20 TO SHUT DOWN THE UNIT FOR EMERGENCY STOP. REMOVE JUMPER AND INSTALL FIELD SUPPLIED DEVICE.
- 22 POWER EXHAUST OUTPUT FOR FIELD SUPPLIED DEVICE.
- 23 TO ENABLE COMPRESSOR LEAD/LAG OPERATION. CUT WIRE 36B.

- 21 REQUIRED FOR OPTIONAL COMPARATIVE ENTHALPHY CONTROL.
- 22 0-10 VDC DUCT MOUNTED SENSOR ONLY.
- 23 OPTIONAL HAS, RAS, RUS, PHS AND ASSOCIATED WIRING NOT USED WITH FACTORIZED OUTSIDE AIR.
- 24 AUXILIARY RELAY ENERGIZED DURING OCCUPIED PERIODS.
- 25 TO DISABLE COMPRESSORS, REMOVE JUMPERS AND CONNECT FIELD SUPPLIED CONTROL DEVICE.

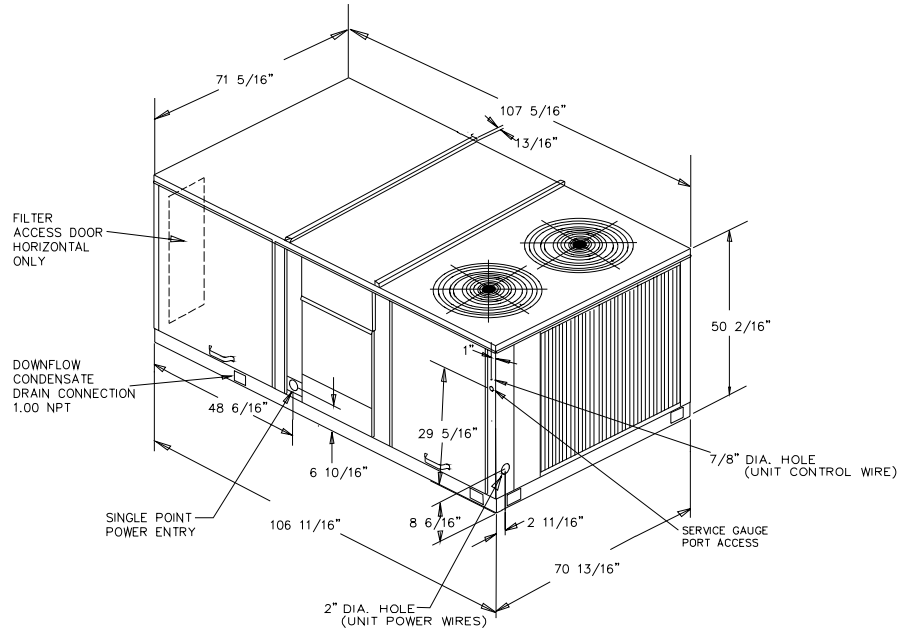
- 1 ALL UNITS SHIP WITH AN OPTIONS HARNESS ROUTED FROM THE CONTROL BOX TO THE RETURN AIR SECTION. DO NOT CONNECT THE OPTIONS HARNESS PFFS TO THE RETURN AIR SECTION. ONLY CONNECT THE PFFS TO THE OPTIONS HARNESS PFFS TO THE RETURN AIR SECTION. IF NO FIELD INSTALLED, REFER TO ACCOMPANYING LITERATURE FOR CONNECTION/COMBINATION OF OPTIONAL COMPONENTS.
- 2 CONNECTIONS SHOWN ARE FOR UNITS WITH HIGH PRESSURE CONTROLS. SEE INSET A FOR UNITS WITHOUT.
- 3 INSTALL OPTIONAL REMOTE SENSORS TO TERMINALS 51 AND 62 WHEN REQUIRED. SEE PROGRAMMABLE ZONE SENSOR REMOTE PANEL W/NSB LITERATURE FOR OPTION CONFIGURATION.
- 4 SEE APPLICABLE HEATING SECTION DIAGRAM FOR BALANCE OF HEAT CONTROLS AND ASSOCIATED WIRING USED ONLY WITH THE FOLLOWING ELECTRIC HEAT OPTIONS:  
AH - ALL CH - 54 AND 72 KW BH - 3654 AND 72 KW DH - 72 KW
- 5 TERMINALS 7.6, 9 AND 10 ARE FOR OPTIONAL INDICATORS. WHEN OPTIONAL REMOTE MINIMUM POSITION POTENTIOMETER IS REQUIRED AND WIRE AS SHOWN.
- 6 INSET E IS FOR OPTIONAL PROGRAMMABLE ZONE SENSOR.
- 7 REQUIRED FOR OPTIONAL REFERENCE ENTHALPHY CONTROL.



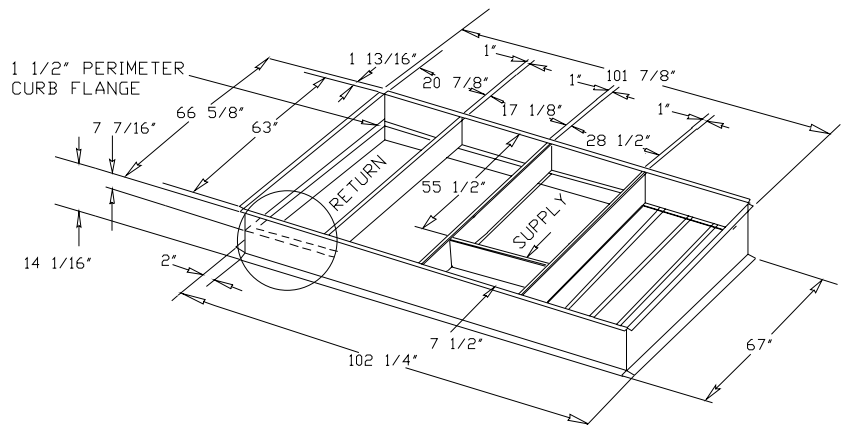
# Dimensional Data

## (12½ Ton) High Efficiency (12½, 15, 17½ Ton) Standard Efficiency

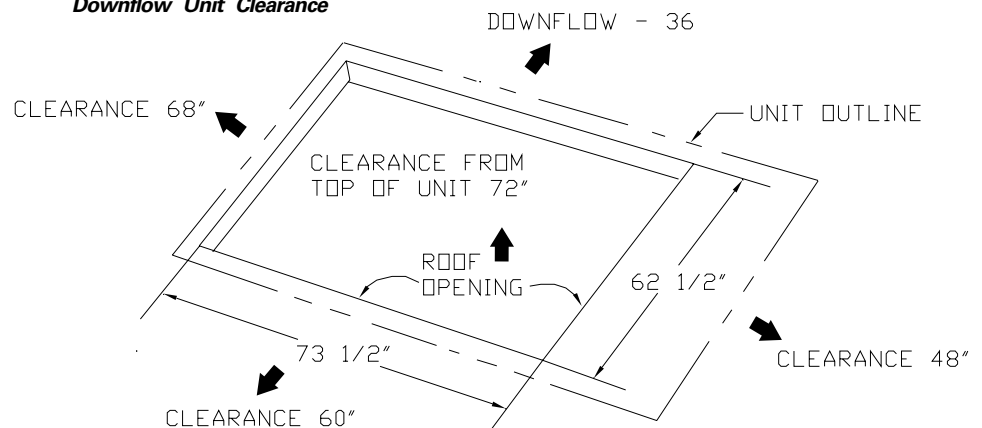
All dimensions are in inches.



