AUDR-B

Air-Cooled Condensing Units
with Reciprocating Compressors
24 to 224 Tons

Features

- DIRECTOR microcomputer controller
- Windows® based PC interface
- ETL/CSA, MEA unit approval
- New high efficiency design
- Compatible with HFC refrigerants
- Reduced overall length
- Rated with HCFC-22
- Quiet operation

ETL LISTED

DUNHAM-BUSH®

Form No. 6008

INTRODUCTION

Direct Drive Fans

PC Windows® Based Microcomputer Standard All Models

Modular Design with common components throughout the line

Optional Fin Guard (top and bottom)

Optional Unit Disconnect Not Shown

Semi-Hermetic Reciprocating Compressors

Optional Electronic Expansion Valves for Remote Evaporators

The Dunham-Bush Commitment...

Our commitment to continuous product improvement and quality enhancement continues in this new generation of Air Cooled Reciprocating Condensing Units...The **AUDR-B**.

New enhanced condenser fins, plus modular construction provide for increased commonality of parts, high unit electrical efficiency, and compact footprint throughout the line. We can build a unit for you in a shorter lead time, while still offering all the optional features mounted, piped and wired to meet your exact needs. In fact, Dunham-Bush is famous for its design flexibility. Our customers find that we can handle special applications where others might turn away.

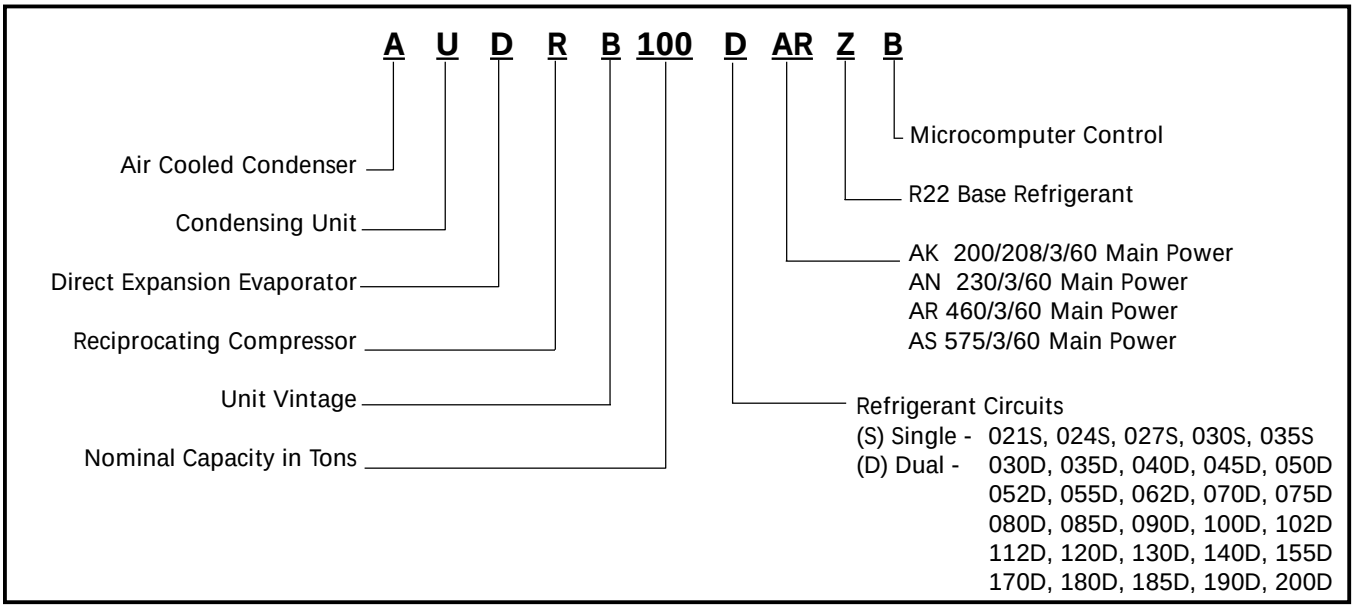
AUDR-B units feature state-of-the-art full function, PC Windows® based, microcomputer controller standard on all model sizes with an optional tie-in to a building management system. Remote monitoring via optional modem allows instant diagnosis by the user or by a skilled Dunham-Bush technician.

Upon shipment, the new **AUDR-B** unit is installation-ready with its compact size, reduced weight, and complete factory piping and wiring.

The **AUDR-B**
Delivering on the promise of the Dunham-Bush Commitment

TABLE OF CONTENTS

NOMENCLATURE



STANDARD FEATURES

Size Range

- 30 Models from 24 to 224 Tons
- High Unit EER at ARI Standard Conditions
- Rated with HCFC-22. Compatible with HFC's (R-407C and R-134a) using Synthetic Oil (Consult Factory)

Compressor

- Reliable Semi-Hermetic Reciprocating Type at 1750 RPM
- (2) Independent Refrigerant Circuits over 30 Tons for Redundancy
- Unloading Compressor under 85 Tons for Energy Savings
- Compressor Cycling of 4 compressors over 85 Tons for Maximum Efficiency
- Optional capacity control steps available over 45 tons

Evaporator Control Modes of Operation

- **Optional Split-System Chiller—Remote Cooler Module**
  - RCH1—Standard Cooler Module for 44°F Leaving Water Temperature
  - RCH2—Oversized Cooler Module for 42°F Leaving Water Temperature when required
  - RCH3—Oversized Cooler Module for 40°F Leaving Water Temperature when required
  - ASME/CRN Stamped on all Sizes
  - DB High Efficiency Inner Fin Design for Compactness and Weight Reduction
  - Minimum of 250 PSIG Refrigerant Side Design Pressure
  - 200 PSIG Water Side Design Pressure

- **Optional DX Air Handler Control Modes of Operation**
  - RAH1—DX Air handler with Return Air Control, Constant Volume Control Systems with less than 30% Outside Air
  - RAH2—DX Air handler with Leaving Air Control, for Constant or Variable Air Volume Systems with less than 30% Outside Air
  - RAH3—DX Air Handler with Fresh Air Economizer with Leaving Air Control, for Constant or Variable Volume Systems with up to 100% Outside Air
  - RAH4—DX Air handler with 100% Outside Air with Leaving Air Control for Constant or Variable Air Volume Systems with Hot Gas Bypass required and ECCS required when available
  - RMAH—DX Multiple Air handlers with Suction Pressure Control Requires Customer Contact Closure(s) Call for Cooling

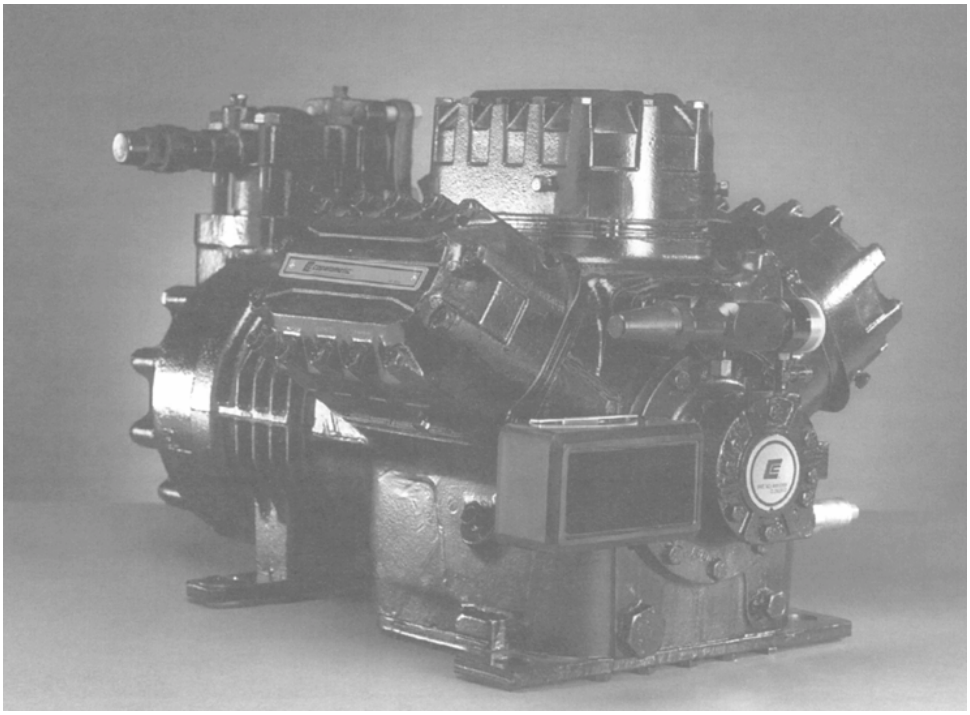
Condenser

- Long Life Copper Tubes with Aluminum Fins
- Integral Sub-Cooling Circuit for Maximum Efficiency
- 450 PSIG Test Pressure
- Low Noise 30" Diameter Fans - Direct Drive at 1140 RPM
- All Fan Motors Open Drip Proof with Rain Shield for Safety and Low Maintenance
- Minimum Clearance Required on Sizes 021S to 035S

Electrical/Control

- Widest range of optional equipment available
- Proactive Full Function PC Windows® Based Microcomputer Controller on all Sizes for Precise Control and Maximum Efficiency
- Separate Power and Control Panels for Service on Dual Circuit Units Models 030D-200D
- Separate Power and Control Compartments on Single Circuit Units Models 021S to 035S
- ETL/CSA Unit Approval (IEC Control Panel Available)
- MEA Unit Approval

UNIT FEATURES: COMPRESSORS



Recent advances in materials technology have been incorporated into these compressors to allow the most efficient package chillers and condensing units available today. All compressors are semi-hermetic so that a minor part replacement job doesn't become a compressor replacement job. The number of compressors on a specific package may be found in the physical specifications on pages 64 thru 75.

Rugged - designed for heavy duty refrigeration and air conditioning use, these compressors feature housing, heads and end bells of high strength cast iron. Oversize crankcases to assure proper lubrication and cooling for running gear are incorporated into the housing.

Lightly stressed bearing surfaces are made possible by the use of smaller diameter pistons and larger bearing surfaces.

Radiographic X-ray quality, permanent mold cast aluminum connecting rods have a high strength to weight ratio and superior bearing qualities.

A large capacity built-in suction filter is located between the suction service valve and the motor to prevent abrasive material such as flux, dirt, scale or metal chips from entering the motor cavity. The abrasive action of this foreign material would crack, chip and wear away the motor insulation which could cause premature motor failure. These same abrasives could also cause bearing seizures and excessive wear of all surfaces.

Discharge and suction valves are also provided for ease of service.

A lubrication system is an integral part of all these compressors. Positive pump lubrication systems are used on the compressors. Increased oil flow in addition to increased lubrication assists in dissipating heat generated by the higher bearing loads. The pump is located in the end bell and is driven by the crankshaft. Oil is picked up through a strainer in the crankcase and discharged under pressure through drilled passageways in the main bearings.

Quiet - Enlarged areas in the muffler type cylinder heads provide a chamber to reduce the velocity of the mixing discharge gases from each discharge stroke. This dampens discharge line pulsations by smoothing out flow velocities.

Vibration-free - Discharge line mufflers, solid mounted compressors, statically and dynamically balanced crankshafts and motors insure vibration-free, quiet running compressors.

Dependable - Years of experience have developed heavy-duty motor windings, incorporating cooling by full refrigerant flow through the motor. Insulation systems exceed Class B requirements and overload protection is accomplished by a solid state motor module with winding temperature thermistor input.

All compressors also feature individual suction and discharge, manually operated, service valves, oil sight glasses and cartridge type crankcase heaters.

Capacity Control - Modulation of capacity in response to system load requirements is affected by a microcomputer sequence controller which monitors the return or leaving air temperature for DX Air Handlers or leaving water temperature on split-system chiller applications.

Compressors are controlled via cylinder unloading and optional hot gas bypass. Cylinder unloading is achieved by shutting off the suction gas supply to one or more cylinder banks resulting in good partload efficiencies. Hot gas bypass operates by imposing an artificial load on the evaporator. Discharge gas from the compressor is introduced to the liquid-vapor mixture of refrigerant downstream of the expansion valve. The discharge gas is cooled by the liquid refrigerant present in the turbulence of the evaporator so that the final temperature of refrigerant gas leaving the evaporator does not rise. Hot gas bypass does not offer any energy savings, but does allow the cooling capacity of the equipment to vary precisely with the load requirements.

On multiple compressor units, capacity is controlled by a combination of cylinder unloading and compressor staging. See the following table for the type of capacity control furnished as standard with each unit.

All compressors are UL recognized and C.S.A. approved for 60 Hz.

TABLE 6 **Package Capacity Control Steps**

Model AUDR-B	% Full Load Capacity Control	
	Standard (and Optional HGBP)	Option Capacity Control Steps (and Optional HGBP)
021S	100 - 50 - (25) - OFF	
024S	100 - 50 - (25) - OFF	
027S	100 - 67 - 33 - (17) - OFF	
030S	100 - 67 - 33 - (17) - OFF	
035S	100 - 67 - 33 - (17) - OFF	
030D	100 - 75 - 50 - 25 - (13) - OFF	
035D	100 - 75 - 50 - 25 - (13) - OFF	
040D	100 - 75 - 50 - 25 - (13) - OFF	
045D	100 - 80 - 42 - 21 - (12) - OFF	100 - 80 - 59 - 42 - 21 - (12) - OFF
050D	100 - 82 - 47 - 23 - (12) - OFF	100 - 82 - 59 - 47 - 23 - (12) - OFF
052D	100 - 83 - 50 - 33 - (17) - OFF	100 - 83 - 67 - 50 - 33 - 17 - (9) - OFF
055D	100 - 82 - 54 - 36 - (18) - OFF	100 - 82 - 64 - 54 - 36 - 18 - (9) - OFF
062D	100 - 83 - 50 - 33 - (17) - OFF	100 - 83 - 67 - 50 - 33 - 17 - (9) - OFF
070D	100 - 83 - 50 - 33 - (17) - OFF	100 - 83 - 67 - 50 - 33 - 17 - (9) - OFF
075D	100 - 85 - 46 - 31 - (16) - OFF	100 - 85 - 69 - 46 - 31 - 15 - (8) - OFF
080D	100 - 75 - 50 - 25 - (13) - OFF	100 - 88 - 75 - 50 - 38 - 25 - (13) - OFF
085D	100 - 77 - 50 - 27 - (14) - OFF	100 - 89 - 77 - 64 - 50 - 37 - 27 - (14) - OFF
090D	100 - 78 - 50 - 28 - (14) - OFF	100 - 90 - 78 - 69 - 50 - 40 - 28 - 19 - (10) - OFF
100D	100 - 77 - 50 - 27 - (15) - OFF	100 - 91 - 77 - 68 - 50 - 41 - 27 - 18 - (9) - OFF
102D	100 - 75 - 50 - 25 - (13) - OFF	100 - 92 - 75 - 67 - 50 - 42 - 25 - 17 - (9) - OFF
112D	100 - 77 - 50 - 27 - (14) - OFF	100 - 91 - 77 - 68 - 50 - 41 - 27 - 18 - (9) - OFF
120D	100 - 75 - 50 - 25 - (13) - OFF	100 - 92 - 75 - 67 - 50 - 42 - 25 - 17 - (9) - OFF
130D	100 - 76 - 50 - 26 - (13) - OFF	100 - 91 - 76 - 68 - 50 - 41 - 26 - 18 - (9) - OFF
140D	100 - 75 - 50 - 25 - (13) - OFF	100 - 92 - 75 - 67 - 50 - 42 - 25 - 17 - (9) - OFF
155D	100 - 73 - 50 - 23 - (12) - OFF	100 - 92 - 73 - 65 - 50 - 42 - 23 - (12) - OFF
170D	100 - 75 - 50 - 25 - (13) - OFF	100 - 88 - 75 - 63 - 50 - 38 - 25 - (13) - OFF
180D	100 - 73 - 50 - 23 - (12) - OFF	100 - 89 - 73 - 62 - 50 - 39 - 23 - (12) - OFF
185D	100 - 73 - 50 - 23 - (12) - OFF	100 - 89 - 73 - 62 - 50 - 39 - 23 - (12) - OFF
190D	100 - 75 - 50 - 25 - (13) - OFF	100 - 88 - 75 - 63 - 50 - 38 - 25 - (13) - OFF
200D	100 - 75 - 50 - 25 - (13) - OFF	100 - 88 - 75 - 63 - 50 - 38 - 25 - (13) - OFF

NOTES: 1 - Sizes 021S - 080D have cylinder unloading on lead compressor only **(Extra steps shaded)**
2 - Sizes 085D - 200D have compressor staging standard
3 - Sizes 045D - 200D cylinder unloading for optional extra unloading steps of capacity control
This ECCS option is not available on AUDR-B 052D - 075D if "ACM" option is ordered (page 12)
4 - HGBP = Hot Gas Bypass available on lead compressor only, all units
5 - HGBP modulates to approximately one half of the preceding unloaded step
EXAMPLE: AUDR-B 070 w/HGBP (33% x .5 = 17% minimum capacity)
EXAMPLE: AUDR-B 070 w/optional steps and optional HGBP (17% x .5 = 9% minimum capacity)

UNIT FEATURES: AIR COOLED CONDENSERS

All units have direct drive propeller fans and motors with individual fan sections providing superior head pressure control. Close blade tip clearance with the fan venturi assure smooth, quiet operation. See the electrical data for information on motor specifications.

All air cooled condensers are formed of 3/8 inch diameter copper tubes mechanically expanded into aluminum fins for maximum efficiency of heat transfer between the circulating refrigerant and air. The fins have full self-spacing collars which completely cover each tube. The staggered tube design improves the thermal efficiency of the coil and eliminates bypassing of air around the tubes. The return bends, headers and nipples are all copper, sized for minimum pressure drop, brazed with inert gas in the tubes and tested after fabrication to 450 psig.

A separate subcooling circuit is standard on all units to maximize energy efficiency.

Partitions separate each fan section to eliminate possible back spin. Two different fans cover the entire line and fan cycling control is supplied as standard. This lowers the minimum ambient temperature at which the packaged equipment will effectively start and operate. For lower ambient requirements than standard, variable speed options are available.

All cabinetry is heavy gauge galvanized steel construction with aluminum tube sheets. The Unit Control Center, end enclosure panels, and fan decking shall be constructed of 16 gauge galvanized steel and be finished with a baked powder high grade outdoor quality coating system which exceeds 500 hour salt spray requirements when tested in accordance with the ASTM-B-117 specifications.

UNIT FEATURES: OPTIONAL REMOTE DX COOLER MODULE FOR SPLIT-SYSTEM CHILLERS

Water Coolers

The water coolers employ the most advanced vessel technology available today, including the patented Inner-Fin construction of the CH and EX coolers. All vessels 5 inches in diameter are U.L. listed. Larger vessels are designed and constructed to meet the requirements of the ASME Code, Section VIII, Division 1 for unfired pressure vessels and are stamped accordingly.

The CH model coolers have 1/2 inch diameter copper tubes brazed into tubesheets. The shells are constructed of steel and the entire assembly is welded and brazed for the best cost effectiveness possible. The EX coolers incorporate 5/8 inch rolled tubes and removable heads for ease of tube maintenance. Vent and drain connections are included on all vessels.

See Table 7 below for appropriate pressure ratings, Table 43 for connection sizes, pressure drop curves and minimum/maximum flow rates.

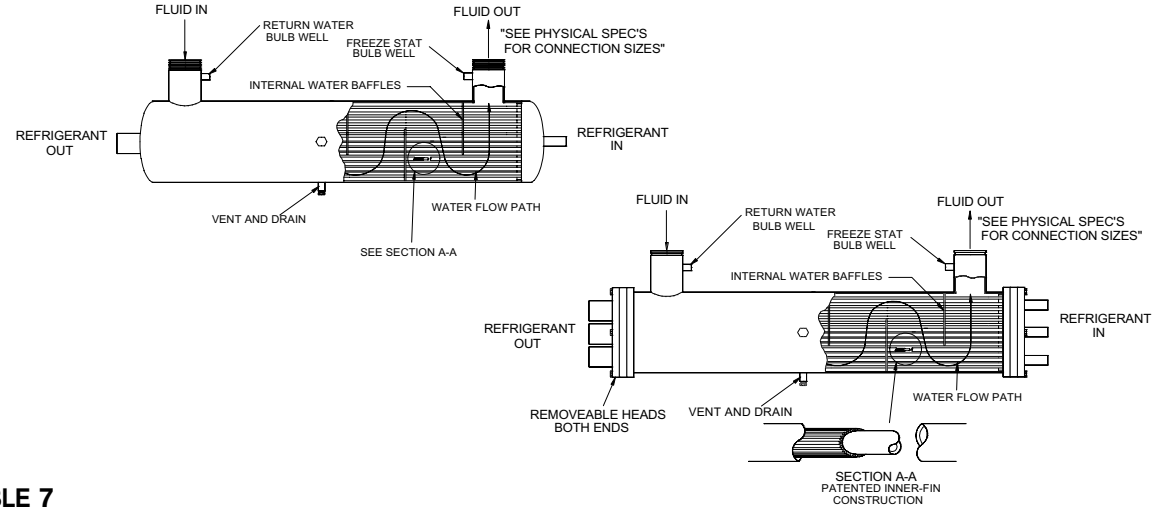
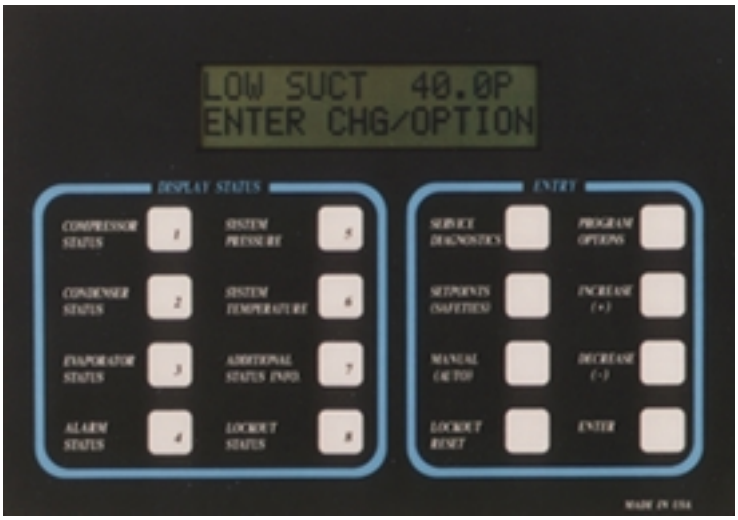


TABLE 7

Shell & Tube Heat Exchanger	Water Side		Refrigerant Side	
	Design Pressure (PSIG) (kPa)	Test Pressure (PSIG) (kPa)	Design Pressure (PSIG) (kPa)	Test Pressure (PSIG) (kPa)
Water Cooler				
CH	200 (1379)	300 (2068)	300 (2068)	375 (2586)
EX	200 (1379)	300 (2068)	250 (1724)	312 (2151)

WINDOWS® BASED MICROCOMPUTER CONTROLLER



DIRECTOR

Full Function Windows® Based Microcomputer Controller

Complimenting our high-energy efficient product is a Full Function Microcomputer Controller designed to keep your system running at its most Energy Efficient Level, based on current load.

This system is designed as a Control 'State' (control status) microcomputer providing the user with the current Control State for exact knowledge of what the microcomputer is doing. Some of the main features of the controller are as follows:

- A large character LCD display that can be seen in bright or dim lighting.
- A 16 function keypad that is so user friendly it rarely requires a manual.
- A four-layer printed circuit board provides extremely high quality and unit control stability.
- A battery backed up Real Time Clock that should never need attention.
- An automatic power monitoring system that is designed to protect your system.
- Multiple authorization levels to provide complete security of the control system.
- Automatic history storage that provides data to a flexible static and dynamic graphing system.
- Extended temperature range to allow operation in either hot or cold climates, from -40°F (-40°C) to 140°F (60°C).
- A PC control programming download/pullback in only 45 seconds.
- Alarm information is provided in simple English for the previous 32 alarms, with data shown down to the second.
- The system provides 'last time' enabled & disabled, number cycles, and total run hours.
- A slope algorithm control function with all analogs read 10 times per second provides unparalleled stability.
- A 'fuzzy logic control zone' based on leaving fluid temperature that reduces compressor cycling, and improves unit part load efficiency.
- A proactive compressor protection logic for protecting against low or high discharge pressure to minimize compressor cycling and nuisance trips.
- A Windows® based display providing all pertinent information on your 'PC'.
- A high speed RS232 port operating at 19,200 baud for connection to a local PC up to 100 feet away or a modem at 14,400 baud rate communications for remote communication.
- A high speed RS485 port for connection to a building management system, or PC at 38,400 baud rate communications up to 6000 feet away from the chiller(s).

Display Information

All information is displayed using common terms that are easy to understand. It is a simple procedure to determine the actual status of the system and the individual circuits, as they are displayed in common terms that are meaningful. The 2 line by 16 extra large character alphanumeric liquid crystal display (LCD) utilizes easy to understand menu-driven software. The LCD displays eight character alphanumeric sensor names and twelve character alphanumeric set point names enabling the use of meaningful status names. This enables an inexperienced operator to quickly work through these menus to obtain the information they require or to modify control parameters. The well designed keypad is separated into a *DISPLAY STATUS* section and an *ENTRY* section each consisting of eight keys that are clearly labeled to identify the information that will be displayed. When data is being modified, the second display line contains help information to ensure that the desired modification is properly made. Easily accessible measurements include:

- Current capacity status
- Current circuit/compressor status
- Entering and leaving chilled water temperature on optional remote cooler module
- Evaporator pressure of each refrigerant circuit
- Condenser pressure of each refrigerant circuit
- Compressor elapsed run time, each compressor
- Number of compressor starts
- Compressor contactor status with actual Amp draw
- Fan on/off status
- (Remote chilled water reset input optional for remote cooler module)
- (Optional air or water flow switch status)
- External start/stop command status
- (Optional low ambient temperature sensor for easier cold ambient starting)
- (Optional low ambient lockout)

Two proactive control features included in the microcomputer are low suction and high discharge pressure unload. Compressor #1 will be unloaded if circuit #1 discharge pressure exceeds the high pressure unload setpoint or if suction pressure from either refrigerant circuit approaches the low-pressure trip setpoint. If there is more than one compressor on a refrigerant circuit, one of the compressors will be shut down under one of these “near-fault” conditions.

Capacity Control

Control is based upon entering or leaving air temperature when used with DX air handler or leaving chilled water temperature for split-system chillers. How fast the temperature is changing and the rate of change are calculated and capacity decisions are based upon the rate, the current temperature, and the control temperature zone. Capacity is never added if the system is moving toward the temperature target at an acceptable rate. The unit will monitor all control functions and load the compressors to the required operating capacity. Remote adjustment of the entering or leaving air temperature or leaving chilled water temperature setpoint is accomplished through either direct connection or a remote keypad to the microcomputer through the RS485 long distance differential communications port, via PC or a modem connected to the RS232 communication port, or from an external Building Automation System supplying a simple 0 to 5 VDC signal.

System Control

The unit may be started or stopped manually, or through the use of an external signal from a Building Automation System. In addition, the microcomputer may be programmed with a seven-day optional cycle or other DB control packages may start and stop the system through interconnecting wiring.

System Protection

The following system protection controls will automatically act to insure system reliability:

- Low suction pressure
- High discharge pressure
- High motor temperature/over current
- Freeze protection (optional Remote Cooler Module)
- Compressor run error
- Low oil pressure
- Power loss
- (Optional remote cooler module chilled water flow loss)
- Sensor error
- (Pump down frequency alarm with no chiller flow)
- Anti-recycle
- Time delay

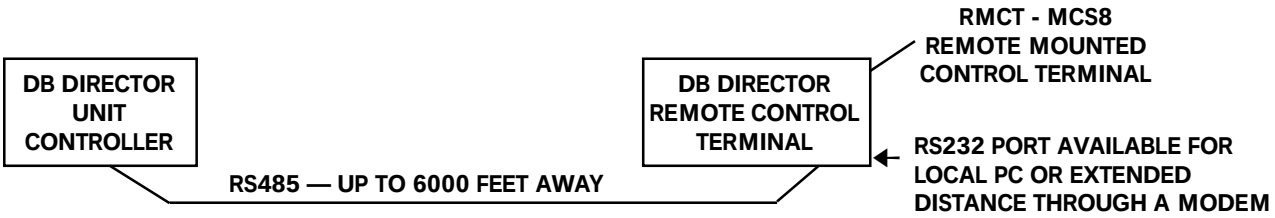
Remote Monitoring

The Microcomputer is equipped with a high speed RS232 communications port and two high speed RS485 communications ports, to allow for a variety of different remote monitoring operations. The RS232 communications port allows for remote communications at distances of up to 100 feet over a 4-wire shielded cable. The RS485 communication system allows for remote communications at up to 6000 feet with a 2-wire shielded cable connection.

1) RMCT - Remote Mounted Control Terminal (Figure 10A)

This Remote Mounted Control Terminal (RMCT) is a stand alone Control Terminal to communicate and control the unit from a remote location up to 6000 feet away, via the 485 communications port, when wired with a 2-wire shielded cable. This enhanced version of the Remote Mounted Control Terminal with 8 relay outputs and 8 sensor inputs provides remote alarm capabilities and additional sensor inputs as may be required.

Figure 10A

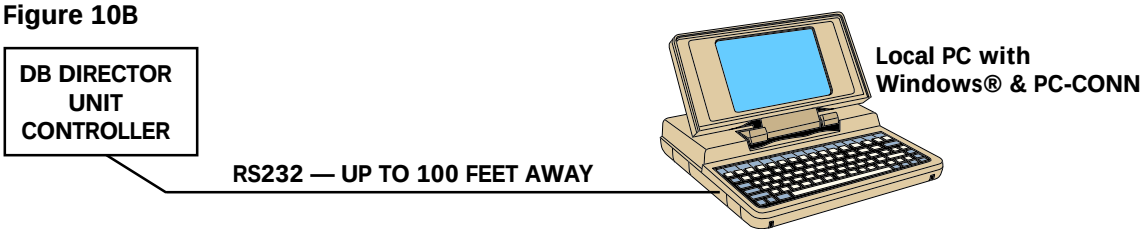


2) PCON - PC Connection:

The PC Connection function provides communications for complete operation of the packaged chiller including graphing information. This option is available through two communications techniques as follows:

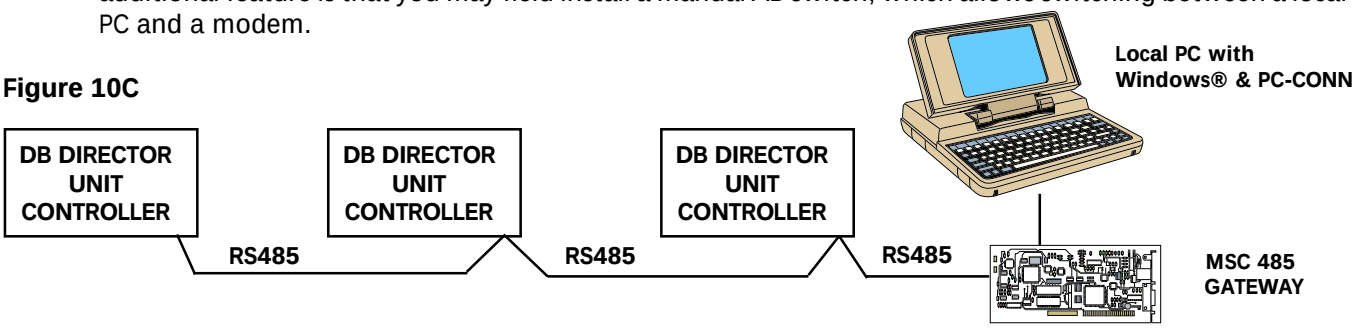
a) PCCB (Basic) (Figure 10B)
The standard communications for PCCB is via the RS232 connection which may be as far as 100 feet away from the packaged chiller.

Figure 10B



b) PCCE (Enhanced) (Figure 10C)
The enhanced PCCE system allows for communications via the RS485 port and can be located as far as 6000 feet from the packaged chiller(s). This option requires the addition of a gateway to convert the RS485 port back to a RS232 port and then may be connected to a modem or directly to a PC. One additional feature is that you may field install a manual AB switch, which allows switching between a local PC and a modem.

Figure 10C



As can be seen, the microcomputer system allows for a variety of remote connection capabilities for almost infinite flexibility. Utilizing the PC connection portion of the system, the unit will support up to twenty packaged chillers connected via the RS485/RS232 ports into the system. The user may then select whichever packaged chiller to review.

OPTIONS

***Options** are installed at the factory. **Accessories** are shipped unmounted.*

Copper Fin Condenser (CUF) - Copper fin and tube condenser.

Poly fin Condenser (PFC) - The material is a polyester paint baked onto the aluminum finstock prior to final manufacture, rather than material applied to the assembly after formation of the coils. The pre-painted fin material has been tested for salt spray corrosion resistance using ASTM B117 specification.

AUDR-B EVAPORATOR CONTROL MODES OF OPERATION (Select only one out of the eight AUDR-B Control Modes of Operation shown below)

"Split-System Chiller" Application Options:

(Select only one out of three "RCH" Modes shown below)

The ratings in the Catalog Performance Tables for Split-System Chillers require specific "RCH" Cooler Modules listed below:

1. **RCH1 - Standard Cooler Module** - for 44°F (6.5°C) leaving water temperature.
2. **RCH2 - Oversized Cooler Module** - for 42°F (5.5°C) leaving water temperature. This is required for water applications on Models AUDRB035S, 090D and 112D only.
3. **RCH3 - Oversized Cooler Module** - for 40°F (4.5°C) leaving water temperature. This is required for water applications on all AUDR-B models except AUDRB021S, 024S, 185D and 200D.

"DX Air Handler" Application Options:

(Select only one out of the five DX Air Handler Control Modes shown below)

4. **RAH1 - DX Air Handler with Return Air Constant Volume Control**, and less than 30% outside air. Typical control range is 72°F to 80°F with specific points where stages turn On / Off. This mode is for normal comfort cooling only.
5. **RAH2 - DX Air Handler with Constant or Variable Air Volume Contro**l, with Leaving Air Temperature Sensing, with a dead-band inter-stage delay. A relatively large starting dead-band is required with typical leaving air temperature 15°F higher than set point before starting the first stage. Fresh air must be less than 30%, or use RAH3 option.

   Extra steps of capacity control (ECCS) are recommended for variable air volume systems.

   If HGBP is required, it must be ordered for each circuit. Interlaced evaporator coil circuiting is required.

   Stacked Coils must have interlaced coil circuitry **for each coil-in-face**. The entire coil face area must be activated on the first step of cooling to eliminate by-pass air operation.
6. **RAH3** - **DX Air Handler with Fresh Air Economizer**, Leaving Air Temperature Sensing for Constant or Variable Air Volume Controlled Systems. The outside air quantity can be up to 100% depending on the customer control of the economizer. Entering Air Enthalpy will be used to disable the unit below a set-point enthalpy, typically (25.0h).

   Extra steps of capacity control (ECCS) are recommended for variable air volume systems.

   If HGBP is required, it must be ordered for each circuit. Interlaced evaporator coil circuiting is required. Stacked coils must have interlaced circuitry **for each coil-in-face**. The entire coil face area must be activated on the first step of cooling to eliminate by pass air operation.
7. **RAH4 - DX Air Handler for 100% Outside Air Control** for Constant or Variable Air Volume Controlled Systems. Control is based on leaving air temperature sensing. Entering outside air enthalpy will be used to disable the unit below a setpoint enthalpy (25.0h). **This option must have HGBP on all circuits, wired with the liquid line solenoids, and ECCS option** for extra steps of capacity control. Re-heating the air may be necessary after over cooling for humidity control purposes.

   Interlaced evaporator coil circuiting is required. Stacked coils must have interlaced circuitry **for each coil-in-face**. The entire coil face area must be activated on the first step of cooling to eliminate by-pass operation.
8. **RMAH - Multiple Evaporators with Suction Pressure Control**, controlled by customer supplied, contact closures to enable/disable each refrigerant circuit. When enabled, the first compressor on the circuit will start and stay on until disabled by the customer. The unloader or unloaders and the second compressor per circuit will be staged based on **Suction Pressure Control**.

   If HGBP is required, it must be ordered for each circuit.

OPTIONS (CONT.)

Control Circuit Transformer (TSF) - appropriate KVA rating to power the 115/1/60 control circuit and compressor oil heaters off the service voltage.

Convenience Outlet (CON) - dual 3-prong ground fault receptacle powered from a dedicated transformer and fused for 15 amps.

Hot Gas Bypass (HGB1) - is for circuit #1 only to minimize compressor cycling when the "load" is less than the unit minimum mechanical capacity.

Hot Gas Bypass (HGB2) - is for units ordered with (**ALL**) automatic circuit-to-circuit lead-lag, and includes HGBP on both refrigerant circuits.

Low Ambient Control (LAC) TO 0°F (-17.8°C) Minimum Ambient - units use variable speed fans in conjunction with standard fan cycling.

Extra Low Ambient Control (ELAC) TO -20°F (-29°C) Minimum Ambient - includes LAC and EEV (Electronic Expansion Valve(s) options for DX Air Handler operation and requires the use of 50% glycol and at least 50% load to ensure extra low ambient starting, with a maximum of 5 MPH (8 KPH) wind for Split-System Chiller application.

Low Ambient Lock-out (LALO) - uses an ambient sensor and requires a lock-out set point entered into the microcomputer controller.

Unit Mounted Disconnect Switch (Non-fused) (UMD1)

- for 200 and 230 volt single/dual power source units

AUDR-B 021S thru AUDR-B 090D - single power source

AUDR-B 100D thru AUDR-B 200D - dual power source

- mounted in the control box with mechanical interlock through the door.

Unit Mounted Disconnect Switch (Non-Fused) (UMD2)

- for 460 and 575 volt single point power source units
- mounted in the control box with mechanical interlock through the door, all models AUDR-B 021S-200D.

Unit Mounted Disconnect Switch (Non-Fused) (UMD3)

- for 200 & 230 volt "single point power source" units
- mounted in the control box with mechanical interlock through the door and circuit breakers mounted and wired. For units larger than AUDR-B 120D "single point power source" refer to accessories, (FMD5) field mounted disconnect switch.

Operating and Safety Lights (OSL) - lights indicating control power to the unit and faults for high discharge pressure, low evaporator pressure, low oil pressure and high motor temperature and alarm status.

Oil Pressure Reading Through The Microcomputer (OPM) - a low pressure transducer provides sensing for the microcomputer readout.

Gauges (GAG2) - includes suction, discharge and oil pressure for all unit models. The microcomputer displays discharge and suction pressure so these readings are redundant. If OPM option is ordered, it may eliminate the need for gauges.

Louvers (Painted Galvanized Steel) (LUV) - for complete unit enclosure for general mechanical security and unit aesthetics.

Grill (Aluminum Painted) (GRL) - similar to the louver option except manufactured of aluminum with 3/8" X 3 1/2" slots instead of louvers for security and hail protection and unit aesthetics. Same unit enclosure as louvers, but much lighter weight and easy to handle.

Fin Guard Top (FGT) (1" x 4" Coated Wire) - protects the vertical condenser side coil only.

Fin Guard Bottom (FGB) (1" x 4" Coated Wire) - encloses the bottom compressor, condenser and cooler section of the unit only. Use FGT and FGB for full unit protection. This is the least expensive unit enclosure.