**Note: Duct flanges mount 7-7/16" down inside the curb on the 1½" curb flanges. See recommended duct dimensions on the next page. Roofcurb is intended for downflow use only.**



### Downflow Unit Clearance

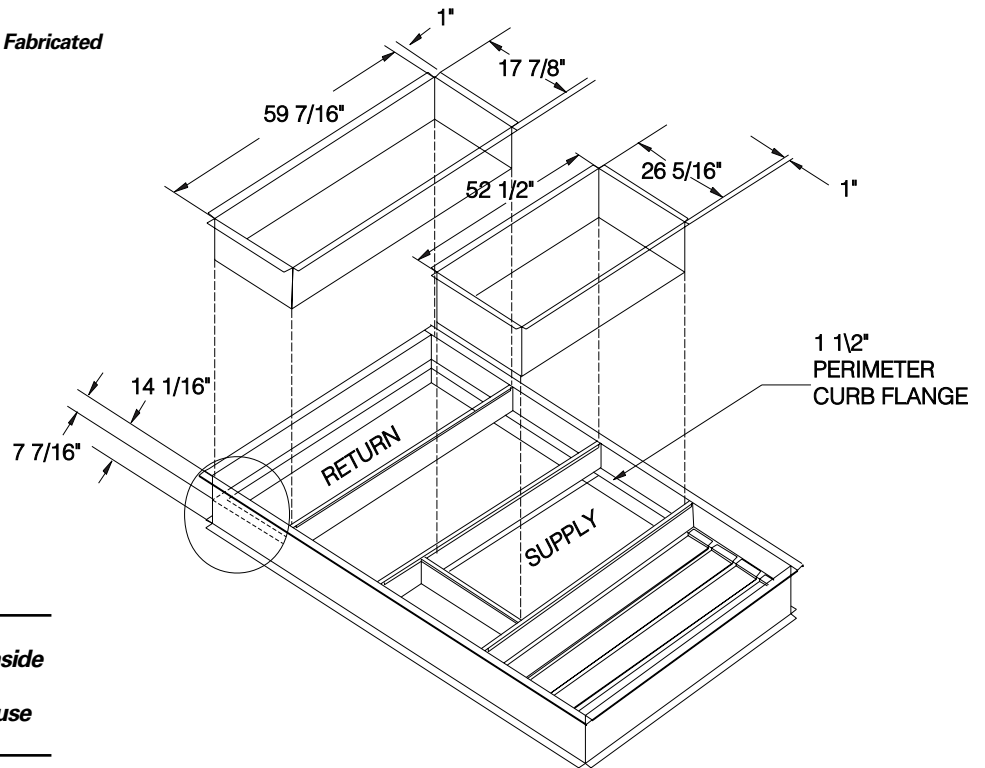


# Dimensional Data

**(12½ Ton) High Efficiency**  
**(12½, 15, 17½ Ton)**  
 Standard Efficiency

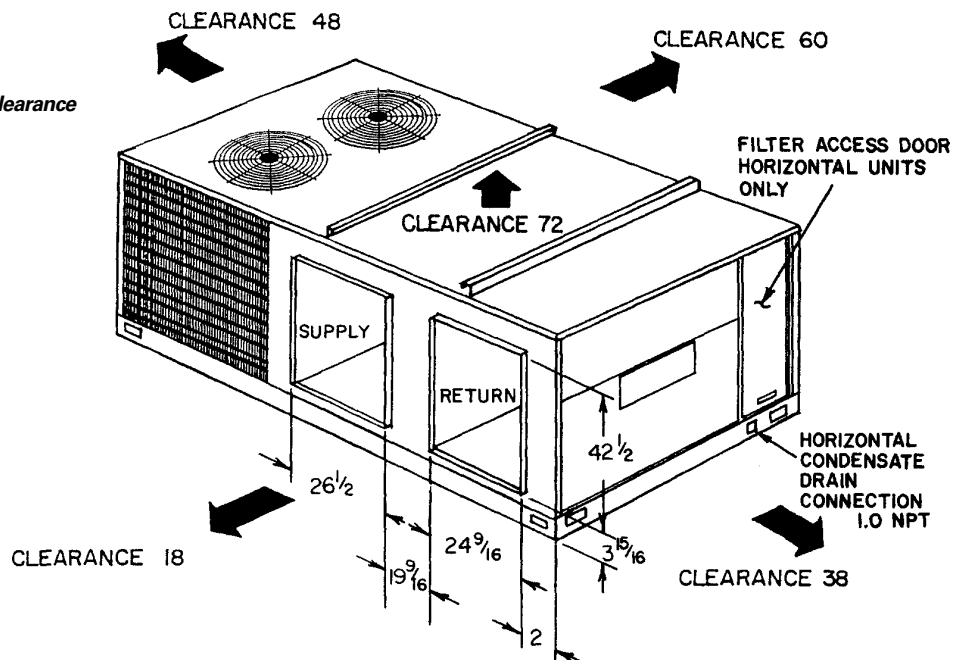
All dimensions are in inches.

**Downflow Duct Connections — Field Fabricated**



**Note:**  
 Duct flanges mount 7-7/16" down inside the curb on the 1½" curb flanges.  
 Roofcurb is intended for downflow use only.