Under Voltage and Phase Protection Relay (UVR1) - protects against low incoming voltage conditions as well as single phasing and phase reversal by opening the control circuit. It is an automatic reset device, but the microcomputer can be set up for manual reset to prevent unwanted restarts.

Over and Under Voltage and Phase Protection Relay (UVR2) - protects against high and low incoming voltage conditions as well as single phasing, phase reversal and phase imbalance by opening the control circuit. It is an automatic reset device, but the microcomputer can be set up for manual reset to prevent unwanted restarts.

Circuit Breakers (CB) - provide additional short circuit protection for each compressor.

Part Wind Starting (PWS1 OR PWS2) - this feature provides reduced current draw at start-up.

OPTIONS (CONT.)

Single Point Power Source (SPPS) - for 200/230/3/60 and 200/3/50 units

- AUDR-B 100 to 120D - supplied with one main terminal block
- AUDR-B 130 to 200D - supplied with two main terminal blocks
- Circuit breakers are supplied mounted and wired for branch circuit protection, all models AUDR-B 100 to 200D

Electrical Panel Door Latch Solenoids (DLS) - to provide the security required by local codes. Main power must be disconnected to gain entry to power or control electrical panel for models AUDR-B 021S-035S. On all other models the control panel can be accessed with a keylock override actuated switch. The power must be disconnected to gain entry to the high voltage power panel.

Weather Proof Alarm Bell (BEL2) - Factory mounted and wired to indicate a common alarm fault.

Unit Ground Fault Detector (GFD) - that takes the unit off line if a ground fault is detected.

500 Hour Salt Spray Coating (PNT) - special high-grade outdoor quality coating system tested to maintain integrity under the ASTM-B-117 specification.

Electronic Expansion Valves (EEV) - for more precise control over a wide range of operating conditions such as dual mode air conditioning and thermal storage applications. The EEV option is supplied as part of the (ELAC) extra low ambient operation down to -20°F minimum ambient operation.

Remote Monitoring Modem (MOD1) - for single condensing unit long distance communication, allows the system to be monitored, retrieve logs, and assist with investigating potential problems quickly and in a cost effective manner from a remote source.

Remote Monitoring Modem (MOD2) - for multiple condensing unit network long distance communication with the same features as MOD1, with the addition of a gateway to convert the RS485 ports for network operation.

Chiller*LINK* (CHLK) - for communication with (BMS) building management systems through BacNet or Modbus. See Chiller*LINK* Data Acquisition Form SD202-22203.

Chilled Water Pump Control (CWPC) for remote cooler module option - provides a contact closure for pump starting prior to starting the chiller.

Extra Capacity Control Steps (ECCS) - for models AUDR-B 045D and larger which require extra unloaders on one or more compressors to provide lower minimum unit capacity and intermediate capacity steps as physical equipment allows. ECCS option is not available on AUDR-B 052D to AUDR-B 080D if ACM (Auxiliary Control Module) option is ordered.

Auxiliary Control Module (ACM) - this "ACM" module consists of ALL, UDL, LLC, HPL, and LPL options that will require an extra unloader and possibility of an extra computer board on some unit models. ECCS option is not available on AUDR-B 052D to AUDR-B 080D if ACM option is ordered.

- ALL - Auto Lead-Lag is circuit to circuit lead lag, and causes special capacity control steps on units with dissimilar compressors. The two compressor models all have an unloader on circuit number one so an extra unloader is required on circuit number two. The four compressor models with optional extra capacity control steps also require an unloader on circuit two, to provide equal equipment for auto lead-lag.

- UDL - Utility Demand Limiting - requires a remote analog input signal that is used to unload or disallow compressors to limit electrical demand. The demand limiting can be one or more stages based on the particular unit configuration. Small units with only two steps of capacity control can only be unloaded one step. The required signal is 0 to 5 VDC.

- LLC - Load Limiting Control - requires compressor unloading or multiple compressors per circuit. The decision to limit loading is based on compressor current. This current limiting method of Load Limiting, is superior because it protects the compressor from over current while allowing the unit to run fully loaded when possible.

- HPL - High Pressure Limiting - requires unloading or multiple compressors per circuit. The signal to limit loading is discharge pressure approaching high pressure shut-down limit, factory set.

- LPL - Low Pressure Limiting - requires unloading or multiple compressors per circuit. The purpose of low pressure limiting is to keep the unit from shutting down on nuisance trips. Early morning start-up situations with close coupled equipment that may not have enough load to get a normal start. The micro will unload the machine and use a time delay to attempt starting.

OPTIONS (CONT.)

Optional plastic coated wire finguard. Available for upper half of unit (FGT) as shown on page 2, lower half of unit (FGB), or both.

Optional full length painted aluminum grilles (GRL) to protect condenser fins and mechanical components. This option also includes sheet metal enclosure panels for the unit ends.

Optional full length painted steel louvers (LUV) for the maximum protection for condenser fins and mechanical components. This option also includes sheet metal enclosure panels for the unit ends.

Optional weatherproof alarm bell (BEL2) to indicate a common alarm fault.

ACCESSORIES (SHIPPED LOOSE FOR FIELD MOUNTNG) .....

Water Flow Switch (WFS) - paddle type field adjustable flow switch available for remote cooler option. Usually tied into the unit safety circuit so that the package will remain off until water flow is proved. Helps prevent cooler freeze up. NEMA 3R enclosure, for use on water or ethylene glycol circuits.

Spring Isolators (SPG) - designed for 1" deflection, these housed spring assemblies have a neoprene friction pad on the bottom to help prevent the passage of noise and a spring locking leveling bolt at the top. Neoprene inserts prevent contact between the steel upper and lower housings. Suitable for more critical applications than RIS isolators.

Rubber-in-shear Isolators (RIS) - designed for ease of installation, these rubber, one piece, molded isolators have skid resistant baseplates. Applicable for most installations.

Weather Proof Bell (BEL1) - is a shipped-loose bell to be mounted remote of the unit and wired to the ALC common alarm contacts in the unit by others.

PC Connection Basic (PCCB) - Provides communications via the RS232 connection port, for complete operation of the condensing unit, including graphing information, up to 100 feet from the packaged chiller. The PCONN software will be provided for use with a remote PC by others. See connection diagram page 10.

PC Connection Enhanced (PCCE) - Provides communications via the RS485 connection port, for complete operation of the condensing unit including graphing, up to 6000 feet away. This option requires the addition of a gateway to convert the RS485 port back to RS232 port, and then may be connected to a modem or directly to a PC. One additional feature is that a field supplied and installed AB switch can be added to allow switching between a local PC and a modem. The gateway and PCONN software will be supplied for use with a remote PC by others. See connection diagram page 10.

Remote Monitor-Control Terminal (RMCT) - is a stand alone microcomputer that interfaces with the microcomputer in the unit which provides all unit control functions, at a remote location.

Field Mounted Disconnect Switch (FMD) - (non-fused) for 200 and 230 volt "single point power source" units, ACDR-B 130 to 200 - where "unit mounted disconnects" are not available, **must be ordered (single point power source option "SPPS")**. Circuit breakers are supplied mounted and wired for branch circuit protection. (Field mounting and wiring by others.)

Location and Space Requirements

AUDR-B Condensing Units are designed for outdoor application and can be installed on the roof or at grade level.

Proper locations and installation procedures for this equipment are very important to successful trouble free operation.

It is desirable to install these units with the Electric Box end of the unit facing into the prevailing breeze, to minimize re-circulation of the warm condenser discharge air back into the condenser.

Since the AUDR-B Condensing Units are air- cooled, it is important not to impede the air flow in or out of the condenser. Any re-circulation of warm condenser discharge air, or starvation of fresh cool air to the condenser, will cause a loss of capacity and higher operating costs due to higher condensing temperatures.

Unit Enclosures

Unit enclosures such as wire Fin Guards on the condenser vertical coil surface only, or full unit enclosures such as wire Fin Guards Top and Bottom, Full Length Aluminum Grills or Louvers will help protect from vandalism and dress the units up for grade level applications.

Fencing or Wall Enclosures

Fences or walls need to be designed to provide equipment security from vandalism, building and space esthetics, sufficient space for servicing the equipment, and supplying sufficient air flow to and from the condenser for proper unit operation. Free open area through and under fencing and walls should be considered carefully. The lack of sufficient cool air for the condensing unit can cause a loss of capacity and extra high operating costs.

Vertical Unit Clearance

There must not be any obstruction above the unit condenser fans that would impede the discharge air flow or cause re-circulation of warm discharge air back into the condensers. Ductwork should not be applied to the inlet or outlet of the unit condenser.

Lateral Unit Clearance

The unit must be installed with sufficient space all around for proper air supply and unit servicing.

See Installation Clearances on the last page of this catalog.

Roof Mounting

The unit should be installed on a level, steel channel or I-beam frame above the roof. The roof needs to be sufficiently strong to support the unit and supporting frame.

It is suggested that proper unit and piping vibration isolators, plus flexible electrical conduit connections be used to minimize sound and vibration that may otherwise be transmitted into the building.

An acoustical Engineer should always be consulted on critical sound and vibration applications. All state and local sound codes should be considered when laying out or installing mechanical equipment.

Ground Level Mounting

Ground or Grade level applications cause more installation concerns than roof top applications. At grade level, vandalism, sound, vibration and sufficient space for air supply to and from the condensers become more important.

The unit should be mounted on a level concrete slab or steel base. If a Concrete base is used it should be a one-piece level slab with a footer deep enough to extend below the frost line. Some grade level installations can be bolted down solid to the concrete slabs where noise and vibration is not a critical issue.

Grade Level Installations are often located near sound sensitive locations. Offices, meeting rooms, classrooms, living spaces and even sidewalks can be critical sound areas. These installations require careful consideration of methods to minimize sound and vibration.

Vibration eliminators are recommended under the unit and on piping and electrical conduit connected to the unit, to minimize sound transmission into the building.

An acoustical Engineer should always be consulted on critical sound and vibration applications.

All state and local sound codes should be considered when laying out or installing mechanical equipment.

Remote Cooler Module Mounting

The (RCH) Remote Cooler Module for Split-System Chiller applications can be mounted on the floor, shelf or wall supports, as well as on ceiling hangers of sufficient strenght to support the weight.

The (RCH) Remote Cooler Modules are fully assembled, piped and wired including water temperature sensors, freeze protection thermostat, refrigerant hand valve(s), solenoid valve(s), filter-dryer(s), sight-glass('s) and TX valve(s).

Refer to the Application Section for Split-System Chillers, for further detail information.

Remote Cooler - Freeze Protection

The freeze thermostat is mounted on the Remote Cooler Module and should shut down the unit if a cooler freeze condition should occur.

A water flow switch should be supplied and mounted in the water piping to protect the unit from low or no flow, which could cause cooler freezing.

Refrigerant Piping

Refrigerant piping should be designed according to the ASHRAE Standards for refrigerant piping to assure proper system operation. Specific details in the refrigerant piping design need to provide the following:

1. To assure proper refrigerant feed to the cooler.
2. To provide proper refrigerant line sizing, without excessive pressure drop.
3. To assure return of the refrigerant oil back to the compressor at all operating conditions without slugging the compressor.
4. To provide proper suction line sizing to prevent slugging the compressor(s) with oil or liquid refrigerant, and maintain proper oil return to the compressor under all operating conditions.
5. To limit the length of refrigerant lines by locating the AUDR-B Condensing Unit as close to the cooler as possible.

Liquid Lines

Liquid line standard piping practice limits the liquid line losses to 1°F saturated temperature change or 2.9 psi pressure drop. The AUDR-B condensing unit(s) subcooler(s) provide 15°F subcooled liquid. This allows normal liquid lift without flashing before the expansion valve, up to 75 feet total suction line length, at full load.

Filter-Driers – For DX Air Handler Applications

Filter-Driers should be supplied by others, to assure clean moisture free operation, and should be piped as close to the evaporator expansion valve as possible.

On DX Air Handler Applications the refrigeration specialties are not supplied with the condensing unit, so should be supplied by others.

Filter-Driers – For (RCH) Remote Cooler Split-System Chiller Applications

Filter-Driers and other refrigerant specialties required are mounted and piped on the Remote Cooler Module Skid. After proper system piping and leak testing is complete, the filter/drier cores need to be installed in the field.

Suction Lines

Suction line piping standard practice limits the line losses to 2°F saturated temperature change or 2.9 psi pressure drop.

Suction lines should be designed as short as possible. They should be sized for proper suction pressure drop and suction lift to ensure oil return, at all operating conditions. Refrigerant circuits with unloaders or multiple compressors should be designed for proper oil return at the minimum circuit capacity without excessive pressure drop at full load.

The AUDR-B maximum saturated suction temperature should not be designed over 50°F at any condensing temperature. Contact our Application Engineering Department for special applications with conditions not listed in the performance tables.

Suction lines should be insulated to prevent loss of capacity and sweating indoors, and loss of capacity with high ambient temperature outdoors.

Electrical Connection Options

Refer to the Electrical Data Tables for specific electrical data required. All wiring must be done in accordance with the National Electric Code (NEC) and all local and state codes.

A typical wiring diagram is found near the back of this catalog. A complete set of wiring diagrams for all units can be found in the ACDR-B / AUDR-B Submittal Data Book form no. SD202-20000.

Low voltage units

(200/3/60, 230/3/60 & 200/3/50)

AUDRB021S – 090D units ordered for low voltage applications are supplied standard, with **single point power source.**

All AUDRB100D – 200D units ordered for low voltage applications, are supplied standard, with **dual source power.**

AUDRB100D and larger units can be ordered with single point power source as an option.

Refer to the Electrical Data Tables for detail information.

High Voltage Units

All AUDR-B unit models ordered for high voltage applications (460/3/60, 575/3/60 & 400/3/50) are supplied standard for single source power.

Power Sources

The term “Power Source” refers to the unit main power source.

The Control Power includes the compressor crankcase heater power, and can be supplied by a unit mounted control transformer or a separate source 115 Volt source.

Unit and Field Mounted Disconnects

"Disconnecting means" are described in Article 440 of the National Electric Code (NEC) which requires "disconnecting means capable of disconnecting air conditioning and refrigeration equipment including motor-compressors, and controllers from the circuit feeder". Disconnects by others, should be selected and located within the NEC guidelines.

Location requirements per NEC, are that the disconnect be located in a readily accessible position within sight (50 feet) of the unit.

Maximum recommended fuse or HACR breaker sizes, are found in the Electrical Data Tables in this catalog.

Maximum wire sizes that the unit can accept, are listed in the Electrical Data Table in this catalog.

Control Circuits

Control circuit terminals are clearly marked on the electrical diagram found in the control panel for control power (if not supplied by a control circuit transformer) and all sensors used for Remote Cooler and DX Evaporator Control.

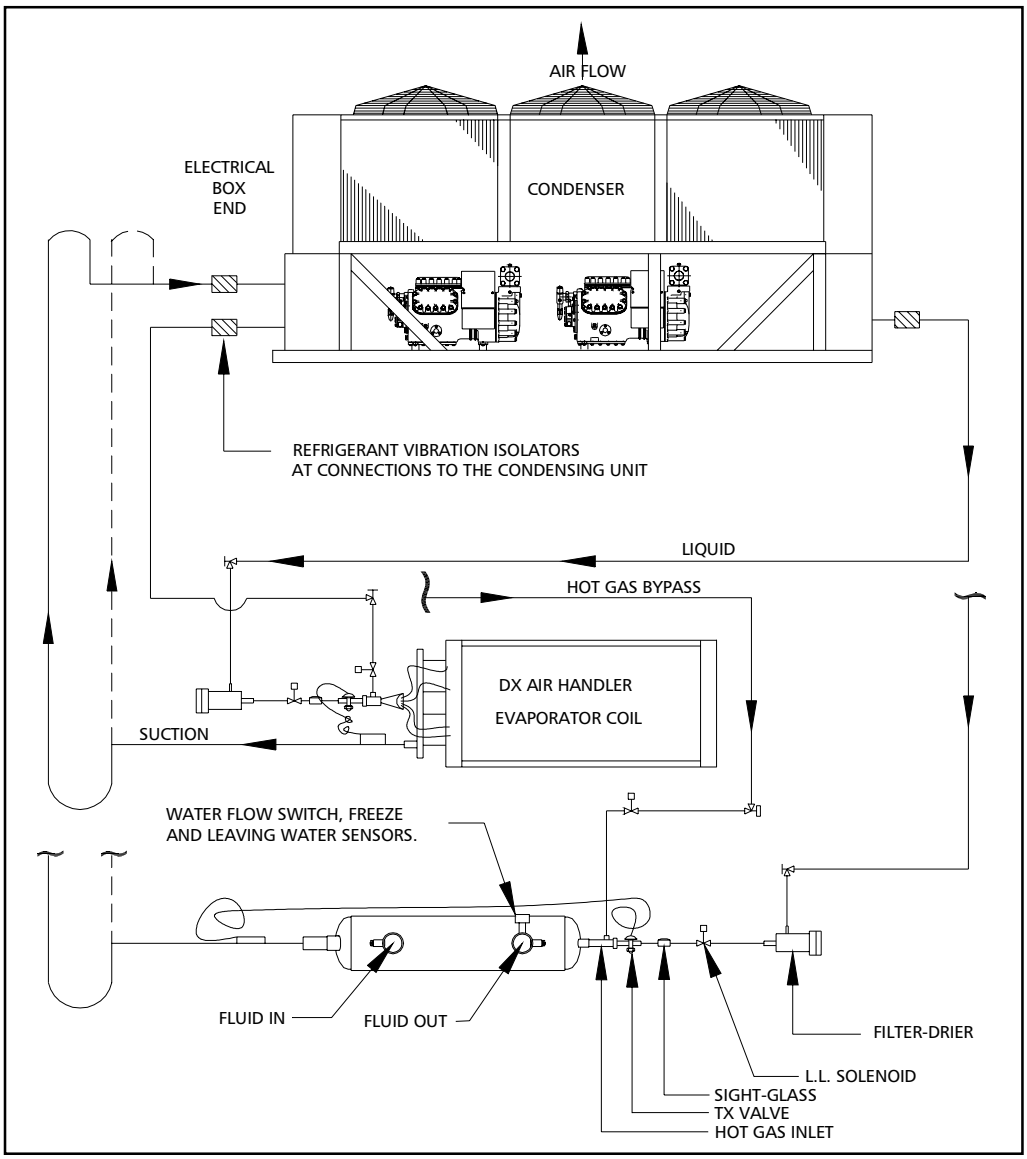
Typical Refrigerant Piping

Typical refrigerant piping is shown below and on the next page.

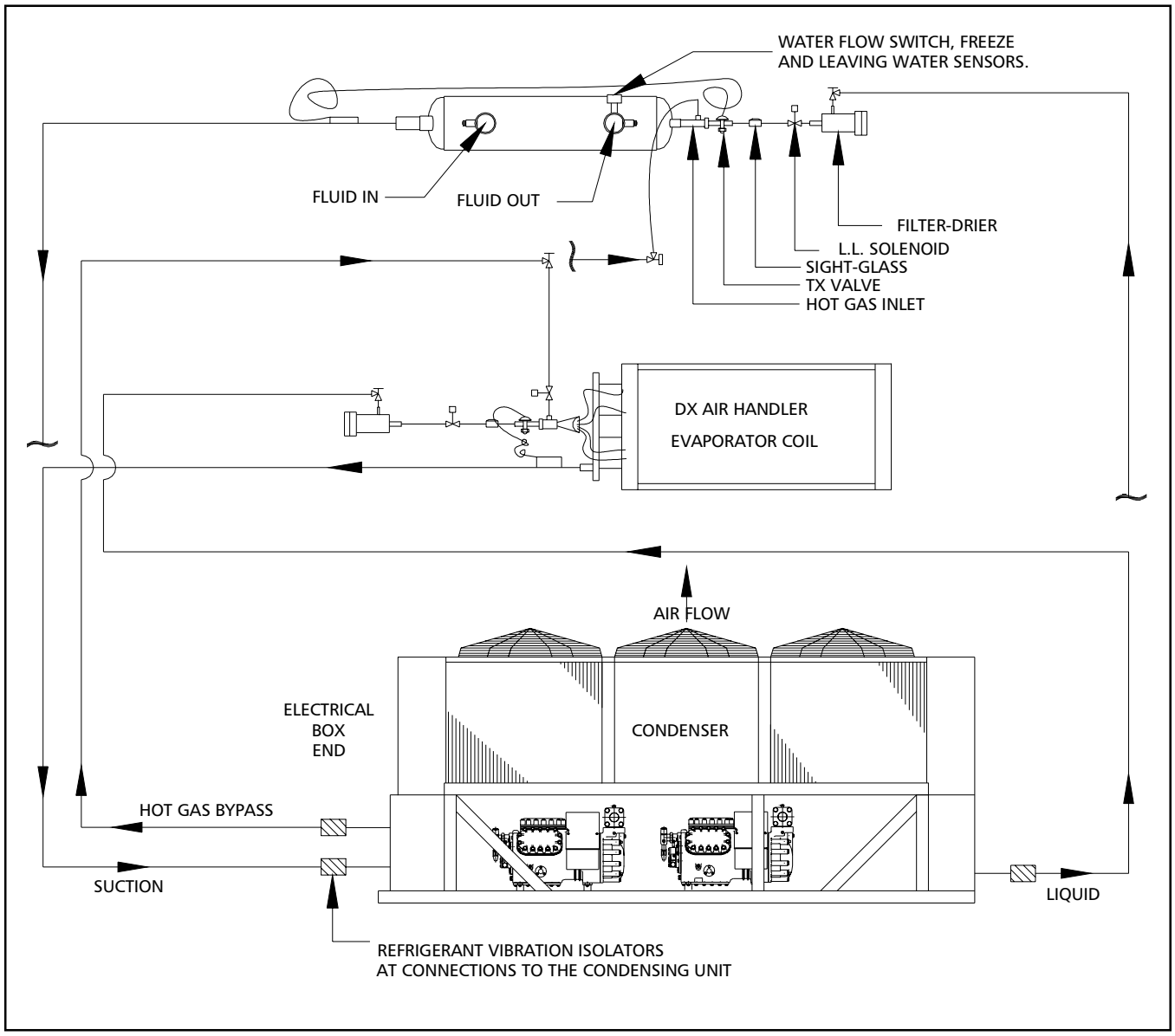
On **DX Air Handler** Applications the refrigeration specialties **are not supplied** with the condensing unit, so should be supplied by others including refrigerant piping vibration absorbers.

On **Remote Cooler** Split-System Chillers, the refrigeration specialties are supplied mounted, piped and wired to a junction box. Refrigerant piping vibration absorbers are not supplied with the Remote Cooler Module and should be supplied and piped by others.

Typical Piping for Condensing Unit Above Evaporator



Typical Piping for Condensing Unit Below Evaporator



APPLICATION DATA: FOR CONDENSING UNITS WITH DX AIR HANDLERS • •

We offer six standard "Evaporator Control Modes of Operation". These control options include Split-System Chillers and Split-System DX Air Handler applications.

Contact our Application Engineering Department for other control functions or modifications of the five listed options.

AUDR-B Evaporator Control Modes of Operation

(Select only one out of the five below .)

Split-System Chiller Applications are covered on pages 36 to 43.

DX Air Handler Applications vary widely, from Return Air Constant Volume Systems to Variable Volume Systems with many variations of system control as listed below.

Contact our Application Engineering Department for help with other requirements not listed below.

Refer to the DX Air Handler Performance Tables for capacity data at saturated suction temperatures from 30°F to 50°F and design ambients from 85°F to 125°F.

DX Air Handler Application Options

The following "Evaporator Control Modes of Operation", describe briefly the basic function of the each system.

- **RAH1 – DX Air Handler with Return Air Constant Volume Control,** and less than 30% outside air. Typical control range is 72°F to 80°F with specific points where stages turn On / Off. This mode is for normal comfort cooling only.
- **RAH2 – DX Air Handler with Constant or Variable Air Volume Control**, with Leaving Air Temperature Sensing, with a dead-band inter-stage delay (typically ±5°F). A relatively large starting dead-band is required with typical leaving air temperature 15°F higher than set point before starting the first stage. Fresh air must be less than 30%, or use RAH3 option.

  If HGBP is required, it must be ordered for each circuit. Interlaced evaporator coil circuiting is required.

  Face Split Coils, must have interlaced coil circuitry **for each coil-in-face**, and be activated on the first step of cooling to eliminate by-pass air operation.

- **RAH3 – DX Air Handler with Fresh Air Economizer**, Leaving Air Temperature Sensing for Constant or Variable Air Volume controlled systems. The outside air quantity can be up to 100% depending on the customer control of the economizer. Entering Air Enthalpy will be used to disable the unit below a set-point enthalpy **(25.0h).**

  If HGBP is required, it must be ordered for each circuit. Interlaced evaporator coil circuiting is required. Face Split Coils must have interlaced circuitry **for each coil-in-face**, and be activated n the first step of cooling to eliminate by pass air operation.

- **RAH4 – DX Air Handler for 100% Outside Air** Control, for Constant or Variable Air Volume Controlled Systems. Control is based on leaving air temperature sensing. Entering outside air enthalpy will be used to disable the unit below a setpoint enthalpy (25.0h). This option must have HGBP on all circuits, wired with the liquid line solenoids, and ECCS option for extra steps of capacity control. Re-heating the air may be necessary after over cooling for humidity control purposes. Interlaced evaporator coil circuiting is required. Face Split Coils must have interlaced circuitry **for each coil-in-face**, and be activated on the first step of cooling to eliminate by-pass operation.
- **RMAH - Multiple Evaporators with Suction Pressure Control**, controlled by customer supplied, contact closures to enable/disable each refrigerant circuit. When enabled, the first compressor on the circuit will start and stay on until disabled by the customer. The unloader or unloaders and the second compressor per circuit will be staged based on a circuit, **Suction Pressure Control** .

APPLICATION DATA: FOR DX AIR HANDLER APPLICATIONS

TYPICAL SEQUENCE OF OPERATION

RAH-1 - Return Air Temperature for Constant Volume Control
RAH-4 - 100% Outside Air Temperature for Constant Volume Control

DB Director Microcomputer Controller

The following sequence of operation describes a two-compressor reciprocating condensing unit with constant air volume and return air temperature or enthalpy control. The following describes temperature operation; however, if the unit is controlled by enthalpy, the calculated enthalpy values are used instead of temperature. Operation is very similar for a one or four compressor unit.

For initial start-up, the following conditions must be met.

- All power supplied to the package energized for 24 hours.
- Control power switch on for at least 5 minutes.
- Compressor switches on.
- All safety conditions satisfied.
- Reset pressed on the microcomputer keypad.
- Air handler fan or blower ON and air flow switch made.
- Customer control contact closed.
- Return air temperature higher than the Air Temperature setpoint plus Stage 1 Off setpoint plus the Stage Deadband setpoint.

Stage #1 - Increasing Load Sequence

After all above conditions are met, the microcomputer will call for compressor #1 to start and the unloader to be energized. When feedback to the compressor #1 sensor input confirms that the compressor has started and when suction pressure falls below the pumpdown setpoint, the liquid line solenoid #1 is energized. **The first stage of capacity is now on-line.**

As discharge pressure of compressor #1 rises, fan #1 turns ON at the "Fan Stage 1 ON" setpoint. If discharge pressure continues to rise, the subsequent odd-numbered fans will stage ON in increments of the "Condenser Differential" setpoint. For example, if the "Fan Stage 1 ON' is 190 psig and the "Condenser Differential" setpoint is 20, the stage on points will be 190, 210, 230, etc. The microcomputer may automatically increase these settings if short cycling of fans is detected.

If discharge pressure falls, the odd-numbered fans will stage OFF at the "Fan Stage 1 OFF" setpoint plus corresponding number of "Condenser Differential" setpoints. For example, if the "Fan Stage 1 OFF" is 140 psig and the "Condenser Differential" setpoint is 20, the stage off points will be 140, 160, 180, etc.

Stage #2 - Increasing Load Sequence

If return air temperature is falling at a rate of approximately one degree per minute, no more stages of capacity will be added. However, if air temperature is not falling rapidly and if return air temperature is greater than the temperature setpoint plus Stage 1 Off setpoint plus the Stage Deadband setpoint plus the Interstage Deadband setpoint, compressor #1 unloader will be de-energized. **Compressor #1 will now be fully loaded.**

Stage #3 - Increasing Load Sequence

After a minimum interstage delay of approximately one minute, and if return air temperature is not falling rapidly, and if return air temperature is greater than air temperature setpoint plus Stage 1 Off setpoint plus the Stage Deadband setpoint plus two times the Interstage Deadband setpoint, compressor #2 will start. Compressor #1 will then unload. When feedback to the compressor #2 sensor input confirms that the compressor has started and when suction pressure falls below the pumpdown setpoint, the liquid line solenoid #2 is energized. **The third stage of capacity is now on-line.**

As discharge pressure of compressor #2 rises, the even numbered fans are activated according to the fan stage setpoints as described above for circuit #1 fans.

Stage #4 - Increasing Load Sequence

The fourth stage of machine capacity, which is when compressor #1 loads up again, will occur when the following conditions are met:

1. Minimum interstage time delay on increasing load of approximately 1 minute has expired.
2. Return air temperature is not falling rapidly.
3. Return air temperature is greater than the air temperature setpoint plus Stage 1 Off setpoint plus the Stage Deadband setpoint plus three times the Interstage Deadband setpoint.

The machine is now operating at full capacity.

4. As the applied load decreases and return air temperature falls below the air temperature setpoint plus Stage 1 Off setpoint plus three times the Interstage Deadband setpoint stage 4 is turned off, compressor #1 unloads.

Decreasing Load Sequence

If return air temperature continues to fall below air temperature setpoint plus Stage 1 Off setpoint plus two times the Interstage Deadband setpoint, stage 3 is turned off. Liquid line solenoid #2 is turned off, and compressor #1 is loaded up to 100%. When compressor #2 suction pressure falls below the pumpdown-cutout setpoint, compressor #2 is turned off, and the even-numbered fans are turned off. The unit is now at 50% capacity. Note that if there is more than one compressor on a refrigerant circuit, only the last compressor to shut down will perform the pumpdown.

Stages 2 and 1 shut down in a similar manner to stages 4 and 3 mentioned above.

When a refrigerant circuit is first put in standby mode, the chiller will pumpdown one or two times before staying OFF. If suction pressure rises above pumpdown-cutin setpoint, a compressor will turn on with the liquid line solenoid closed. When suction pressure falls below pumpdown-cutout setpoint, the compressor will shut down.

Two proactive control features included in the microcomputer are low suction and high discharge pressure unload. Compressor #1 will be unloaded if circuit #1 discharge pressure exceeds the high pressure unload setpoint or if the suction pressure approaches the low pressure trip setpoint. If the unit is equipped with the Auxiliary Control Module option, the second circuit will also unload under these conditions.

APPLICATION DATA: FOR DX AIR HANDLER APPLICATIONS

TYPICAL SEQUENCE OF OPERATION

RAH-2 - Leaving Air Temperature Control for Constant or Variable Air Volume Control
RAH-3 - Fresh Air Economizer for Constant or Variable Air Volume Control

DB Director Microcomputer Controller

The following sequence of operation describes a two-compressor reciprocating condensing unit with leaving air temperature control. Operation is very similar for a one or four compressor unit.

For initial start-up, the following conditions must be met.

- All power supplied to the package energized for 24 hours.
- Control power switch on for at least 5 minutes.
- Compressor switches on.
- All safety conditions satisfied.
- Reset pressed on the microcomputer keypad.
- Air handler fan or blower ON and air flow switch made.
- Customer control contact closed.
- Leaving air temperature higher than the Leaving Air Temperature setpoint plus the Start Deadband setpoint.
- If the unit is equipped with an entering air temperature/humidity sensor, the enthalpy measured must be higher than the Minimum Enthalpy setpoint.

Stage #1 - Increasing Load Sequence

After all above conditions are met, the microcomputer will call for compressor #1 to start and the unloader to be energized. When feedback to the compressor #1 sensor input confirms that the compressor has started and when suction pressure falls below the pumpdown setpoint, the liquid line solenoid #1 is energized. **The first stage of capacity is now on-line.**

As discharge pressure of compressor #1 rises, fan #1 turns ON at the "Fan Stage 1 ON" setpoint. If discharge pressure continues to rise, the subsequent odd-numbered fans will stage ON in increments of the "Condenser Differential" setpoint. For example, if the "Fan Stage 1 ON' is 190 psig and the "Condenser Differential" setpoint is 20, the stage on points will be 190, 210, 230, etc. The microcomputer may automatically increase these settings if short cycling of fans is detected.

Stage #2 - Increasing Load Sequence

If discharge pressure falls, the odd-numbered fans will stage OFF at the "Fan Stage 1 OFF" setpoint plus corresponding number of "Condenser Differential" setpoints. For example, if the "Fan Stage 1 OFF" is 140 psig and the "Condenser Differential" setpoint is 20, the stage off points will be 140, 160, 180, etc.

If leaving air temperature is falling at a rate of approximately one degree per minute, no more stages of capacity will be added. However, if air temperature is not falling rapidly and if leaving air temperature is greater than the temperature setpoint plus "Control Zone +" setpoint, compressor #1 unloader will be de-energized. **Compressor #1 will now be fully loaded.**

Stage #3 - Increasing Load Sequence

After a minimum interstage delay of approximately one minute, and if leaving air temperature is not falling rapidly, and if leaving air temperature is greater than air temperature setpoint plus "Control Zone +" setpoint, compressor #2 will start. Compressor #1 will then unload. When feedback to the compressor #2 sensor input confirms that the compressor has started and when suction pressure falls below the pumpdown setpoint, the liquid line solenoid #2 is energized. **The third stage of capacity is now on-line.**

As discharge pressure of compressor #2 rises, the even numbered fans are activated according to the fan stage setpoints as described above for circuit #1 fans.

Stage #4 - Increasing Load Sequence

The fourth stage of machine capacity, which is when compressor #1 loads up again, will occur when the following conditions are met:

1. Minimum interstage time delay on increasing load of approximately 1 minute has expired.
2. Leaving air temperature is not falling rapidly.
3. Leaving air temperature is greater than the air temperature setpoint plus "Control Zone +".

The machine is now operating at full capacity.

Decreasing Load Sequence

As the applied load decreases and leaving air temperature falls below the air temperature setpoint minus a deadband setpoint called "Control Zone -" stage 4 is turned off. Compressor #1 unloads.

If leaving air temperature continues to fall below air temperature setpoint minus "Control Zone -" setpoint, stage 3 is turned off. Liquid line solenoid #2 is turned off, and compressor #1 is loaded up to 100%. When compressor #2 suction pressure falls below the pumpdown-cutout setpoint, compressor #2 is turned off, and the even-numbered fans are turned off. The unit is now at 50% capacity. Note that if there is more than one compressor on a refrigerant circuit, only the last compressor to shut down will perform the pumpdown.

Stages 2 and 1 shut down in a similar manner to stages 4 and 3 mentioned above.

When a refrigerant circuit is first put in standby mode, the chiller will pumpdown one or two times before staying OFF. If suction pressure rises above pumpdown-cutin setpoint, a compressor will turn on with the liquid line solenoid closed. When suction pressure falls below pumpdown-cutout setpoint, the compressor will shut down.

Two proactive control features included in the microcomputer are low suction and high discharge pressure unload. Compressor #1 will be unloaded if circuit #1 discharge pressure exceeds the high pressure unload setpoint or if the suction pressure approaches the low pressure trip setpoint. If the unit is equipped with the Auxiliary Control Module option, the second circuit will also unload under these conditions.

APPLICATION DATA: FOR DX AIR HANDLER APPLICATIONS

TYPICAL SEQUENCE OF OPERATION

RMAH - Suction Pressure Control - Multiple Evaporator Control

DB Director Microcomputer Controller

The following sequence of operation describes a two-compressor reciprocating condensing unit with suction pressure control. Operation is very similar for a one or four compressor unit.

For initial start-up, the following conditions must be met.

- All power supplied to the package energized for 24 hours.
- Control power switch on for at least 5 minutes.
- Compressor switches on.
- All safety conditions satisfied.
- Reset pressed on the microcomputer keypad.
- Air handler fan or blower ON and air flow switch made.
- Customer circuit 1 control contact closed. If circuit 2 operation is desired, circuit 2 control contact must be closed.

Stage #1 - Increasing Load Sequence

After all above conditions are met, the microcomputer will call for compressor #1 to start and the unloader to be energized. When feedback to the compressor #1 sensor input confirms that the compressor has started and when suction pressure falls below the pumpdown setpoint, the liquid line solenoid #1 is energized. The first stage of capacity is now on-line.

As discharge pressure of compressor #1 rises, fan #1 turns ON at the "Fan Stage 1 ON" setpoint. If discharge pressure continues to rise, the subsequent odd-numbered fans will stage ON in increments of the "Condenser Differential" setpoint. For example, if the "Fan Stage 1 ON' is 190 psig and the "Condenser Differential" setpoint is 20, the stage on points will be 190, 210, 230, etc. The microcomputer may automatically increase these settings if short cycling of fans is detected.

If discharge pressure falls, the odd-numbered fans will stage OFF at the "Fan Stage 1 OFF" setpoint plus corresponding number of "Condenser Differential" setpoints. For example, if the "Fan Stage 1 OFF" is 140 psig and the "Condenser Differential" setpoint is 20, the stage off points will be 140, 160, 180, etc.

Stage #2 - Increasing Load Sequence

If suction pressure is falling, no more stages of capacity will be added. However, if suction pressure is not falling rapidly and if suction pressure is greater than the suction pressure setpoint plus "Control Zone +" setpoint, compressor #1 unloader will be de-energized. Compressor #1 will now be fully loaded. If a second compressor is on the same refrigerant circuit, it will also be started after a time delay and if the above conditions are met.

Stage #3 - Increasing Load Sequence

The second refrigerant circuit will stay off line until the Circuit 2 control contact is closed. Then compressor #2 will start unloaded. When feedback to the compressor #2 sensor input confirms that the compressor has started and when suction pressure falls below the pumpdown setpoint, the liquid line solenoid #2 is energized. The third stage of capacity is now on-line.

As discharge pressure of compressor #2 rises, the even numbered fans are activated according to the fan stage setpoints as described above for circuit #1 fans.

Stage #4 - Increasing Load Sequence

The fourth stage of machine capacity, which is when compressor #2 loads up, will occur when the following conditions are met:

1. Minimum interstage time delay on increasing load of approximately 1 minute has expired.
2. Suction pressure is not falling rapidly.
3. Suction pressure is greater than the suction pressure setpoint plus "Control Zone +".

The machine is now operating at full capacity.

Decreasing Load Sequence

As the applied load decreases and suction pressure of a given circuit falls below the suction pressure setpoint minus a deadband setpoint called "Control Zone -" the compressor unloads.

If suction pressure continues to fall below suction pressure setpoint minus "Control Zone -" setpoint, additional stages of capacity, if available, are turned off. The circuit will not be turned off, however, until the Circuit control contact is opened by the customer. When the contact is opened, the corresponding liquid line solenoid is turned off. When the compressor suction pressure falls below the pumpdown-cutout setpoint, the compressor is turned off, and the corresponding fans are turned off.

The other refrigerant circuit will shut down in a similar manner to staging sequence mentioned above.

When a refrigerant circuit is first put in standby mode, the condensing unit will pumpdown one or two times before staying OFF. If suction pressure rises above pumpdown-cutin setpoint, a compressor will turn on with the liquid line solenoid closed. When suction pressure falls below pumpdown-cutout setpoint, the compressor will shut down.