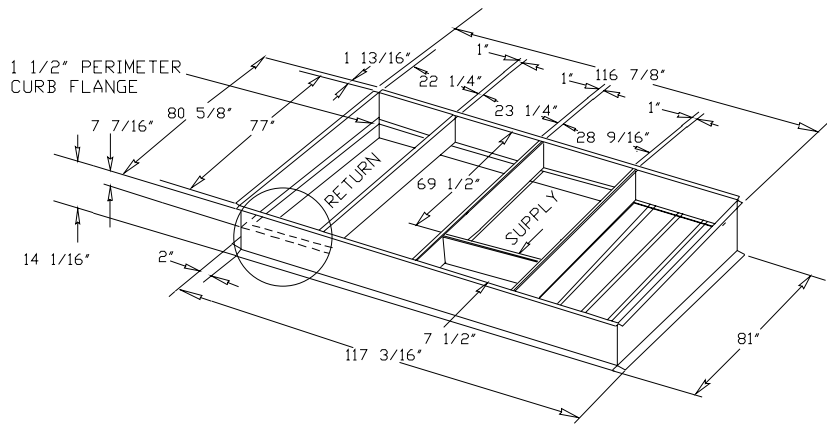
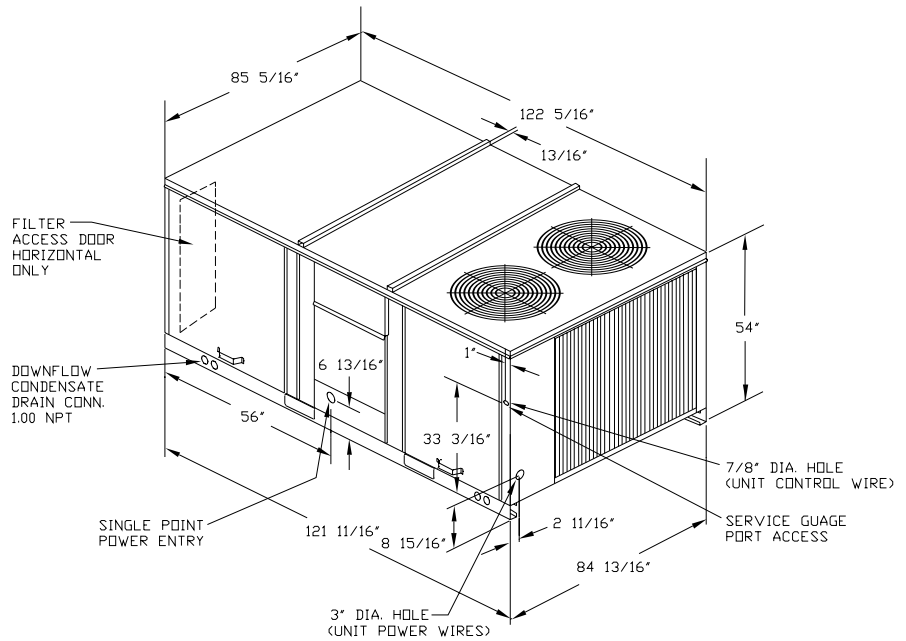
**Horizontal Unit Supply/Return and Unit Clearance**





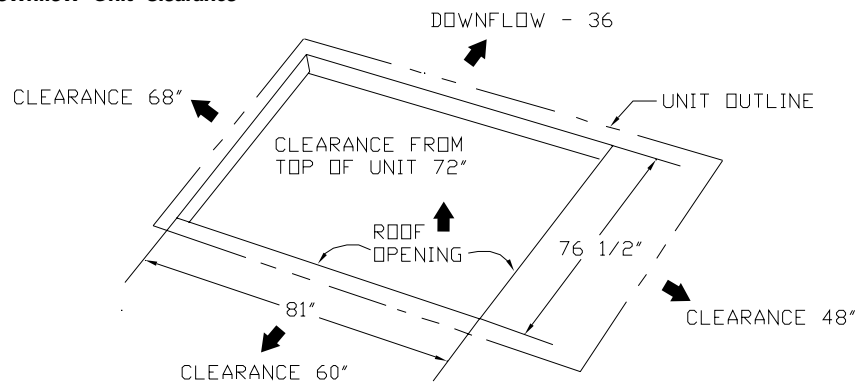
# Dimensional Data (15-25 Ton) High Efficiency (20, 25 Ton) Standard Efficiency

All dimensions are in inches.



**Note:**  
 Duct flanges mount 7-7/16" down inside the curb on the 1 1/2" curb flanges. See recommended duct dimensions on the next page.  
 Roofcurb is intended for downflow use only.