Another proactive control features included in the microcomputer is high discharge pressure unload. The compressor will be unloaded if circuit discharge pressure exceeds the high pressure unload setpoint.

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		85°F			95°F			105°F		
		TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
30	021SZB	19.5	21.6	10.8	18.3	23.0	9.5	17.1	24.4	8.4
	024SZB	22.5	26.0	10.4	21.1	27.6	9.2	19.8	29.2	8.1
	027SZB	25.4	28.8	10.6	23.8	30.5	9.4	22.3	32.2	8.3
	030SZB	30.4	34.7	10.5	28.5	36.9	9.3	26.6	39.2	8.2
	035SZB	33.5	38.2	10.5	31.4	40.7	9.2	29.3	43.2	8.1
	030DZB	30.7	32.2	11.5	28.5	34.4	9.9	26.3	36.4	8.7
	035DZB	34.8	38.3	10.9	32.6	40.9	9.6	30.3	43.3	8.4
	040DZB	39.0	43.2	10.8	36.6	46.1	9.5	34.3	48.7	8.4
	045DZB	44.5	50.8	10.5	41.8	53.9	9.3	39.1	56.9	8.2
	050DZB	47.3	55.5	10.2	44.3	58.8	9.1	41.4	62.0	8.0
	052DZB	50.0	58.3	10.3	47.0	61.7	9.1	43.8	65.1	8.1
	055DZB	54.2	63.9	10.2	50.8	67.8	9.0	47.5	71.6	8.0
	062DZB	60.8	69.3	10.5	56.9	73.8	9.3	53.2	78.3	8.2
	070DZB	66.1	77.4	10.3	61.9	82.5	9.0	57.7	87.4	7.9
	075DZB	71.9	84.0	10.3	67.4	89.5	9.0	63.0	94.8	8.0
	080DZB	76.7	91.6	10.0	72.1	97.5	8.9	67.4	103.1	7.8
	085DZB	83.5	95.8	10.4	78.3	101.9	9.2	73.3	107.7	8.2
	090DZB	89.0	101.6	10.5	83.6	107.8	9.3	78.1	113.8	8.2
	100DZB	94.5	110.9	10.2	88.7	117.5	9.1	82.8	124.0	8.0
	102DZB	100.1	116.7	10.3	93.9	123.5	9.1	87.7	130.1	8.1
	112DZB	110.9	127.7	10.4	104.0	135.6	9.2	97.2	143.4	8.1
	120DZB	118.1	139.9	10.1	110.6	148.7	8.9	103.3	157.4	7.9
	130DZB	125.0	146.2	10.3	116.9	155.6	9.0	109.2	164.9	7.9
	140DZB	130.1	155.9	10.0	121.7	165.9	8.8	113.7	175.6	7.8
	155DZB	143.7	168.0	10.3	134.8	178.9	9.0	125.9	189.5	8.0
	170DZB	153.5	183.3	10.0	144.2	195.0	8.9	134.8	206.2	7.8
	180DZB	169.9	206.5	9.9	159.7	218.6	8.8	149.7	230.3	7.8
	185DZB	169.9	206.5	9.9	159.7	218.6	8.8	149.7	230.3	7.8
	190DZB	182.7	231.4	9.5	171.7	243.7	8.5	161.2	255.5	7.6
	200DZB	182.7	231.4	9.5	171.7	243.7	8.5	161.2	255.5	7.6
35	021SZB	21.4	22.4	11.5	20.2	23.9	10.1	18.9	25.4	8.9
	024SZB	24.8	27.0	11.0	23.3	28.8	9.7	21.8	30.6	8.5
	027SZB	27.7	29.8	11.1	25.9	31.7	9.8	24.2	33.6	8.7
	030SZB	33.3	36.0	11.1	31.2	38.5	9.7	29.1	40.9	8.5
	035SZB	36.7	39.6	11.1	34.3	42.4	9.7	32.1	45.1	8.5
	030DZB	34.3	33.5	12.3	31.9	35.9	10.7	29.6	38.1	9.3
	035DZB	38.4	39.8	11.6	36.0	42.6	10.1	33.5	45.3	8.9
	040DZB	42.9	44.8	11.5	40.3	47.9	10.1	37.8	50.9	8.9
	045DZB	48.6	52.7	11.1	45.7	56.1	9.8	42.7	59.4	8.6
	050DZB	51.6	57.7	10.7	48.4	61.4	9.5	45.3	65.0	8.4
	052DZB	54.4	60.6	10.8	51.0	64.4	9.5	47.7	68.0	8.4
	055DZB	59.0	66.6	10.6	55.3	70.9	9.4	51.7	75.2	8.3
	062DZB	66.6	72.1	11.1	62.4	77.0	9.7	58.3	81.8	8.5
	070DZB	72.3	80.5	10.8	67.7	86.0	9.5	63.3	91.3	8.3
	075DZB	78.7	87.5	10.8	73.8	93.4	9.5	69.0	99.2	8.4
	080DZB	84.0	95.7	10.5	79.0	102.0	9.3	73.9	108.1	8.2
	085DZB	91.7	99.6	11.0	86.2	106.2	9.7	80.6	112.7	8.6
	090DZB	97.3	105.4	11.1	91.4	112.2	9.8	85.4	118.9	8.6
	100DZB	103.3	115.5	10.7	96.9	122.7	9.5	90.5	129.9	8.4
	102DZB	108.9	121.3	10.8	102.0	128.7	9.5	95.3	136.1	8.4
	112DZB	121.1	132.7	11.0	113.5	141.4	9.6	106.1	150.0	8.5
	120DZB	129.0	146.0	10.6	120.9	155.6	9.3	113.0	165.2	8.2
	130DZB	136.6	152.4	10.8	127.9	162.6	9.4	119.6	172.8	8.3
	140DZB	142.1	162.4	10.5	133.1	173.2	9.2	124.4	183.9	8.1
	155DZB	157.3	174.9	10.8	147.6	186.8	9.5	138.0	198.4	8.4
	170DZB	168.0	191.3	10.5	157.9	204.0	9.3	147.7	216.3	8.2
	180DZB	186.2	215.6	10.4	175.2	228.9	9.2	164.4	241.7	8.2
	185DZB	186.2	215.6	10.4	175.2	228.9	9.2	164.4	241.7	8.2
	190DZB	200.0	242.6	9.9	188.3	256.1	8.8	177.1	269.0	7.9
	200DZB	200.0	242.6	9.9	188.3	256.1	8.8	177.1	269.0	7.9

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) EER is for entire unit
(4) For 50 Hz operation, multiply capacity by .85 and kW by .83
(5) Performance shown is based on 0°F Suction Line Loss

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		115°F			120°F			125°F		
		TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
30	021SZB	15.9	25.7	7.5	15.3	26.3	7.0	14.7	26.9	6.6
	024SZB	18.4	30.8	7.2	17.7	31.6	6.7	17.0	32.4	6.3
	027SZB	20.7	33.8	7.3	19.9	34.6	6.9	19.1	35.5	6.5
	030SZB	24.8	41.4	7.2	24.0	42.5	6.8	23.2	43.7	6.4
	035SZB	27.3	45.7	7.2	26.4	46.9	6.7	25.5	48.1	6.4
	030DZB	24.2	38.3	7.6	23.1	39.2	7.1	22.0	40.0	6.6
	035DZB	28.0	45.6	7.4	26.9	46.7	6.9	25.8	47.7	6.5
	040DZB	31.9	51.3	7.5	30.6	52.6	7.0	29.4	53.9	6.6
	045DZB	36.3	59.8	7.3	34.9	61.3	6.8	33.5	62.7	6.4
	050DZB	38.5	65.2	7.1	37.0	66.8	6.6	35.5	68.5	6.2
	052DZB	40.7	68.3	7.2	39.1	70.0	6.7	37.6	71.6	6.3
	055DZB	44.3	75.5	7.0	42.8	77.4	6.6	41.3	79.4	6.2
	062DZB	49.6	82.8	7.2	48.0	85.0	6.8	46.5	87.3	6.4
	070DZB	53.9	92.2	7.0	52.1	94.6	6.6	50.4	97.0	6.2
	075DZB	58.6	99.9	7.0	56.5	102.5	6.6	54.5	105.0	6.2
	080DZB	62.7	108.5	6.9	60.3	111.2	6.5	58.0	113.8	6.1
	085DZB	68.1	113.4	7.2	65.5	116.3	6.8	62.9	119.2	6.3
	090DZB	72.6	119.6	7.3	69.8	122.6	6.8	67.0	125.5	6.4
	100DZB	77.0	130.4	7.1	74.0	133.7	6.6	71.1	137.0	6.2
	102DZB	81.5	136.6	7.2	78.3	139.9	6.7	75.1	143.2	6.3
	112DZB	90.7	151.2	7.2	87.5	155.1	6.8	84.5	159.1	6.4
	120DZB	96.6	166.3	7.0	93.5	170.9	6.6	90.7	175.5	6.2
	130DZB	102.0	174.1	7.0	98.7	178.8	6.6	95.6	183.4	6.3
	140DZB	106.2	185.2	6.9	102.7	189.9	6.5	99.5	194.5	6.1
	155DZB	117.3	199.9	7.0	113.1	204.9	6.6	109.0	209.9	6.2
	170DZB	125.4	217.1	6.9	120.7	222.4	6.5	115.9	227.6	6.1
	180DZB	140.0	241.5	7.0	135.3	246.9	6.6	130.7	252.3	6.2
	185DZB	140.0	241.5	7.0	135.3	246.9	6.6	130.7	252.3	6.2
	190DZB	151.3	266.8	6.8	146.7	272.2	6.5	142.2	277.7	6.1
	200DZB	151.3	266.8	6.8	146.7	272.2	6.5	142.2	277.7	6.1
35	021SZB	17.6	26.9	7.8	16.9	27.6	7.4	16.2	28.3	6.9
	024SZB	20.2	32.4	7.5	19.5	33.3	7.0	18.7	34.2	6.6
	027SZB	22.6	35.4	7.6	21.7	36.4	7.2	20.9	37.3	6.7
	030SZB	27.2	43.4	7.5	26.3	44.6	7.1	25.5	45.9	6.7
	035SZB	30.0	47.8	7.5	29.0	49.1	7.1	28.0	50.4	6.7
	030DZB	27.1	40.2	8.1	25.9	41.1	7.6	24.7	42.0	7.1
	035DZB	31.0	47.9	7.8	29.8	49.1	7.3	28.6	50.3	6.8
	040DZB	35.1	53.7	7.8	33.8	55.1	7.4	32.4	56.5	6.9
	045DZB	39.8	62.7	7.6	38.3	64.3	7.1	36.8	66.0	6.7
	050DZB	42.1	68.6	7.4	40.5	70.4	6.9	39.0	72.3	6.5
	052DZB	44.4	71.7	7.4	42.7	73.5	7.0	41.1	75.4	6.5
	055DZB	48.4	79.4	7.3	46.7	81.6	6.9	45.2	83.9	6.5
	062DZB	54.5	86.8	7.5	52.7	89.3	7.1	51.0	91.8	6.7
	070DZB	59.1	96.6	7.3	57.2	99.3	6.9	55.4	101.8	6.5
	075DZB	64.3	104.8	7.4	62.0	107.6	6.9	59.8	110.3	6.5
	080DZB	68.7	114.1	7.2	66.1	117.0	6.8	63.6	119.9	6.4
	085DZB	75.0	119.2	7.6	72.2	122.4	7.1	69.3	125.7	6.6
	090DZB	79.5	125.4	7.6	76.5	128.7	7.1	73.5	131.9	6.7
	100DZB	84.2	137.1	7.4	81.1	140.8	6.9	77.9	144.5	6.5
	102DZB	88.7	143.4	7.4	85.4	147.1	7.0	82.1	150.8	6.5
	112DZB	99.1	158.6	7.5	95.8	163.0	7.1	92.5	167.4	6.6
	120DZB	105.8	175.1	7.2	102.4	180.1	6.8	99.3	185.2	6.4
	130DZB	111.8	182.9	7.3	108.2	188.0	6.9	104.8	193.2	6.5
	140DZB	116.3	194.4	7.2	112.6	199.6	6.8	109.1	204.7	6.4
	155DZB	128.7	209.7	7.4	124.1	215.2	6.9	119.6	220.7	6.5
	170DZB	137.4	228.2	7.2	132.3	234.0	6.8	127.1	239.7	6.4
	180DZB	154.0	254.0	7.3	149.0	259.9	6.9	144.0	265.9	6.5
	185DZB	154.0	254.0	7.3	149.0	259.9	6.9	144.0	265.9	6.5
	190DZB	166.7	281.3	7.1	161.7	287.4	6.8	156.9	293.3	6.4
	200DZB	166.7	281.3	7.1	161.7	287.4	6.8	156.9	293.3	6.4

NOTES:
(1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) EER is for entire unit
(4) For 50 Hz operation, multiply capacity by .85 and kW by .83
(5) Performance shown is based on 0°F Suction Line Loss
(6) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		85°F			95°F			105°F		
		TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
40	021SZB	23.5	23.1	12.2	22.1	24.8	10.7	20.7	26.5	9.4
	024SZB	27.1	28.0	11.6	25.5	30.0	10.2	23.8	32.0	8.9
	027SZB	30.0	30.9	11.7	28.1	33.0	10.2	26.3	35.0	9.0
	030SZB	36.3	37.4	11.7	34.0	40.0	10.2	31.8	42.7	8.9
	035SZB	40.0	41.1	11.7	37.5	44.1	10.2	35.1	47.0	9.0
	030DZB	37.9	34.7	13.1	35.4	37.4	11.4	32.9	39.8	9.9
	035DZB	42.2	41.2	12.3	39.5	44.4	10.7	36.8	47.4	9.3
	040DZB	46.9	46.3	12.2	44.2	49.7	10.7	41.4	52.9	9.4
	045DZB	53.0	54.6	11.6	49.7	58.3	10.2	46.5	62.0	9.0
	050DZB	56.2	60.0	11.2	52.7	64.0	9.9	49.3	67.9	8.7
	052DZB	59.0	63.0	11.2	55.3	67.0	9.9	51.7	71.0	8.7
	055DZB	64.1	69.4	11.1	60.1	74.1	9.7	56.2	78.7	8.6
	062DZB	72.6	74.7	11.7	68.1	80.1	10.2	63.7	85.4	8.9
	070DZB	78.8	83.6	11.3	73.9	89.5	9.9	69.1	95.3	8.7
	075DZB	85.8	91.0	11.3	80.6	97.4	9.9	75.4	103.7	8.7
	080DZB	91.7	99.8	11.0	86.2	106.6	9.7	80.6	113.3	8.5
	085DZB	100.3	103.3	11.7	94.3	110.6	10.2	88.3	117.7	9.0
	090DZB	106.0	109.2	11.6	99.5	116.7	10.2	93.1	124.0	9.0
	100DZB	112.4	120.0	11.2	105.4	127.9	9.9	98.5	135.8	8.7
	102DZB	118.0	125.9	11.2	110.6	134.0	9.9	103.3	142.1	8.7
	112DZB	131.8	137.8	11.5	123.5	147.2	10.1	115.5	156.6	8.9
	120DZB	140.5	152.2	11.1	131.7	162.6	9.7	123.2	173.2	8.5
	130DZB	148.7	158.6	11.2	139.4	169.7	9.9	130.5	180.8	8.7
	140DZB	154.7	169.2	11.0	145.1	180.8	9.6	135.8	192.4	8.5
	155DZB	171.6	182.0	11.3	161.2	194.8	9.9	150.8	207.3	8.7
	170DZB	183.4	199.6	11.0	172.4	213.3	9.7	161.3	226.6	8.5
	180DZB	203.1	225.0	10.8	191.3	239.4	9.6	179.8	253.3	8.5
	185DZB	203.1	225.0	10.8	191.3	239.4	9.6	179.8	253.3	8.5
	190DZB	217.9	253.9	10.3	205.4	268.7	9.2	193.6	282.7	8.2
	200DZB	217.9	253.9	10.3	205.4	268.7	9.2	193.6	282.7	8.2
45	021SZB	25.6	23.8	12.9	24.1	25.7	11.3	22.6	27.5	9.9
	024SZB	29.5	29.0	12.2	27.7	31.2	10.7	25.9	33.3	9.3
	027SZB	32.5	32.0	12.2	30.4	34.2	10.7	28.4	36.4	9.4
	030SZB	39.5	38.6	12.3	37.0	41.5	10.7	34.7	44.5	9.4
	035SZB	43.5	42.6	12.3	40.8	45.8	10.7	38.2	49.0	9.4
	030DZB	41.6	35.9	13.9	38.9	38.8	12.0	36.1	41.5	10.5
	035DZB	46.0	42.6	12.9	43.1	46.0	11.2	40.3	49.3	9.8
	040DZB	51.2	47.7	12.9	48.2	51.4	11.3	45.2	55.0	9.9
	045DZB	57.5	56.5	12.2	54.0	60.5	10.7	50.5	64.5	9.4
	050DZB	60.9	62.3	11.7	57.1	66.6	10.3	53.4	70.9	9.0
	052DZB	63.9	65.3	11.7	59.8	69.7	10.3	55.8	74.1	9.0
	055DZB	69.5	72.3	11.5	65.1	77.3	10.1	60.9	82.4	8.9
	062DZB	79.0	77.3	12.3	74.1	83.1	10.7	69.3	88.9	9.4
	070DZB	85.5	86.8	11.8	80.3	93.1	10.4	75.2	99.5	9.1
	075DZB	93.3	94.6	11.8	87.7	101.5	10.4	82.1	108.3	9.1
	080DZB	99.8	104.0	11.5	93.8	111.4	10.1	87.8	118.6	8.9
	085DZB	109.2	106.8	12.3	102.7	114.8	10.7	96.1	122.7	9.4
	090DZB	115.0	113.0	12.2	108.0	121.1	10.7	101.0	129.1	9.4
	100DZB	121.9	124.5	11.7	114.3	133.1	10.3	106.8	141.8	9.0
	102DZB	127.7	130.7	11.7	119.5	139.4	10.3	111.7	148.2	9.0
	112DZB	143.1	142.7	12.0	134.1	152.9	10.5	125.4	163.2	9.2
	120DZB	152.4	158.2	11.6	142.9	169.6	10.1	133.9	181.2	8.9
	130DZB	161.4	164.8	11.8	151.5	176.9	10.3	141.9	189.0	9.0
	140DZB	167.9	176.0	11.4	157.6	188.6	10.0	147.7	201.1	8.8
	155DZB	186.7	189.1	11.8	175.4	202.9	10.4	164.3	216.5	9.1
	170DZB	199.5	208.0	11.5	187.6	222.8	10.1	175.6	237.3	8.9
	180DZB	220.8	234.4	11.3	208.1	250.1	10.0	195.9	265.1	8.9
	185DZB	220.8	234.4	11.3	208.1	250.1	10.0	195.9	265.1	8.9
	190DZB	236.1	265.3	10.7	223.0	281.4	9.5	210.5	296.8	8.5
	200DZB	236.1	265.3	10.7	223.0	281.4	9.5	210.5	296.8	8.5

NOTES:
(1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) EER is for entire unit
(4) For 50 Hz operation, multiply capacity by .85 and kW by .83
(5) Performance shown is based on 0°F Suction Line Loss