### Downflow Unit Clearance



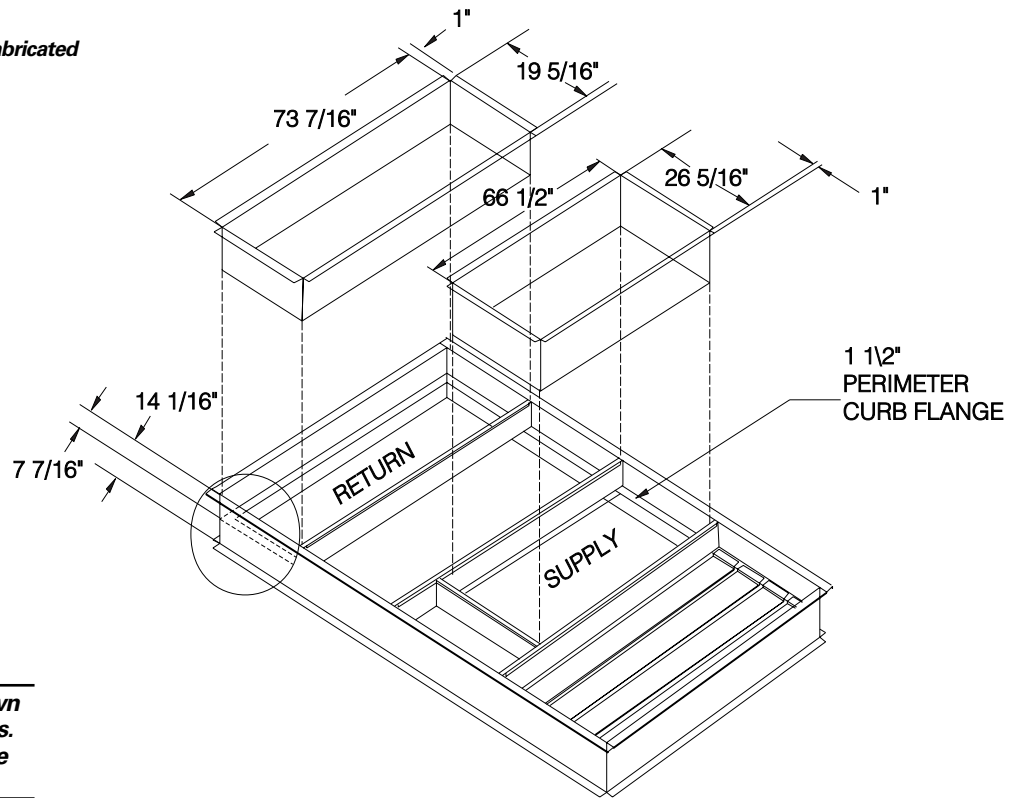


# Dimensional Data

(15-25 Ton) High Efficiency  
(20, 25 Ton) Standard Efficiency

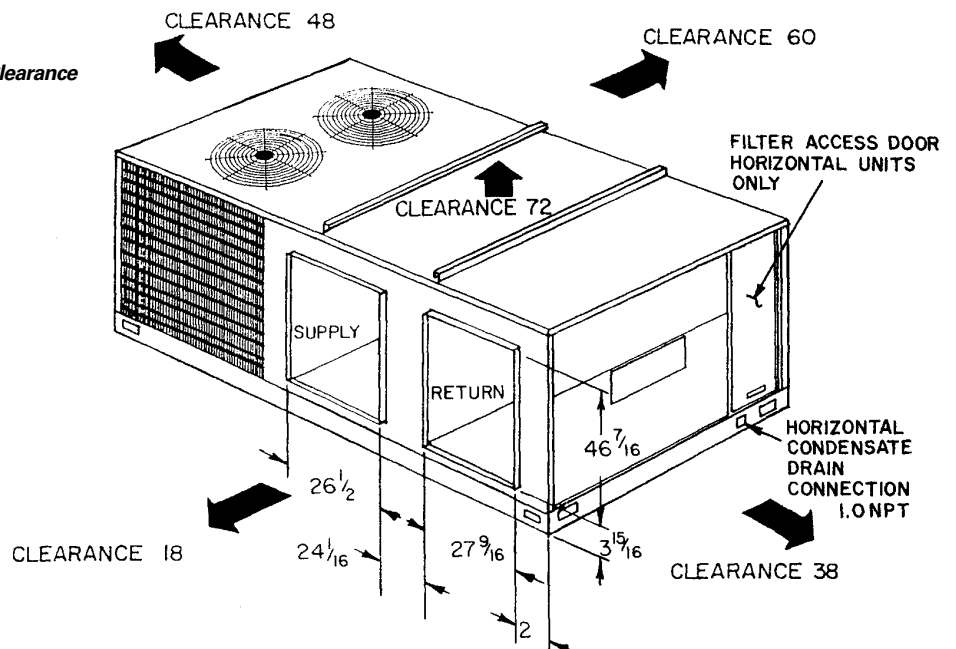
All dimensions are in inches.

*Downflow Duct Connections — Field Fabricated*



**Note:** Duct flanges mount 7-7/16" down inside the curb on the 1 1/2" curb flanges. Roofcurb is intended for downflow use only.

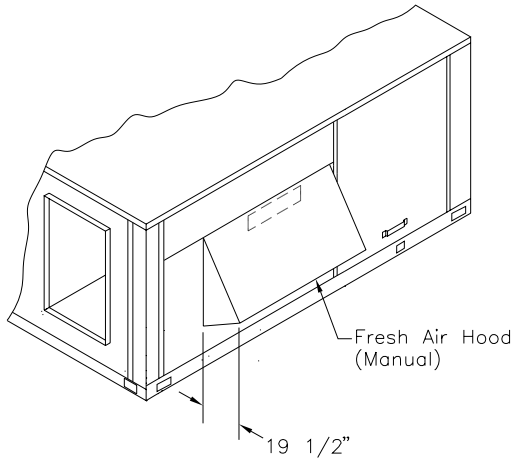
*Horizontal Unit Supply/Return and Unit Clearance*



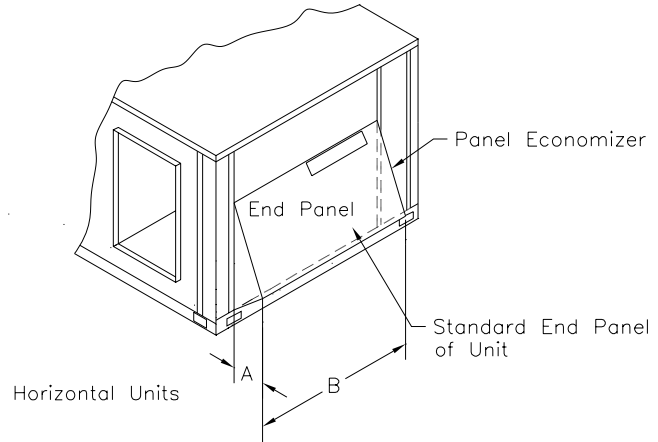
# Dimensional Data

# (12½-25 Ton) Accessories

All dimensions are in inches.

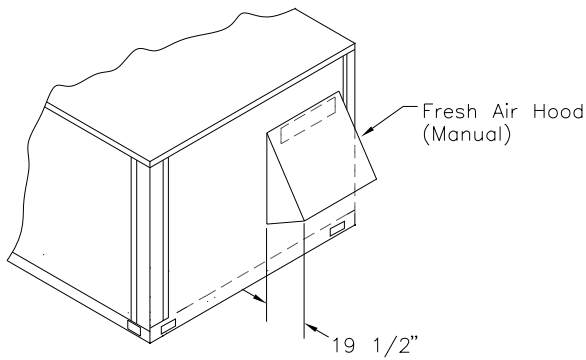


Horizontal Units

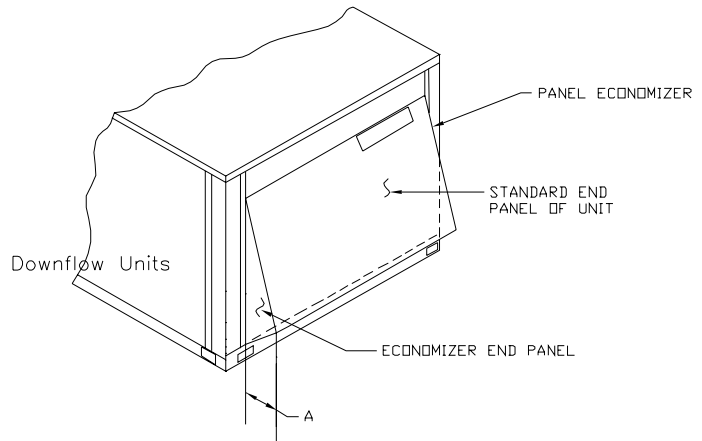


Horizontal Units

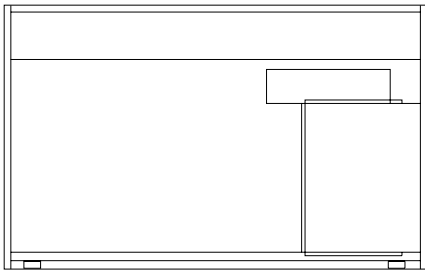
**Note:**  
When applying economizer to horizontal units, connecting ductwork must be run full size to allow proper operation of Economizer Damper.



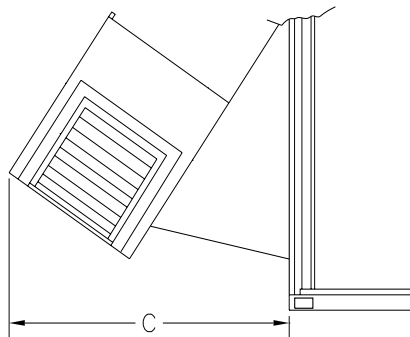
Downflow Units



Downflow Units



Power Exhaust with Downflow Economizers Only. End Panel View



Power Exhaust with Downflow Economizers Only, Side View

**Table DD-1**

Unit Model#	A	B <sup>1</sup>	C <sup>2</sup>
TC*150, 151-180, 210	17½	53¾	36
TC*181, 211-301	19½	64¾	39

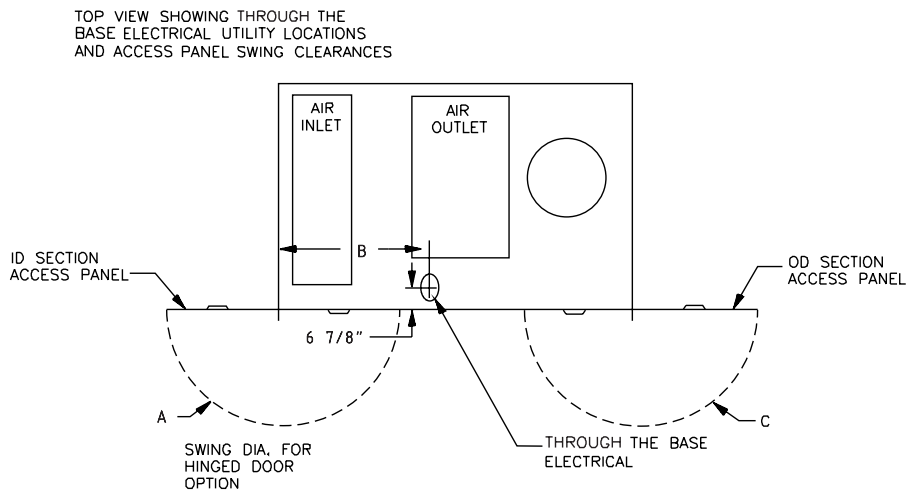
Notes:

1. Horizontal dimension only. Downflow economizer is width of end panel.
2. Power exhaust is applied on downflow economizer only.

# Dimensional Data

# Factory Installed Options (FIOPS)

All dimensions are in inches.

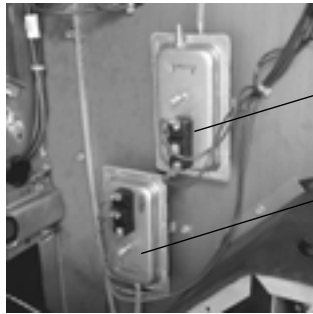


**Table DD-2**

Unit	A	B	C
Model#			
TCD150, 151, 180, 210	42 <sup>3</sup> / <sub>8</sub>	48 <sup>3</sup> / <sub>8</sub>	31
TCD181, 211-301	29 <sup>1</sup> / <sub>2</sub>	56	38 <sup>1</sup> / <sub>2</sub>