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		115°F			120°F			125°F		
°F	MODEL	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
40	021SZB	19.3	28.1	8.2	18.5	28.8	7.7	17.8	29.6	7.2
	024SZB	22.2	33.9	7.8	21.3	35.0	7.3	20.5	36.0	6.8
	027SZB	24.5	37.1	7.9	23.6	38.1	7.4	22.7	39.1	7.0
	030SZB	29.8	45.4	7.9	28.8	46.8	7.4	27.9	48.2	6.9
	035SZB	32.8	49.9	7.9	31.7	51.4	7.4	30.7	52.8	7.0
	030DZB	30.2	42.0	8.6	28.8	43.0	8.0	27.4	44.0	7.5
	035DZB	34.2	50.2	8.2	32.9	51.5	7.7	31.6	52.9	7.2
	040DZB	38.5	56.1	8.2	37.1	57.7	7.7	35.6	59.2	7.2
	045DZB	43.3	65.6	7.9	41.7	67.4	7.4	40.1	69.2	7.0
	050DZB	45.8	71.9	7.6	44.1	74.0	7.2	42.4	76.1	6.7
	052DZB	48.1	75.1	7.7	46.4	77.2	7.2	44.7	79.3	6.8
	055DZB	52.6	83.5	7.6	50.9	85.9	7.1	49.2	88.4	6.7
	062DZB	59.6	90.8	7.9	57.6	93.6	7.4	55.8	96.4	6.9
	070DZB	64.6	101.1	7.7	62.6	104.0	7.2	60.6	106.9	6.8
	075DZB	70.3	109.8	7.7	67.9	112.9	7.2	65.4	115.9	6.8
	080DZB	75.1	119.8	7.5	72.3	123.0	7.1	69.4	126.1	6.6
	085DZB	82.1	124.9	7.9	79.0	128.5	7.4	75.8	132.1	6.9
	090DZB	86.7	131.2	7.9	83.5	134.8	7.4	80.3	138.5	7.0
	100DZB	91.7	143.9	7.6	88.3	148.0	7.2	84.9	152.2	6.7
	102DZB	96.3	150.2	7.7	92.8	154.4	7.2	89.3	158.6	6.8
	112DZB	108.0	166.1	7.8	104.4	171.0	7.3	100.9	175.9	6.9
	120DZB	115.4	184.1	7.5	111.8	189.6	7.1	108.5	195.3	6.7
	130DZB	122.1	192.0	7.6	118.2	197.6	7.2	114.6	203.2	6.8
	140DZB	127.1	203.8	7.5	123.1	209.5	7.0	119.3	215.2	6.7
	155DZB	140.7	219.7	7.7	135.7	225.7	7.2	130.9	231.7	6.8
	170DZB	150.1	239.6	7.5	144.6	245.9	7.1	138.9	252.2	6.6
	180DZB	168.7	266.7	7.6	163.2	273.3	7.2	157.8	279.8	6.8
	185DZB	168.7	266.7	7.6	163.2	273.3	7.2	157.8	279.8	6.8
	190DZB	182.5	296.3	7.4	177.2	302.9	7.0	172.2	309.4	6.7
	200DZB	182.5	296.3	7.4	177.2	302.9	7.0	172.2	309.4	6.7
45	021SZB	21.0	29.2	8.6	20.2	30.1	8.1	19.4	30.9	7.5
	024SZB	24.1	35.5	8.1	23.2	36.6	7.6	22.2	37.8	7.1
	027SZB	26.5	38.7	8.2	25.6	39.8	7.7	24.6	41.0	7.2
	030SZB	32.4	47.4	8.2	31.4	49.0	7.7	30.4	50.5	7.2
	035SZB	35.8	52.1	8.2	34.6	53.7	7.7	33.6	55.3	7.3
	030DZB	33.2	43.9	9.1	31.7	44.9	8.5	30.2	46.0	7.9
	035DZB	37.4	52.5	8.6	36.0	54.0	8.0	34.6	55.4	7.5
	040DZB	42.1	58.4	8.6	40.5	60.1	8.1	38.9	61.8	7.5
	045DZB	47.0	68.5	8.2	45.3	70.5	7.7	43.6	72.5	7.2
	050DZB	49.7	75.4	7.9	47.8	77.6	7.4	46.0	79.9	6.9
	052DZB	52.0	78.6	7.9	50.2	80.9	7.4	48.4	83.2	7.0
	055DZB	57.0	87.6	7.8	55.2	90.3	7.3	53.4	93.1	6.9
	062DZB	64.9	94.9	8.2	62.8	97.9	7.7	60.9	101.0	7.2
	070DZB	70.5	105.7	8.0	68.2	108.9	7.5	66.1	112.0	7.1
	075DZB	76.7	114.9	8.0	74.0	118.3	7.5	71.4	121.5	7.0
	080DZB	81.8	125.6	7.8	78.7	129.1	7.3	75.7	132.5	6.9
	085DZB	89.4	130.5	8.2	86.0	134.5	7.7	82.5	138.5	7.2
	090DZB	94.1	137.0	8.2	90.7	141.0	7.7	87.2	145.0	7.2
	100DZB	99.3	150.7	7.9	95.7	155.2	7.4	92.0	159.8	6.9
	102DZB	104.1	157.2	7.9	100.4	161.8	7.4	96.8	166.4	7.0
	112DZB	117.2	173.7	8.1	113.4	179.0	7.6	109.7	184.5	7.1
	120DZB	125.5	193.2	7.8	121.6	199.3	7.3	118.1	205.5	6.9
	130DZB	133.0	201.2	7.9	128.8	207.3	7.5	124.9	213.5	7.0
	140DZB	138.4	213.6	7.8	134.1	219.8	7.3	130.1	226.0	6.9
	155DZB	153.4	229.9	8.0	148.0	236.5	7.5	142.8	243.1	7.0
	170DZB	163.5	251.3	7.8	157.4	258.2	7.3	151.3	265.0	6.9
	180DZB	183.9	279.8	7.9	178.0	286.9	7.4	172.3	293.9	7.0
	185DZB	183.9	279.8	7.9	178.0	286.9	7.4	172.3	293.9	7.0
	190DZB	198.8	311.6	7.7	193.2	318.8	7.3	187.9	325.9	6.9
	200DZB	198.8	311.6	7.7	193.2	318.8	7.3	187.9	325.9	6.9

NOTES:
(1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) EER is for entire unit
(4) For 50 Hz operation, multiply capacity by .85 and kW by .83
(5) Performance shown is based on 0°F Suction Line Loss
(6) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		85°F			95°F			105°F		
		TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
50	021SZB	27.8	24.5	13.6	26.2	26.5	11.9	24.5	28.4	10.4
	024SZB	32.0	30.0	12.8	30.0	32.3	11.2	28.1	34.7	9.7
	027SZB	35.2	33.2	12.7	32.9	35.5	11.1	30.7	37.9	9.7
	030SZB	42.8	39.8	12.9	40.2	43.0	11.2	37.6	46.2	9.8
	035SZB	47.1	44.0	12.8	44.3	47.5	11.2	41.5	50.9	9.8
	030DZB	45.1	37.1	14.6	42.2	40.2	12.6	39.2	43.0	10.9
	035DZB	49.9	43.9	13.6	46.8	47.6	11.8	43.8	51.2	10.3
	040DZB	55.6	48.9	13.6	52.3	53.0	11.9	49.1	56.9	10.4
	045DZB	62.2	58.4	12.8	58.4	62.7	11.2	54.6	67.1	9.8
	050DZB	65.9	64.5	12.3	61.7	69.2	10.7	57.6	73.9	9.4
	052DZB	68.9	67.8	12.2	64.5	72.5	10.7	60.2	77.2	9.3
	055DZB	75.0	75.1	12.0	70.3	80.5	10.5	65.8	86.1	9.2
	062DZB	85.6	79.6	12.9	80.3	85.9	11.2	75.2	92.3	9.8
	070DZB	92.6	90.0	12.4	87.1	96.8	10.8	81.7	103.7	9.5
	075DZB	101.2	98.2	12.4	95.2	105.6	10.8	89.2	113.0	9.5
	080DZB	108.3	108.3	12.0	101.8	116.3	10.5	95.3	124.1	9.2
	085DZB	118.4	110.2	12.9	111.3	118.9	11.2	104.2	127.5	9.8
	090DZB	124.5	116.7	12.8	116.8	125.4	11.2	109.3	134.1	9.8
	100DZB	131.8	129.0	12.3	123.5	138.3	10.7	115.3	147.8	9.4
	102DZB	137.9	135.6	12.2	128.9	144.9	10.7	120.4	154.5	9.3
	112DZB	155.0	147.6	12.6	145.1	158.6	11.0	135.7	169.8	9.6
	120DZB	164.8	163.9	12.1	154.6	176.4	10.5	145.0	189.1	9.2
	130DZB	174.7	171.0	12.3	164.0	184.0	10.7	153.8	197.2	9.4
	140DZB	181.6	183.0	11.9	170.6	196.6	10.4	160.1	210.2	9.1
	155DZB	202.5	196.4	12.4	190.4	211.3	10.8	178.4	226.0	9.5
	170DZB	216.5	216.6	12.0	203.6	232.6	10.5	190.6	248.2	9.2
	180DZB	239.0	243.8	11.8	225.6	260.8	10.4	212.4	277.1	9.2
	185DZB	239.0	243.8	11.8	225.6	260.8	10.4	212.4	277.1	9.2
	190DZB	254.7	276.7	11.0	240.8	294.3	9.8	227.7	311.0	8.8
	200DZB	254.7	276.7	11.0	240.8	294.3	9.8	227.7	311.0	8.8

NOTES:
(1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) EER is for entire unit
(4) For 50 Hz operation, multiply capacity by .85 and kW by .83
(5) Performance shown is based on 0°F Suction Line Loss

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		115°F			120°F			125°F		
		TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
50	021SZB	22.9	30.3	9.0	22.0	31.3	8.4	21.1	32.2	7.9
	024SZB	26.1	37.1	8.4	25.1	38.3	7.9	24.0	39.5	7.3
	027SZB	28.6	40.4	8.5	27.6	41.6	8.0	26.6	42.9	7.4
	030SZB	35.3	49.4	8.6	34.1	51.1	8.0	33.1	52.8	7.5
	035SZB	38.9	54.4	8.6	37.7	56.1	8.1	36.6	57.8	7.6
	030DZB	36.1	45.6	9.5	34.5	46.8	8.8	32.8	47.9	8.2
	035DZB	40.7	54.7	8.9	39.3	56.3	8.4	37.7	58.0	7.8
	040DZB	45.7	60.7	9.0	44.0	62.5	8.4	42.3	64.4	7.9
	045DZB	50.9	71.4	8.6	49.1	73.6	8.0	47.2	75.8	7.5
	050DZB	53.6	78.7	8.2	51.6	81.2	7.6	49.6	83.8	7.1
	052DZB	56.1	82.1	8.2	54.1	84.6	7.7	52.2	87.2	7.2
	055DZB	61.6	91.8	8.1	59.7	94.8	7.6	57.8	97.8	7.1
	062DZB	70.5	98.8	8.6	68.3	102.1	8.0	66.2	105.6	7.5
	070DZB	76.6	110.5	8.3	74.3	113.9	7.8	72.0	117.3	7.4
	075DZB	83.3	120.2	8.3	80.5	123.8	7.8	77.6	127.3	7.3
	080DZB	88.8	131.6	8.1	85.5	135.4	7.6	82.2	139.1	7.1
	085DZB	96.8	136.1	8.5	93.1	140.4	8.0	89.3	144.7	7.4
	090DZB	101.8	142.8	8.6	98.1	147.2	8.0	94.4	151.6	7.5
	100DZB	107.2	157.5	8.2	103.2	162.5	7.6	99.3	167.5	7.1
	102DZB	112.2	164.2	8.2	108.3	169.3	7.7	104.4	174.4	7.2
	112DZB	127.0	181.2	8.4	122.8	187.1	7.9	118.8	193.1	7.4
	120DZB	136.1	202.1	8.1	131.9	208.9	7.6	128.1	215.8	7.1
	130DZB	144.3	210.4	8.2	139.9	217.1	7.7	135.8	223.9	7.3
	140DZB	150.4	223.7	8.1	145.8	230.4	7.6	141.5	237.2	7.2
	155DZB	166.7	240.4	8.3	160.9	247.6	7.8	155.3	254.7	7.3
	170DZB	177.6	263.3	8.1	171.0	270.8	7.6	164.4	278.2	7.1
	180DZB	199.6	293.0	8.2	193.4	300.7	7.7	187.3	308.4	7.3
	185DZB	199.6	293.0	8.2	193.4	300.7	7.7	187.3	308.4	7.3
	190DZB	215.3	327.1	7.9	209.5	334.9	7.5	203.9	342.6	7.1
	200DZB	215.3	327.1	7.9	209.5	334.9	7.5	203.9	342.6	7.1

NOTES:
(1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) EER is for entire unit
(4) For 50 Hz operation, multiply capacity by .85 and kW by .83
(5) Performance shown is based on 0°F Suction Line Loss
(6) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
°C	MODEL	kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
-2.0	021SZB	66.0	21.5	3.1	62.4	22.7	2.7	58.8	23.9	2.5
	024SZB	76.3	25.8	3.0	72.0	27.2	2.6	67.8	28.6	2.4
	027SZB	86.3	28.6	3.0	81.5	30.1	2.7	76.7	31.6	2.4
	030SZB	103.2	34.5	3.0	97.2	36.4	2.7	91.4	38.4	2.4
	035SZB	113.7	38.0	3.0	107.0	40.2	2.7	100.5	42.4	2.4
	030DZB	103.3	32.0	3.2	96.4	33.9	2.8	89.9	35.7	2.5
	035DZB	117.9	38.1	3.1	110.8	40.3	2.7	103.7	42.4	2.4
	040DZB	131.9	43.0	3.1	124.7	45.5	2.7	117.5	47.8	2.5
	045DZB	151.1	50.5	3.0	142.7	53.2	2.7	134.3	55.8	2.4
	050DZB	160.5	55.1	2.9	151.4	57.9	2.6	142.4	60.8	2.3
	052DZB	170.2	57.9	2.9	160.7	60.9	2.6	151.0	63.8	2.4
	055DZB	184.1	63.4	2.9	173.6	66.8	2.6	163.3	70.1	2.3
	062DZB	206.3	68.9	3.0	194.4	72.9	2.7	182.7	76.8	2.4
	070DZB	224.4	76.9	2.9	211.2	81.4	2.6	198.5	85.7	2.3
	075DZB	243.9	83.4	2.9	230.1	88.2	2.6	216.4	92.9	2.3
	080DZB	260.4	91.0	2.9	246.1	96.0	2.6	231.7	101.0	2.3
	085DZB	282.7	95.2	3.0	266.9	100.4	2.7	251.3	105.5	2.4
	090DZB	302.2	100.9	3.0	285.4	106.4	2.7	268.6	111.6	2.4
	100DZB	321.0	110.1	2.9	302.9	115.9	2.6	284.8	121.5	2.3
	102DZB	340.5	115.9	2.9	321.3	121.8	2.6	302.1	127.6	2.4
	112DZB	376.7	126.9	3.0	355.4	133.8	2.7	334.4	140.6	2.4
	120DZB	401.0	138.8	2.9	377.8	146.5	2.6	355.2	154.2	2.3
	130DZB	424.1	145.2	2.9	399.3	153.4	2.6	375.4	161.5	2.3
	140DZB	441.7	154.8	2.9	415.8	163.5	2.5	390.8	172.1	2.3
	155DZB	487.7	166.9	2.9	460.2	176.4	2.6	432.8	185.8	2.3
	170DZB	520.8	181.9	2.9	492.3	192.1	2.6	463.4	201.9	2.3
	180DZB	576.3	204.7	2.8	544.8	215.3	2.5	513.9	225.5	2.3
	185DZB	576.3	204.7	2.8	544.8	215.3	2.5	513.9	225.5	2.3
	190DZB	619.7	229.1	2.7	585.7	239.8	2.4	553.0	250.1	2.2
	200DZB	619.7	229.1	2.7	585.7	239.8	2.4	553.0	250.1	2.2
1.0	021SZB	73.3	22.4	3.3	69.3	23.7	2.9	65.4	25.0	2.6
	024SZB	84.7	26.9	3.1	80.0	28.5	2.8	75.3	30.1	2.5
	027SZB	94.7	29.8	3.2	89.4	31.4	2.8	84.1	33.1	2.5
	030SZB	113.9	36.0	3.2	107.3	38.1	2.8	101.0	40.2	2.5
	035SZB	125.4	39.5	3.2	118.2	42.0	2.8	111.2	44.4	2.5
	030DZB	116.7	33.4	3.5	109.3	35.5	3.1	102.0	37.5	2.7
	035DZB	131.3	39.7	3.3	123.6	42.2	2.9	115.9	44.6	2.6
	040DZB	146.5	44.7	3.3	138.7	47.4	2.9	130.7	50.1	2.6
	045DZB	166.5	52.6	3.2	157.3	55.6	2.8	148.1	58.5	2.5
	050DZB	176.7	57.5	3.1	166.8	60.7	2.7	157.0	63.9	2.5
	052DZB	186.5	60.4	3.1	175.9	63.7	2.8	165.6	66.9	2.5
	055DZB	202.2	66.4	3.0	190.6	70.1	2.7	179.5	73.9	2.4
	062DZB	227.7	71.9	3.2	214.7	76.2	2.8	202.0	80.5	2.5
	070DZB	247.3	80.3	3.1	233.1	85.1	2.7	219.3	89.9	2.4
	075DZB	269.1	87.2	3.1	254.1	92.4	2.7	239.1	97.6	2.5
	080DZB	287.4	95.3	3.0	271.8	100.9	2.7	255.9	106.3	2.4
	085DZB	313.6	99.4	3.2	296.4	105.2	2.8	279.2	110.9	2.5
	090DZB	333.0	105.2	3.2	314.6	111.2	2.8	296.3	117.0	2.5
	100DZB	353.5	115.1	3.1	333.7	121.5	2.7	314.1	127.8	2.5
	102DZB	372.9	120.9	3.1	351.8	127.5	2.8	331.1	133.9	2.5
	112DZB	414.5	132.4	3.1	391.0	140.0	2.8	368.1	147.6	2.5
	120DZB	441.6	145.5	3.0	416.3	153.9	2.7	391.8	162.4	2.4
	130DZB	467.2	151.9	3.1	440.4	160.9	2.7	414.4	169.9	2.4
	140DZB	486.4	161.9	3.0	458.3	171.4	2.7	431.2	180.8	2.4
	155DZB	538.3	174.4	3.1	508.2	184.9	2.7	478.3	195.1	2.5
	170DZB	574.9	190.7	3.0	543.5	201.8	2.7	511.9	212.7	2.4
	180DZB	636.9	214.8	3.0	602.8	226.5	2.7	569.4	237.7	2.4
	185DZB	636.9	214.8	3.0	602.8	226.5	2.7	569.4	237.7	2.4
	190DZB	684.5	241.2	2.8	648.1	253.1	2.6	613.3	264.5	2.3
	200DZB	684.5	241.2	2.8	648.1	253.1	2.6	613.3	264.5	2.3

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) Performance shown is based on 0°F Suction Line Loss