# Dimensional Data

# Factory Installed Options (FIOPS)



*Fan Failure Switch*

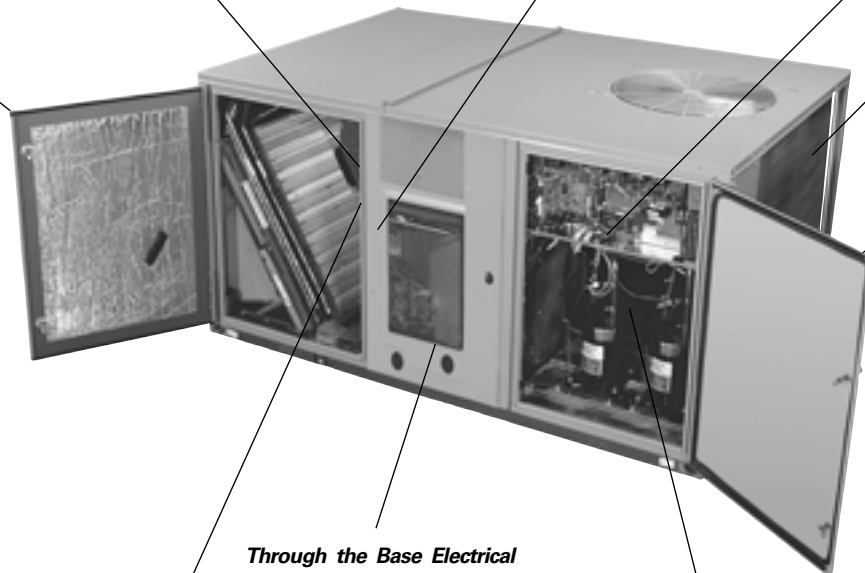
*Clogged Filter Switch*



*Disconnect Switch or Circuit Breaker*

*Powered or Unpowered Convenience Outlet*

*Hinged Access Door*



*Trane Communication Interface*

*Black Epoxy Coated Outdoor Coils*

*Hinged Access Door*

*Through the Base Electrical*

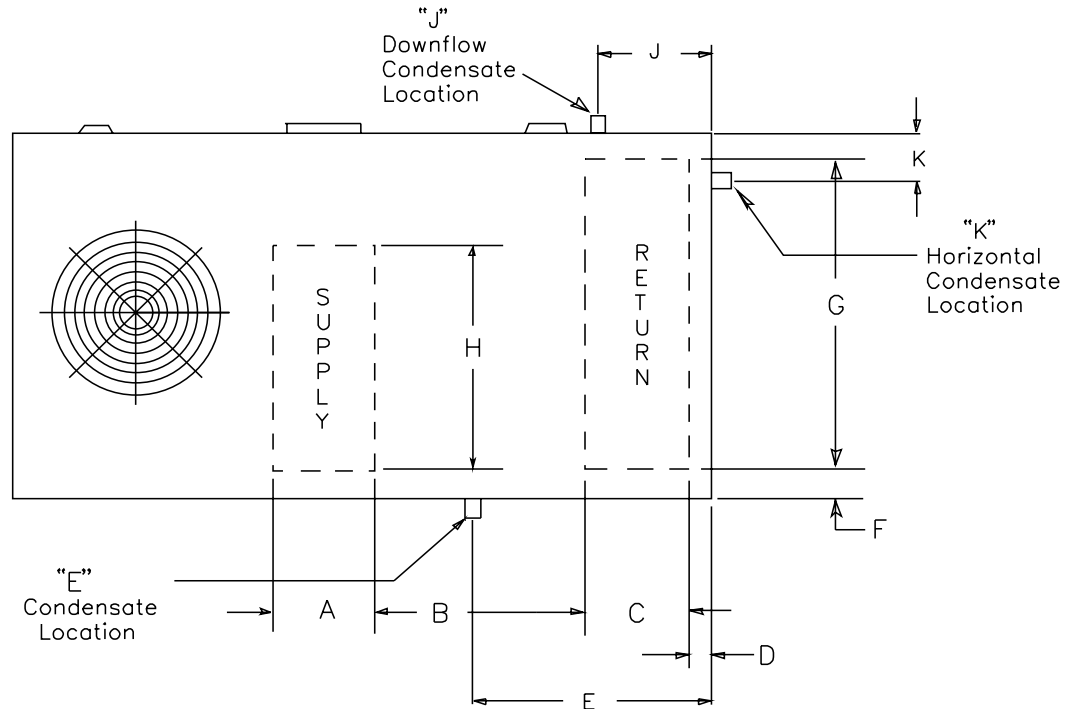
*High Pressure Cut Out*



*Supply and/or Return Smoke Detectors*

# Dimensional Data

## (12½-25 Ton)



**Table DD-3 – Standard Efficiency Units**

Tons	Downflow Only							Condensate Drain Size	Condensate Drain Location			
	A	B	C	D	F	G	H		Downflow		Horizontal	
									E	J	E	K
12½, 15, 17½	26 <sup>7</sup> / <sub>16</sub>	22 <sup>1</sup> / <sub>2</sub>	18 <sup>11</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	62 <sup>7</sup> / <sub>16</sub>	54 <sup>11</sup> / <sub>16</sub>	1 NPT	—	25 <sup>5</sup> / <sub>8</sub>	—	6
20, 25	26 <sup>7</sup> / <sub>16</sub>	28 <sup>3</sup> / <sub>4</sub>	19 <sup>15</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	76 <sup>5</sup> / <sub>16</sub>	68 <sup>11</sup> / <sub>16</sub>	1 NPT	—	26 <sup>3</sup> / <sub>4</sub>	—	5 <sup>3</sup> / <sub>8</sub>

**Table DD-4 – High Efficiency Units**

Tons	Downflow Only							Condensate Drain Size	Condensate Drain Location			
	A	B	C	D	F	G	H		Downflow		Horizontal	
									E	J	E	K
12½	26 <sup>7</sup> / <sub>16</sub>	22 <sup>1</sup> / <sub>2</sub>	18 <sup>11</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	62 <sup>7</sup> / <sub>16</sub>	54 <sup>11</sup> / <sub>16</sub>	1 NPT	—	25 <sup>5</sup> / <sub>8</sub>	—	6
15-25	26 <sup>7</sup> / <sub>16</sub>	28 <sup>3</sup> / <sub>4</sub>	19 <sup>15</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	76 <sup>5</sup> / <sub>16</sub>	68 <sup>11</sup> / <sub>16</sub>	1 NPT	—	26 <sup>3</sup> / <sub>4</sub>	—	5 <sup>3</sup> / <sub>8</sub>



# Weights (12½-25 Ton)

**Table W-1 — Accessory Net Weights (Lbs)<sup>1, 7</sup>**

Model No.	Economizer Net	Outside Air Damper		Power Exhaust <sup>4</sup>	Roof Curb <sup>4</sup>	Oversized Motor Adder	High <sup>5</sup> Static Drive	Low <sup>6</sup> Static Drive
		Manual	Motorized					
TCD150D, 180B								
TCD121,151C,TCD210C	65	32	60	95	205	5	2	2
TCD240B								
TCD181,211,241C	80	32	75	95	235	5	2	—
TCD300B,301C	80	32	75	95	235	N/A	N/A	2
TCH150D, 180B, 210C								
TCH121,151C	50	32	60	—	—	5	2	2
TCH240B								
TCH181,211,241C	65	32	75	—	—	5	2	—
TCH300B,301C	65	32	75	—	—	N/A	N/A	2

**Table W-1 Continued**

Unit Model No.	All Zone Sensors	Electric Heaters			
		6-23 KW 240/480V <sup>2, 3</sup>	27-36 KW 240/480V <sup>2, 3</sup>	54 KW 240/480V <sup>2, 3</sup>	72 KW 240/480V <sup>2, 3</sup>
TCD150D, 180B, 210C	1	28/21 <sup>6</sup>	31/27	38/32	—
TCD121,151,181C					
TCD240B	1	—	33/27	40/32	43/34
TCD211,241C					
TCD300B,301C	1	—	33/27	40/32	43/34
TCH150D, 180B, 210C	1	28/21 <sup>6</sup>	31/27	38/32	—
TCH121,151,181C					
TCH240B	1	—	33/27	40/32	43/34
TCH211, 241C					
TCH300B,301C	1	—	33/27	40/32	43/34

**Notes:**

1. Net weight should be added to unit weight when ordering factory installed accessories.
2. For 600V heaters net weights are same as 480V heaters.
3. To estimate shipping weight add 5 lbs to net weight.
4. Downflow only.
5. Not available on all models (See Fan Performance tables for specific models).
6. 9 - 23 KW Heaters not available for TC\*210C.
7. TC\*150-300 factory installed options for economizers, multiply net capacity x .99, EER x .97. For oversized motors, multiply net capacity x .98, EER x .93. This is provided in compliance with ARI certification program.

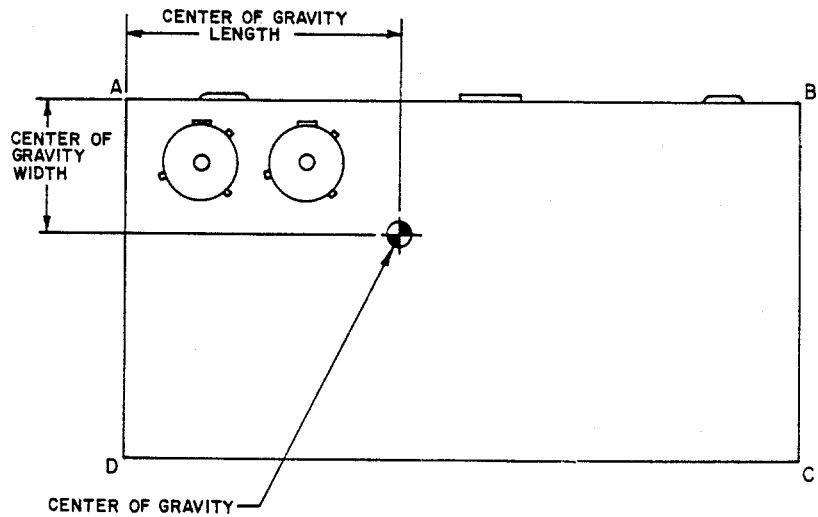
# Weights

**Table W-2 – Maximum Unit And Corner Weights (Lbs) And Center Of Gravity Dimensions (In.)**

Tons	Unit Model No.	Maximum Weights (Lbs)		Corner Weights (Lbs) <sup>1</sup>				Center of Gravity (In.)	
		Shipping <sup>2</sup>	Net	A	B	C	D	Length	Width
12½	TC*150D/TC*151C	1687/1820	1319/1452	446/485	339/360	230/259	303/348	46/45	29/30
15	TC*180B/TC*181C	1866/2361	1498/1902	547/643	358/477	234/333	359/447	42/52	28/35
17½	TC*210C/TC*211C	2022/2380	1654/1921	565/643	425/495	285/341	378/442	46/53	29/35
20	TC*240B/TC*241C	2372/2490	1913/2031	679/697	482/528	312/348	440/458	51/53	34/34
25	TC*300B/TC*301C	2365/2475	1906/2016	661/695	507/524	320/343	418/454	53/53	33/34

**Notes:**

1. Corner weights are given for information only. 12½-25 ton models must be supported continuously by a curb or equivalent frame support.
2. Weights are approximate. Horizontal and downflow unit and corner weights may vary slightly.



\*Indicates both downflow and horizontal units.

# Weights

**Table W-3 — Factory Installed Options (FIOPS) Net Weights (Lbs)<sup>1,2,3</sup>**

Accessory	Weight	Unit Model Number
High Efficiency Motors <sup>4</sup>	49	TC*150-181 standard size motor
	36	TC*210-241 standard size motor
		TC*150-181 oversize motor
	0	TC*210-241 oversize motor TC*300-301 standard size motor
Hinged Doors	27	All TC* units
Powered Convenience Outlet	38	All TC* units
Through the Base Electrical	23	All TC* units
Unit Mounted Circuit Breaker	5	All TC* units except those with 54&72 kW heaters & 208/230V
	10	All TC* units with 54&72 kW heaters & 208/230V
Unit Mounted Disconnect	5	All TC* units except those with 54&72 kW heaters & 208/230V
	10	All TC* units with 54&72 kW heaters & 208/230V
Smoke Detectors Supply/Return	5	All TC* units
Tool-less Hail Guard	38	TC*150,151,180,210
	43	TC*181,211,240,241,300,301
Novar 2024	7	All TC* units
Novar 3051	5	All TC* units

**Notes:**

1. Weights for FIOP accessories not listed are >5 lbs.
2. Net weight should be added to unit weight when ordering factory installed accessories.
3. See Table W-1 for standard factory installed economizer and oversized motors.
4. Standard factory installed motors are already included in unit net and shipping weights. Values shown for high efficiency motors are in addition to the standard motor weight.



# Mechanical Specifications

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## General

The units shall be dedicated downflow or horizontal airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for all units. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-22, and 100 percent run tested to check cooling operation, fan and blower rotation and control sequence, before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be UL listed and labeled, classified in accordance to UL 1995/CAN/CSA No. 236-M90 for Heat Pumps. Canadian units shall be CSA Certified.

## Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 500 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. In order to ensure a water and air tight seal, service panels shall have lifting handles and no more than three screws to remove. All exposed vertical panels and top covers in the indoor air section shall be insulated with a 1/2 inch, 1 pound density foil-faced, fire-resistant, permanent, odorless, glass fiber material. The base of the downflow unit shall be insulated with 1/2 inch, 1 pound density foil-faced, closed-cell material. The downflow unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8 inch high supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting.

## Unit Top

The top cover shall be one piece, or where seams exist, double hemmed and gasket sealed to prevent water leakage.

## Filters

Two inch standard filters shall be factory supplied on all units. Optional two inch pleated media filters shall be available.

## Compressors

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Internal overloads shall be provided with the scroll compressors. All models shall have crankcase heaters, low and high pressure controls as standard.

## Refrigerant Circuits

Each refrigerant circuit shall have independent fixed orifice or thermostatic expansion devices, service pressure ports, and refrigerant line filter driers factory installed as standard. An area shall be provided for replacement suction line driers.

## Evaporator and Condenser Coils

Internally finned, 3/8" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 200 psig and pressure tested to 450 psig. All dual compressor units shall have intermingled evaporator coils. Sloped condensate drain pans are standard. Patent-pending 1+1+1 condenser coil, permanently gapped for easy cleaning is available.

## Gas Heating Section

The heating section shall have a drum and tube heat exchanger design using

corrosion resistant steel components. A forced combustion blower shall supply premixed fuel to a single burner ignited by a pilotless hot surface ignition system. In order to provide reliable operation, a negative pressure gas valve shall be used that requires blower operation to initiate gas flow. On an initial call for heat, the combustion blower shall purge the heat exchanger 45 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat. Units shall be suitable for use with natural gas or propane (field installed kit) and shall also comply with California requirements for low NOx emissions. The 12 1/2-25 tons shall have two stage heating.

## Outdoor Fans

The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor(s) shall be permanently lubricated and shall have built-in thermal overload protection.

## Indoor Fan

Units above shall have belt driven, FC centrifugal fans with adjustable motor sheaves. Units with standard motors shall have an adjustable idler-arm assembly for quick-adjustment of fan belts and motor sheaves. All motors shall be thermally protected. Oversized motors shall be available for high static application. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).



# Mechanical Specifications

## Controls

Unit shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. ReliaTel controls shall be provided for all 24 volt control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized control shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

## Defrost Controls

Adaptive demand defrost shall be provided to permit defrost wherever coil icing conditions begin to significantly reduce unit capacity.

## Factory Installed Options

### Black Epoxy Coated Pre-Coated Coils

The black epoxy coils have a thermoset vinyl coating that is bonded to the aluminum fin stock prior to the fin-stamping process. The pre-coated coils are an economical option for protection in mildly corrosive environments.

### Dehumidification Option

The dehumidification (hot gas reheat) option shall provide increased dehumidification. The option shall consist of a hot-gas reheat coil located on the leaving air side of the evaporator coil pre-piped and circuited. Low pressure switch(es) and thermostatic expansion valve(s) TXV are standard. Froststat™, ReliaTel options module, and 2" pleated filters are required but not standard. They must be ordered and configured separately.

## Hinged Access Doors

Sheet metal hinges are available on the Filter/Evaporator Access Door and the Compressor/Control Access Door. This option is available on all downflow models.

## High Efficiency Motors

This option is available with efficiency ratings from 86.5 up to 91.0. It is not available for all models.

## High Pressure Cutout

This option is offered for units that do not have High Pressure cutout as standard.

## Powered or Unpowered Convenience Outlet

This option is a GFCI, 120v/15amp, 2 plug, convenience outlet, either powered or unpowered. When the convenience outlet is powered, a service receptacle disconnect will be available. The convenience outlet is powered from the line side of the disconnect or circuit breaker, and therefore will not be affected by the position of the disconnect or circuit breaker. This option can only be ordered when the Through the Base Electrical with either the Disconnect Switch, or Circuit Breaker, option is ordered. This option is available on all downflow models.