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
-2.0	021SZB	54.3	25.3	2.2	52.1	25.9	2.0	49.8	26.6	1.9
	024SZB	62.7	30.2	2.1	60.2	31.0	1.9	57.7	31.9	1.8
	027SZB	70.8	33.3	2.1	67.9	34.1	2.0	64.9	35.0	1.9
	030SZB	84.8	40.7	2.1	81.8	41.9	2.0	79.0	43.1	1.8
	035SZB	93.2	45.0	2.1	89.8	46.2	1.9	86.7	47.5	1.8
	030DZB	82.0	37.7	2.2	78.0	38.6	2.0	73.9	39.4	1.9
	035DZB	95.4	44.8	2.1	91.2	45.9	2.0	87.0	47.0	1.9
	040DZB	108.7	50.5	2.2	104.2	51.8	2.0	99.6	53.2	1.9
	045DZB	124.0	58.8	2.1	118.8	60.4	2.0	113.5	61.9	1.8
	050DZB	131.6	64.1	2.1	126.1	65.8	1.9	120.5	67.5	1.8
	052DZB	139.4	67.2	2.1	133.5	68.9	1.9	127.5	70.6	1.8
	055DZB	151.5	74.2	2.0	145.9	76.2	1.9	140.4	78.3	1.8
	062DZB	169.7	81.4	2.1	163.6	83.8	2.0	158.0	86.2	1.8
	070DZB	184.1	90.8	2.0	177.5	93.3	1.9	171.3	95.7	1.8
	075DZB	200.4	98.3	2.0	192.6	100.9	1.9	185.1	103.5	1.8
	080DZB	214.3	106.7	2.0	205.6	109.5	1.9	196.9	112.2	1.8
	085DZB	232.4	111.5	2.1	222.9	114.5	1.9	213.2	117.6	1.8
	090DZB	248.1	117.7	2.1	237.6	120.7	2.0	227.0	123.7	1.8
	100DZB	263.1	128.2	2.1	252.2	131.6	1.9	241.1	135.0	1.8
	102DZB	278.8	134.4	2.1	266.9	137.8	1.9	254.9	141.2	1.8
	112DZB	310.1	148.7	2.1	298.4	152.8	2.0	287.1	157.0	1.8
	120DZB	330.2	163.5	2.0	318.8	168.2	1.9	308.4	173.0	1.8
	130DZB	348.6	171.2	2.0	336.3	176.1	1.9	325.0	180.9	1.8
	140DZB	362.8	182.1	2.0	350.0	187.0	1.9	338.2	191.9	1.8
	155DZB	400.8	196.6	2.0	385.3	201.9	1.9	370.3	207.1	1.8
	170DZB	428.7	213.4	2.0	411.2	218.9	1.9	393.9	224.3	1.8
	180DZB	478.0	237.3	2.0	460.5	243.0	1.9	443.3	248.6	1.8
	185DZB	478.0	237.3	2.0	460.5	243.0	1.9	443.3	248.6	1.8
	190DZB	516.1	261.9	2.0	498.7	267.7	1.9	482.0	273.4	1.8
	200DZB	516.1	261.9	2.0	498.7	267.7	1.9	482.0	273.4	1.8
1.0	021SZB	60.5	26.6	2.3	58.0	27.3	2.1	55.5	28.0	2.0
	024SZB	69.7	31.9	2.2	66.9	32.9	2.0	64.1	33.9	1.9
	027SZB	77.9	35.0	2.2	74.8	36.0	2.1	71.6	37.0	1.9
	030SZB	93.8	42.8	2.2	90.5	44.2	2.0	87.4	45.5	1.9
	035SZB	103.2	47.2	2.2	99.5	48.6	2.0	96.0	50.0	1.9
	030DZB	93.1	39.7	2.3	88.5	40.7	2.2	83.8	41.6	2.0
	035DZB	106.8	47.3	2.3	102.2	48.6	2.1	97.6	49.8	2.0
	040DZB	121.0	53.1	2.3	116.0	54.6	2.1	110.9	56.1	2.0
	045DZB	137.1	62.0	2.2	131.5	63.7	2.1	125.8	65.4	1.9
	050DZB	145.3	67.7	2.1	139.4	69.6	2.0	133.4	71.6	1.9
	052DZB	153.1	70.8	2.2	147.0	72.8	2.0	140.8	74.7	1.9
	055DZB	166.8	78.4	2.1	160.8	80.7	2.0	155.0	83.1	1.9
	062DZB	187.7	85.7	2.2	181.0	88.3	2.0	174.9	91.0	1.9
	070DZB	203.6	95.5	2.1	196.4	98.2	2.0	189.7	101.0	1.9
	075DZB	221.6	103.5	2.1	213.2	106.5	2.0	204.8	109.4	1.9
	080DZB	236.8	112.6	2.1	227.3	115.7	2.0	217.6	118.7	1.8
	085DZB	258.3	117.7	2.2	247.8	121.1	2.0	237.0	124.5	1.9
	090DZB	274.1	123.9	2.2	263.0	127.3	2.1	251.7	130.8	1.9
	100DZB	290.5	135.4	2.1	278.7	139.2	2.0	266.9	143.2	1.9
	102DZB	306.3	141.6	2.2	293.9	145.5	2.0	281.5	149.4	1.9
	112DZB	341.8	156.6	2.2	329.3	161.3	2.0	317.3	166.0	1.9
	120DZB	364.5	172.8	2.1	352.1	178.1	2.0	340.7	183.5	1.9
	130DZB	385.2	180.6	2.1	371.8	186.0	2.0	359.4	191.4	1.9
	140DZB	400.8	191.9	2.1	386.9	197.4	2.0	374.0	202.8	1.8
	155DZB	443.3	207.1	2.1	426.3	212.9	2.0	409.7	218.7	1.9
	170DZB	473.7	225.3	2.1	454.6	231.4	2.0	435.3	237.5	1.8
	180DZB	530.4	250.7	2.1	511.4	257.0	2.0	492.8	263.3	1.9
	185DZB	530.4	250.7	2.1	511.4	257.0	2.0	492.8	263.3	1.9
	190DZB	573.7	277.6	2.1	555.1	284.0	2.0	537.3	290.2	1.9
	200DZB	573.7	277.6	2.1	555.1	284.0	2.0	537.3	290.2	1.9

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) Performance shown is based on 0°F Suction Line Loss
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
4.0	021SZB	80.9	23.2	3.5	76.6	24.7	3.1	72.2	26.1	2.8
	024SZB	93.4	28.1	3.3	88.3	29.8	3.0	83.2	31.5	2.6
	027SZB	103.6	31.0	3.3	97.7	32.8	3.0	91.9	34.6	2.7
	030SZB	125.2	37.4	3.3	118.1	39.8	3.0	111.2	42.2	2.6
	035SZB	137.8	41.1	3.3	130.1	43.8	3.0	122.5	46.4	2.6
	030DZB	130.5	34.8	3.8	122.6	37.1	3.3	114.6	39.3	2.9
	035DZB	145.2	41.3	3.5	136.9	44.1	3.1	128.6	46.7	2.8
	040DZB	161.8	46.4	3.5	153.2	49.4	3.1	144.5	52.3	2.8
	045DZB	182.7	54.7	3.3	172.6	58.0	3.0	162.6	61.2	2.7
	050DZB	193.8	60.0	3.2	182.9	63.6	2.9	172.2	67.1	2.6
	052DZB	203.6	63.0	3.2	192.0	66.6	2.9	180.7	70.2	2.6
	055DZB	221.2	69.5	3.2	208.6	73.6	2.8	196.5	77.7	2.5
	062DZB	250.4	74.9	3.3	236.2	79.6	3.0	222.4	84.3	2.6
	070DZB	271.6	83.7	3.2	256.3	88.9	2.9	241.3	94.1	2.6
	075DZB	295.9	91.0	3.3	279.5	96.7	2.9	263.3	102.3	2.6
	080DZB	316.2	99.8	3.2	299.0	105.9	2.8	281.6	111.8	2.5
	085DZB	345.8	103.4	3.3	327.1	109.9	3.0	308.2	116.2	2.7
	090DZB	365.4	109.4	3.3	345.2	116.0	3.0	325.2	122.4	2.7
	100DZB	387.6	120.1	3.2	365.8	127.1	2.9	344.4	134.1	2.6
	102DZB	407.2	126.0	3.2	383.9	133.2	2.9	361.3	140.3	2.6
	112DZB	454.6	137.9	3.3	428.7	146.2	2.9	403.7	154.6	2.6
	120DZB	484.5	152.2	3.2	456.8	161.5	2.8	430.3	170.9	2.5
	130DZB	512.7	158.7	3.2	483.7	168.6	2.9	455.6	178.4	2.6
	140DZB	533.5	169.2	3.2	503.3	179.6	2.8	474.1	189.9	2.5
	155DZB	591.9	182.1	3.3	559.1	193.5	2.9	526.6	204.7	2.6
	170DZB	632.5	199.6	3.2	597.9	211.8	2.8	563.3	223.7	2.5
	180DZB	700.6	224.9	3.1	663.7	237.8	2.8	627.7	250.1	2.5
	185DZB	700.6	224.9	3.1	663.7	237.8	2.8	627.7	250.1	2.5
	190DZB	751.6	253.6	3.0	712.7	266.7	2.7	675.7	279.2	2.4
	200DZB	751.6	253.6	3.0	712.7	266.7	2.7	675.7	279.2	2.4
7.0	021SZB	88.9	24.0	3.7	84.2	25.6	3.3	79.4	27.2	2.9
	024SZB	102.4	29.2	3.5	96.8	31.1	3.1	91.2	33.0	2.8
	027SZB	113.0	32.2	3.5	106.5	34.1	3.1	100.1	36.1	2.8
	030SZB	137.1	38.8	3.5	129.4	41.4	3.1	121.9	44.0	2.8
	035SZB	150.9	42.8	3.5	142.6	45.6	3.1	134.4	48.5	2.8
	030DZB	144.3	36.1	4.0	135.8	38.7	3.5	127.1	41.1	3.1
	035DZB	159.6	42.9	3.7	150.6	45.9	3.3	141.7	48.8	2.9
	040DZB	177.7	47.9	3.7	168.4	51.2	3.3	158.8	54.4	2.9
	045DZB	199.7	56.8	3.5	188.6	60.4	3.1	177.7	63.9	2.8
	050DZB	211.6	62.5	3.4	199.7	66.4	3.0	187.9	70.2	2.7
	052DZB	221.7	65.6	3.4	208.9	69.5	3.0	196.5	73.4	2.7
	055DZB	241.2	72.5	3.3	227.5	77.0	3.0	214.3	81.6	2.6
	062DZB	274.3	77.6	3.5	258.8	82.8	3.1	243.9	88.1	2.8
	070DZB	297.1	87.1	3.4	280.6	92.8	3.0	264.6	98.5	2.7
	075DZB	324.2	95.0	3.4	306.5	101.1	3.0	288.9	107.2	2.7
	080DZB	346.6	104.4	3.3	327.7	111.0	3.0	308.8	117.5	2.6
	085DZB	379.3	107.4	3.5	358.9	114.5	3.1	338.1	121.5	2.8
	090DZB	399.5	113.5	3.5	377.3	120.7	3.1	355.3	127.9	2.8
	100DZB	423.3	125.0	3.4	399.4	132.7	3.0	375.8	140.5	2.7
	102DZB	443.4	131.2	3.4	417.9	139.0	3.0	393.0	146.8	2.7
	112DZB	497.0	143.3	3.5	468.5	152.5	3.1	441.2	161.6	2.7
	120DZB	529.2	158.9	3.3	499.4	169.1	3.0	470.8	179.5	2.6
	130DZB	560.7	165.5	3.4	529.2	176.3	3.0	499.0	187.1	2.7
	140DZB	583.0	176.7	3.3	550.6	188.0	2.9	519.3	199.2	2.6
	155DZB	648.4	189.9	3.4	612.9	202.3	3.0	577.7	214.5	2.7
	170DZB	693.1	208.8	3.3	655.5	222.0	3.0	617.6	235.0	2.6
	180DZB	766.9	235.2	3.3	727.2	249.2	2.9	688.5	262.7	2.6
	185DZB	766.9	235.2	3.3	727.2	249.2	2.9	688.5	262.7	2.6
	190DZB	820.6	266.0	3.1	779.2	280.4	2.8	739.8	294.1	2.5
	200DZB	820.6	266.0	3.1	779.2	280.4	2.8	739.8	294.1	2.5

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) Performance shown is based on 0°F Suction Line Loss

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
4.0	021SZB	66.9	27.8	2.4	64.2	28.7	2.2	61.4	29.5	2.1
	024SZB	77.0	33.6	2.3	73.8	34.7	2.1	70.7	35.8	2.0
	027SZB	85.2	36.8	2.3	81.9	37.9	2.2	78.6	39.0	2.0
	030SZB	103.4	45.0	2.3	99.8	46.5	2.1	96.4	48.0	2.0
	035SZB	113.9	49.5	2.3	109.8	51.1	2.2	106.1	52.6	2.0
	030DZB	104.7	41.7	2.5	99.6	42.8	2.3	94.3	43.7	2.2
	035DZB	118.6	49.8	2.4	113.7	51.2	2.2	108.7	52.6	2.1
	040DZB	133.8	55.7	2.4	128.3	57.3	2.2	122.8	59.0	2.1
	045DZB	150.6	65.1	2.3	144.6	67.0	2.2	138.5	68.9	2.0
	050DZB	159.4	71.3	2.2	153.0	73.5	2.1	146.6	75.7	1.9
	052DZB	167.4	74.5	2.2	160.8	76.7	2.1	154.3	78.9	2.0
	055DZB	182.8	82.8	2.2	176.3	85.4	2.1	170.2	88.0	1.9
	062DZB	206.8	90.1	2.3	199.6	93.0	2.1	192.8	96.0	2.0
	070DZB	224.5	100.3	2.2	216.6	103.4	2.1	209.3	106.4	2.0
	075DZB	244.3	108.9	2.2	235.0	112.1	2.1	225.9	115.3	2.0
	080DZB	260.8	118.7	2.2	250.3	122.1	2.0	239.7	125.5	1.9
	085DZB	285.2	123.8	2.3	273.5	127.6	2.1	261.6	131.5	2.0
	090DZB	301.2	130.1	2.3	289.2	134.0	2.2	277.1	137.9	2.0
	100DZB	318.7	142.7	2.2	305.9	147.0	2.1	293.2	151.4	1.9
	102DZB	334.7	149.0	2.2	321.6	153.4	2.1	308.7	157.8	2.0
	112DZB	375.1	164.7	2.3	361.7	169.9	2.1	348.8	175.2	2.0
	120DZB	400.8	182.4	2.2	387.4	188.3	2.1	374.9	194.4	1.9
	130DZB	424.0	190.3	2.2	409.5	196.3	2.1	396.0	202.3	2.0
	140DZB	441.3	202.1	2.2	426.3	208.1	2.0	412.3	214.1	1.9
	155DZB	488.6	217.8	2.2	469.9	224.3	2.1	451.8	230.7	2.0
	170DZB	521.6	237.5	2.2	500.5	244.3	2.0	479.3	250.9	1.9
	180DZB	585.5	264.4	2.2	565.0	271.4	2.1	544.9	278.3	2.0
	185DZB	585.5	264.4	2.2	565.0	271.4	2.1	544.9	278.3	2.0
	190DZB	633.6	293.6	2.2	613.8	300.7	2.0	594.9	307.6	1.9
	200DZB	633.6	293.6	2.2	613.8	300.7	2.0	594.9	307.6	1.9
7.0	021SZB	73.6	29.1	2.5	70.6	30.0	2.4	67.5	30.9	2.2
	024SZB	84.3	35.4	2.4	80.9	36.6	2.2	77.4	37.8	2.0
	027SZB	92.8	38.5	2.4	89.2	39.7	2.2	85.7	41.0	2.1
	030SZB	113.5	47.2	2.4	109.6	48.9	2.2	105.9	50.5	2.1
	035SZB	125.2	51.9	2.4	120.8	53.6	2.3	116.7	55.3	2.1
	030DZB	116.2	43.7	2.7	110.6	44.8	2.5	104.7	45.9	2.3
	035DZB	130.9	52.2	2.5	125.6	53.8	2.3	120.3	55.4	2.2
	040DZB	147.2	58.2	2.5	141.2	60.0	2.4	135.1	61.8	2.2
	045DZB	164.6	68.2	2.4	158.2	70.3	2.2	151.7	72.5	2.1
	050DZB	173.9	75.0	2.3	167.0	77.4	2.2	160.0	79.9	2.0
	052DZB	182.1	78.2	2.3	175.2	80.7	2.2	168.3	83.2	2.0
	055DZB	199.5	87.2	2.3	192.6	90.1	2.1	186.0	93.1	2.0
	062DZB	227.0	94.4	2.4	219.2	97.7	2.2	211.8	101.0	2.1
	070DZB	246.5	105.3	2.3	238.1	108.6	2.2	230.2	111.9	2.1
	075DZB	268.2	114.4	2.3	258.1	118.0	2.2	248.2	121.5	2.0
	080DZB	286.1	125.0	2.3	274.6	128.7	2.1	263.0	132.4	2.0
	085DZB	312.8	129.9	2.4	299.9	134.1	2.2	286.8	138.4	2.1
	090DZB	329.3	136.4	2.4	316.4	140.7	2.2	303.4	145.0	2.1
	100DZB	347.7	150.0	2.3	334.0	154.8	2.2	320.1	159.8	2.0
	102DZB	364.2	156.5	2.3	350.4	161.3	2.2	336.7	166.3	2.0
	112DZB	410.2	172.9	2.4	395.8	178.6	2.2	381.8	184.4	2.1
	120DZB	439.0	192.2	2.3	424.6	198.7	2.1	411.1	205.5	2.0
	130DZB	465.1	200.2	2.3	449.4	206.8	2.2	434.8	213.4	2.0
	140DZB	484.2	212.6	2.3	468.1	219.2	2.1	453.0	225.8	2.0
	155DZB	536.4	228.8	2.3	516.2	235.9	2.2	496.5	242.9	2.0
	170DZB	572.2	250.1	2.3	549.1	257.5	2.1	526.0	264.8	2.0
	180DZB	643.1	278.4	2.3	621.0	286.1	2.2	599.4	293.6	2.0
	185DZB	643.1	278.4	2.3	621.0	286.1	2.2	599.4	293.6	2.0
	190DZB	695.2	310.1	2.2	674.2	317.8	2.1	654.3	325.4	2.0
	200DZB	695.2	310.1	2.2	674.2	317.8	2.1	654.3	325.4	2.0

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) Performance shown is based on 0°F Suction Line Loss
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
°C	MODEL	kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
10.0	021SZB	97.1	24.7	3.9	92.0	26.5	3.5	86.9	28.2	3.1
	024SZB	111.7	30.2	3.7	105.6	32.3	3.3	99.4	34.4	2.9
	027SZB	122.9	33.4	3.7	115.7	35.5	3.3	108.7	37.7	2.9
	030SZB	149.6	40.1	3.7	141.2	43.0	3.3	133.2	45.8	2.9
	035SZB	164.7	44.4	3.7	155.7	47.5	3.3	147.0	50.6	2.9
	030DZB	157.6	37.4	4.2	148.5	40.2	3.7	139.1	42.8	3.3
	035DZB	174.3	44.3	3.9	164.7	47.6	3.5	155.0	50.9	3.0
	040DZB	194.3	49.4	3.9	184.1	53.0	3.5	173.8	56.5	3.1
	045DZB	217.6	58.8	3.7	205.4	62.7	3.3	193.4	66.6	2.9
	050DZB	230.3	65.0	3.5	217.1	69.2	3.1	204.1	73.4	2.8
	052DZB	240.9	68.2	3.5	226.7	72.5	3.1	213.1	76.7	2.8
	055DZB	262.2	75.6	3.5	247.3	80.5	3.1	233.0	85.5	2.7
	062DZB	299.2	80.2	3.7	282.5	85.9	3.3	266.4	91.7	2.9
	070DZB	323.8	90.7	3.6	306.2	96.8	3.2	289.1	103.0	2.8
	075DZB	353.9	98.9	3.6	334.8	105.6	3.2	315.8	112.3	2.8
	080DZB	378.5	109.1	3.5	358.0	116.3	3.1	337.5	123.3	2.7
	085DZB	413.9	111.1	3.7	391.6	118.9	3.3	368.9	126.6	2.9
	090DZB	435.2	117.6	3.7	410.8	125.4	3.3	386.9	133.2	2.9
	100DZB	460.5	129.9	3.5	434.2	138.3	3.1	408.2	146.9	2.8
	102DZB	481.8	136.4	3.5	453.4	144.9	3.1	426.2	153.5	2.8
	112DZB	541.5	148.7	3.6	510.4	158.6	3.2	480.6	168.7	2.8
	120DZB	575.9	165.2	3.5	543.8	176.4	3.1	513.2	187.8	2.7
	130DZB	610.6	172.3	3.5	576.9	184.0	3.1	544.5	195.8	2.8
	140DZB	634.7	184.4	3.4	600.1	196.6	3.1	566.8	208.8	2.7
	155DZB	707.9	197.9	3.6	669.5	211.3	3.2	631.5	224.5	2.8
	170DZB	757.0	218.2	3.5	716.1	232.6	3.1	675.0	246.6	2.7
	180DZB	835.8	245.6	3.4	793.3	260.8	3.0	751.6	275.5	2.7
	185DZB	835.8	245.6	3.4	793.3	260.8	3.0	751.6	275.5	2.7
	190DZB	890.8	278.5	3.2	846.9	294.3	2.9	805.3	309.3	2.6
	200DZB	890.8	278.5	3.2	846.9	294.3	2.9	805.3	309.3	2.6