## Supply and/or Return Air Smoke Detector

With this option installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. Return Air Smoke Detectors require minimum allowable airflow when used with certain models. See the Installation, Operation, and Maintenance (IOM) manual for the models affected and the minimum allowable airflow required. This option is available on all downflow models.

## Through the Base Electrical with Circuit Breaker

This option is a thermal magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections. The circuit breaker will be installed in a water tight enclosure in the unit with access through a swinging door. Factory wiring will be provided from the switch to the unit high voltage terminal block. The circuit breaker will provide overcurrent protection, be sized per NEC and UL guidelines, and be agency recognized by UL/CSA. This option is available on all downflow models.

## Through the Base Electrical With Disconnect Switch

Three-pole, molded case, disconnect switch with provisions for through the base electrical connections are available. The disconnect switch will be installed in the unit in a water tight enclosure with access through a swinging door. Factory wiring will be provided from the switch to the unit high voltage terminal block. The switch will be UL/CSA agency recognized. **Note:** The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit overcurrent protection. This option is available on all downflow models.

## Through the Base Utilities Access

An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. Option will allow for field installation of liquid-tight conduit and an external field installed disconnect switch.

## Two-Inch Pleated Filters

Two inch pleated media filters shall be available on all models.

# Mechanical Specifications

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## Factory or Field Installed Options

### Clogged Filter/Fan Failure Switch

A dedicated differential pressure switch is available to achieve active fan failure indication and/or clogged filter indication. These indications will be registered with either a zone sensor with status indication lights or an Integrated Comfort™ System.

### Differential Pressure Switches

These options allow for individual fan failure and dirty filter indication. The fan failure switch will disable all unit functions and “flash” the Service LED on the zone sensor. The dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation.

### Discharge Air Sensing Kit

This kit provides true discharge air sensing in heating models. This sensor is a status indicator readable through Tracer™ or Tracker™. The kit is functional only with the ReliaTel Options Module.

### Economizer - Downflow

The assembly includes fully modulating 0-100 percent motor and dampers, barometric relief, minimum position setting, preset linkage, wiring harness with plug, fixed dry bulb and spring return actuator. The barometric relief damper shall be standard with the downflow economizer and shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment “off” cycle. Solid state enthalpy and differential enthalpy control shall be field-installed

### Electric Heaters

Electric heat modules shall be available for installation within the basic unit. Electric heater elements shall be constructed of heavy-duty nickel chromium elements internally delta connected for 240 volt, wye connected for 480 and 600 volt. Staging shall be achieved through ReliaTel. Each heater package shall have automatically reset high limit control operating through heating element contactors. All heaters shall be individually fused from the factory, where required, and shall meet all NEC and CEC requirements when properly installed. Power assemblies shall provide single-point connection. Electric heat modules shall be UL listed or CSA certified. If ordering the Through the Base Electrical option with an Electric Heater, the heater must be factory installed.

### Frostat

This option is to be utilized as a safety device. The Frostat opens when temperatures on the evaporator coil fall below 10°F. The temperature will need to rise to 50°F before closing. This option should be utilized in low airflow or high outside air applications.

### LonTalk® Communications Interface

The LonTalk communications interface, when installed in a Voyager unit, allows the unit to communicate as a Tracer™ LCI-V device or directly with generic LonTalk Network Building Automation System Controls.

### Oversized Motors

Oversized motors shall be available for high static applications.

### Reference or Comparative Enthalpy

Reference Enthalpy is used to measure and communicate outdoor humidity. The unit receives and uses this information to provide improved comfort cooling while using the economizer. Comparative Enthalpy measures and communicates humidity for both outdoor and return air conditions, and return air temperature. The unit receives and uses this information to maximize use of economizer cooling, and to provide maximum occupant comfort control. Reference or Comparative Enthalpy option shall be available when a factory or field installed Downflow Economizer is ordered. This option is available on all downflow models.

### Tool-less Hail Guards

Tool-less, hail protection quality coil guards are available for condenser coil protection.

### Trane Communication Interface

This factory or field-installed option shall be provided to interface ReliaTel™ controlled units with the Trane Integrated Comfort™ systems.

# Mechanical Specifications

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## Field Installed Options

### CO<sub>2</sub> Sensing

The CO<sub>2</sub> sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO<sub>2</sub> (Carbon Dioxide) in the air. As the CO<sub>2</sub> levels increase, the outside air damper modulates to meet the CO<sub>2</sub> space ventilation requirements.

### Digital Display Zone Sensor

The Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality of standard zone sensors. This sensor includes a digital display of set point adjustment and space temperature in F (Fahrenheit) or C (Celsius). Includes FAN and SYSTEM buttons (supports the service functions of the standard sensor). E-squared memory stores last programmed set points. Requires 24 VAC (Volts AC). This sensor should be utilized with ReliaTel™ controls.

### Dual Thermistor Remote Zone Sensor

This sensor will allow the customer to reduce the total number of remote sensors to obtain space temperature averaging. This sensor should be utilized with ReliaTel controls.

### High Static Drive

The high static drive option shall allow the standard motor on the 12½ and 20 ton units to operate with improved external static capabilities.

### Manual Outside Air Damper

The rain hood and screen shall provide up to 25 percent outside air.

### Motorized Outside Air Dampers

Manually set outdoor air dampers shall provide up to 50 percent outside air. Once set, outdoor air dampers shall open to set position when indoor fan starts. The damper shall close to the full closed position when indoor fan shuts down.

### Powered Exhaust

The powered exhaust shall provide exhaust of return air, when using an economizer, to maintain better building pressurization.

### Roof Curb - Downflow

The roof curb shall be designed to mate with the downflow unit and provide support and a water tight installation when installed properly. The roof curb design shall allow field-fabricated rectangular supply/return ductwork to be connected directly to the curb. Curb design shall comply with NRCA requirements. Curb shall be shipped knocked down for field assembly and shall include wood nailer strips.

### Economizer - Horizontal

The horizontal economizer shall contain the same features as the downflow economizer with the exception of barometric relief.

### Remote Potentiometer

The minimum position setting of the economizer shall be adjusted with this accessory.

### Ventilation Override Accessory

With the Ventilation Override Accessory installed, the unit can be set to transition up to 3 different pre-programmed sequences for Smoke Purge, Pressurization, and Exhaust. The transition occurs when a binary input on the RTOM is closed (shorted). This would typically be a hard wired relay output from a smoke detector or fire control panel.

### Zone Sensors

This option shall be provided to interface with the Micro equipped Voyagers and shall be available in either manual, automatic, programmable with night setback, with system malfunction lights or remote sensor options.









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