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) Performance shown is based on 0°F Suction Line Loss

PERFORMANCE DATA: With DX Air Handlers

60 Hz

SST °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
10.0	021SZB	80.5	30.3	2.7	77.2	31.3	2.5	73.9	32.3	2.3
	024SZB	91.8	37.0	2.5	88.0	38.3	2.3	84.1	39.7	2.1
	027SZB	100.8	40.3	2.5	97.0	41.7	2.3	93.2	43.0	2.2
	030SZB	124.1	49.3	2.5	119.9	51.1	2.3	115.9	53.0	2.2
	035SZB	137.1	54.3	2.5	132.4	56.2	2.4	128.1	58.0	2.2
	030DZB	127.3	45.6	2.8	121.1	46.9	2.6	114.7	48.0	2.4
	035DZB	143.5	54.6	2.6	137.8	56.4	2.4	132.1	58.2	2.3
	040DZB	161.0	60.6	2.7	154.5	62.6	2.5	147.9	64.6	2.3
	045DZB	179.3	71.3	2.5	172.3	73.7	2.3	165.3	76.0	2.2
	050DZB	188.9	78.6	2.4	181.3	81.3	2.2	173.7	84.1	2.1
	052DZB	197.6	82.0	2.4	190.1	84.7	2.2	182.8	87.5	2.1
	055DZB	217.0	91.7	2.4	209.5	94.9	2.2	202.5	98.2	2.1
	062DZB	248.3	98.7	2.5	239.8	102.3	2.3	231.8	106.0	2.2
	070DZB	269.9	110.3	2.4	260.8	114.0	2.3	252.3	117.7	2.1
	075DZB	293.5	120.1	2.4	282.6	123.9	2.3	271.9	127.8	2.1
	080DZB	312.8	131.5	2.4	300.2	135.5	2.2	287.7	139.5	2.1
	085DZB	341.1	135.9	2.5	326.9	140.6	2.3	312.6	145.3	2.2
	090DZB	358.6	142.6	2.5	344.5	147.3	2.3	330.6	152.1	2.2
	100DZB	377.7	157.3	2.4	362.5	162.7	2.2	347.5	168.2	2.1
	102DZB	395.2	164.0	2.4	380.2	169.5	2.2	365.5	175.0	2.1
	112DZB	447.2	181.0	2.5	431.4	187.3	2.3	416.4	193.8	2.1
	120DZB	479.1	201.9	2.4	463.4	209.2	2.2	448.8	216.7	2.1
	130DZB	508.3	210.2	2.4	491.5	217.4	2.3	475.8	224.8	2.1
	140DZB	529.5	223.4	2.4	512.2	230.7	2.2	496.0	238.0	2.1
	155DZB	587.0	240.1	2.4	565.1	247.9	2.3	543.8	255.5	2.1
	170DZB	625.5	263.0	2.4	600.5	271.1	2.2	575.3	279.0	2.1
	180DZB	702.9	292.7	2.4	679.3	301.0	2.3	656.0	309.3	2.1
	185DZB	702.9	292.7	2.4	679.3	301.0	2.3	656.0	309.3	2.1
	190DZB	758.1	326.8	2.3	736.0	335.2	2.2	714.9	343.6	2.1
	200DZB	758.1	326.8	2.3	736.0	335.2	2.2	714.9	343.6	2.1

NOTES: (1) Interpolation between ratings is permissable but extrapolation is **not**
(2) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(3) Performance shown is based on 0°F Suction Line Loss
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

Application Data: For Split-System Chillers

Split-System Chillers

Split-System Chillers, such as the AUDR-B Condensing Unit and a Remote Cooler module, mounted indoors is a popular application for condensing units.

Such **Split-System Chillers** are popular in Northern climates and for many process applications. The cooler can be mounted inside where the cooler freeze potential is minimized. We offer such **Split-System Chillers** as indicated below with specific coolers for chilled water applications. Glycol can be used for lower temperature applications below 40°F, for freeze protection of the cooler for process applications. Refer to the Split-System Chiller Performance Tables, for capacities and the cooler reference information on which units require oversized coolers for your application. We use the same coolers in our ACDR-B Packaged Chiller line.

Contact our Application Engineering Department if you need modifications of the options shown.

AUDR-B Split-System Chiller operating temperatures, can be applied down to 20°F with glycol and as high as 60°F, for special applications.

Remote Cooler - Freeze Protection

The freeze thermostat is mounted on the Remote Cooler Module and should shut down the unit if a cooler freeze condition should occur.

A water flow switch should be supplied and mounted in the water piping to protect the unit from low or no flow, which could cause cooler freezing.

Remote Cooler Module Mounting

The (RCH) Remote Cooler Module for Split-System Chiller applications can be mounted on the floor, shelf or wall supports, as well as on ceiling hangers of sufficient strength to support the weight.

The (RCH) Remote Cooler Modules are fully assembled, piped and wired including water temperature sensors, freeze protection thermostat, refrigerant hand valve(s), solenoid valve(s), filter-drier(s), sight-glass('s) and TX valve(s).

AUDR-B Evaporator Control Modes of Operation

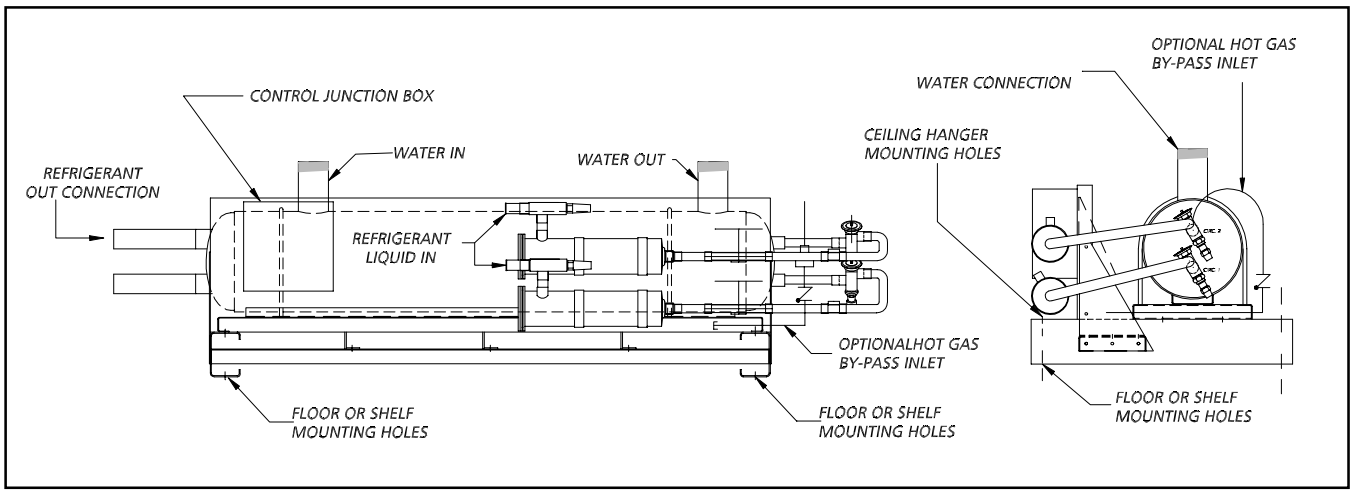
(Select only one out of the three)

Split-System Chiller Application Options:

The ratings in the Catalog Performance Tables for Split-System Chillers require specific RCH Cooler Modules listed below:

1. **RCH1 – Standard Cooler Module** - for 44°F (6.5°C) leaving water temperature.
2. **RCH2 – Oversized Cooler Module** - for 42°F (5.5°C) leaving water temperature, required for water applications on Models AUDRB035S, 090D and 112D only.
3. **RCH3 – Oversized Cooler Module** - for 40°F (4.5°C) leaving water temperature, required for water applications on all AUDR-B models except AUDRB021S, 024S, 185D and 200D.

Typical Dual Circuit - Remote Cooler Module



TYPICAL SEQUENCE OF OPERATION

The following sequence of operation describes a two-compressor reciprocating packaged chiller. Operation is very similar for a one or four compressor unit.

For initial start-up, the following conditions must be met.

- All power supplied to the package energized for 24 hours.
- Control power switch on for at least 5 minutes.
- Compressor switches on.
- All safety conditions satisfied.
- Reset pressed on the microcomputer keypad.
- Chilled water pump running and chilled water flow switch made.
- Customer control contact closed.
- Leaving chilled water temperature higher than water temperature setpoint plus a deadband setpoint called "Control Zone +".

After all above conditions are met, the microcomputer will call for compressor #1 to start and the unloader to be energized. When feedback to the compressor #1 sensor input confirms that the compressor has started, the liquid line solenoid #1 is energized. The first stage of capacity is now on-line.

As discharge pressure of compressor #1 rises, fan #1 turns ON at the "Fan Stage 1 ON" setpoint. If discharge pressure continues to rise, the subsequent odd-numbered fans will stage ON in increments of the "Condenser Differential" setpoint. For example, if the "Fan Stage 1 ON' is 190 psig and the "Condenser Differential" setpoint is 20, the stage on points will be 190, 210, 230, etc. The microcomputer may automatically increase these settings if short cycling of fans is detected.

If discharge pressure falls, the odd-numbered fans will stage OFF at the "Fan Stage 1 OFF" setpoint plus corresponding number of "Condenser Differential" setpoints. For example, if the "Fan Stage 1 OFF" is 140 psig and the "Condenser Differential" setpoint is 20, the stage off points will be 140, 160, 180, etc.

If leaving water temperature is falling at a rate of approximately one degree per minute, no more stages of capacity will be added. However, if water temperature is not falling rapidly and if leaving water temperature is greater than the temperature setpoint plus "Control Zone +" setpoint, compressor #1 unloader will be de-energized. Compressor #1 will now be fully loaded.

After a minimum interstage delay of approximately one minute, and if leaving water temperature is not falling rapidly, and if leaving water temperature is greater than water temperature setpoint plus "Control Zone +" setpoint, compressor #2 will start. Compressor #1 will then unload. When feedback to the compressor #2 sensor input confirms that the compressor has started, the liquid line solenoid #2 is energized. The third stage of capacity is now on-line.

As discharge pressure of compressor #2 rises, the even numbered fans are activated according to the fan stage setpoints as described above for circuit #1 fans.

The fourth stage of machine capacity, which is when compressor #1 loads up again, will occur when the following conditions are met:

1. Minimum interstage time delay on increasing load of approximately 1 minute has expired.
2. Leaving water temperature is not falling rapidly.
3. Leaving water temperature is greater than the water temperature setpoint plus "Control Zone +".

The machine is now operating at full capacity.

As the applied load decreases and return water temperature falls below the water temperature setpoint minus a deadband setpoint called "Control Zone -" stage 4 is turned off. Compressor #1 unloads.

If return water temperature continues to fall below water temperature setpoint minus "Control Zone -" setpoint, stage 3 is turned off. Liquid line solenoid #2 is turned off, and compressor #1 is loaded up to 100%. When compressor #2 suction pressure falls below the pumpdown-cutout setpoint, compressor #2 is turned off, and the even-numbered fans are turned off. The unit is now at 50% capacity. Note that if there is more than one compressor on a refrigerant circuit, only the last compressor to shut down will perform the pumpdown.

Stages 2 and 1 shut down in a similar manner to stages 4 and 3 mentioned above.

When a refrigerant circuit is in standby mode, pumpdown of the condensing unit is maintained. If suction pressure rises above pumpdown-cutin setpoint, a compressor will turn on with the liquid line solenoid closed. When suction pressure falls below pumpdown-cutout setpoint, the compressor will shut down.

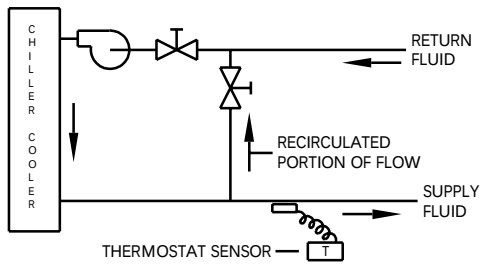
Two proactive control features included in the microcomputer are low suction and high discharge pressure unload. Compressor #1 will be unloaded if circuit #1 discharge pressure exceeds the high pressure unload setpoint or if suction pressure from either refrigerant circuit approaches the low pressure trip setpoint. If there is more than one compressor on a refrigerant circuit, one of the compressors will be shut down under one of these "near-fault" conditions.

OPTIONAL REMOTE DX COOLER MODULE

Cooler Design Data

1. ***Maximum*** - Leaving chilled fluid temperature (LCFT) is 60°F (18°C). The unit can start and pull down with up to 80°F (27°C) entering-water temperature. For sustained operation, it is recommended that the entering water temperature not exceed 70°F (21°C).
2. ***Minimum*** - LCFT is 42°F (5.5°C) for all models except AUDR-B 035D, 090D, and 112D for *water applications with standard coolers*. Oversized coolers RCH2 are required for 42°F (5.5°C) water on models AUDR-B 035D, 090D and 112D. Oversized coolers RCH3 are available for 40°F (4.4°C) water for most models for chilled *water* applications. Medium temperature glycol application selections from 20°F (6.6°C) to 39°F (3.9°C) are available from the factory.
3. Minimum/Maximum Flow Rates and Vessel Fluid Volume - refer to Physical Specifications.
4. Pressure Drop Data - refer to Figure 43 and glycol correction factors, Tables 41A and 41B.
5. Wide Range ΔT - Low Flow Applications
   a. Multiple smaller chillers may be applied in series, each providing a portion of the design temperature range of roughly 10°F (5.5°C) each.
   b. Special cooler baffling may be provided from the factory for applications from 12.5°F to 20°F (7°C to 11°C) chiller fluid ranges.
   c. Chilled fluid may be recirculated through the cooler as shown below to allow the chiller to operate with acceptable flow rates and temperature ranges (Figure 38A).

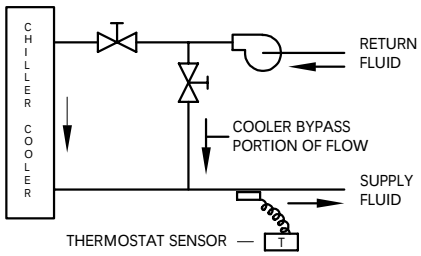
Figure 38A



The mixed fluid temperature range through the cooler for units with standard coolers, should not be less than 7.5°F (4.2°C) at full load.

6. Narrow Range ΔT - High Flow Applications
   a. Special cooler baffling is available from the factory for 5°F to 7.5°F (2.7°C to 4.2°C) ΔT applications.
   b. For extra-narrow range ΔT applications a partial cooler bypass piping and valve configuration can be used as shown below. This permits a higher ΔT and lower ΔP (pressure drop) through the cooler (Figure 38B).

Figure 38B



The fluid mixes after the cooler.

Chilled Fluid Loop Volume (CFLV)

Careful consideration needs to be given to the "Chilled Fluid Loop Volume" (CFLV) or system inertia to maintain an acceptable leaving fluid temperature.

In close-coupled systems as the compressor starts, loads, unloads and stops, the leaving fluid temperature will shift up and down 2°F to 4°F (1.1°C to 2.2°C) per step of capacity control. The 5-minute anti-recycle timer will prevent the compressor from starting for up to 5 minutes and will further complicate the leaving fluid temperature shift.

Air Conditioning Applications
The chilled fluid loop volume must equal or exceed 3 gallons per nominal ton of cooling (3.25 L per kW).

Process & Special Air Conditioning Applications
Where leaving fluid temperature is often more critical, the chilled fluid loop volume should be increased to 6 to 10 gallons per ton minimum (6.5 to 10.8 L per KW).

Table 39A **Minimum Chilled Fluid Loop Volume***

	Air Conditioning Applications		Process Applications				
AUDR-B Model	**Gallons**	**Liters**	**Gallons**	**Liters**		**Gallons**	**Liters**
021S	63	238	126	477	To	210	795
024S	72	272	144	545	To	240	908
027S	81	307	162	613	To	270	1022
030S	90	340	180	681	To	300	1135
035S	105	397	210	795	To	350	1325
030D	90	340	180	681	To	300	1135
035D	105	397	210	795	To	350	1325
040D	120	454	180	681	To	400	1514
045D	135	511	270	1022	To	450	1703
050D	150	568	300	1135	To	500	1892
052D	156	590	316	1196	To	520	1968
055D	165	624	330	1249	To	550	2082
062D	186	704	372	1408	To	620	2347
070D	210	795	420	1590	To	700	2650
075D	225	852	450	1703	To	750	2839
080D	240	908	480	1817	To	800	3028
085D	255	965	510	1930	To	850	3217
090D	270	1022	540	2044	To	900	3406
100D	300	1135	600	2271	To	1000	3785
102D	306	1158	612	2316	To	1020	3861
112D	336	1272	672	2543	To	1120	4239
120D	360	1363	720	2725	To	1200	4542
130D	390	1476	780	2952	To	1300	4920
140D	420	1590	840	3179	To	1400	5299
155D	465	1760	930	3520	To	1550	5867
170D	510	1930	1020	3861	To	1700	6434
180D	540	2044	1080	4088	To	1800	6813
185D	555	2101	1110	4201	To	1850	7002
190D	570	2157	1140	4315	To	1900	7191
200D	600	2271	1200	4542	To	2000	7570

*Values calculated for ARI Conditions of Service (C.O.S.)

Type of Application	Gal/Ton	L/KW
Normal Air Conditioning	3	3.25
Process Cooling	6 - 10	6.5 - 10.8

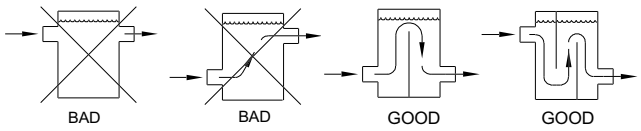
Gallons = Gal/Ton x ARI Capacity in Tons
Liters = L/KW x ARI capacity in KW

For applications other than ARI C.O.S., calculate the system volume based on the adjusted or corrected unit capacity.

Tanks for System Volume Enhancement

It may be necessary to install a tank in the system to provide sufficient system fluid volume. The tank should be baffled and piped for proper fluid mixing to prevent stratification (Figure 39).

Figure 39



Fouling Factors

The fouling factors used to calculate performance data per ARI Standard 550/590-98 is 0.0001 ft.^{2} • Hr • F/BTU (.044 m^2 • kW). As vessel fouling is increased, both unit capacity and compressor power change. Standard ratings should be corrected using the following multipliers (Table 39B):

Table 39B - Fouling Factors

Fouling Factor		Cooler	
Eng.	S.I.	Cap.	Power
0.00010	0.0176	1.000	1.000
0.00025	0.0440	0.993	0.998
0.00050	0.0880	0.981	0.994
0.00100	0.1760	0.958	0.986

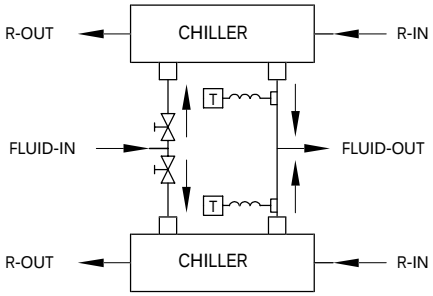
The **AUDR-B** performance tables are based on ARI Standard 550/590-98 Conditions of Service (C.O.S.) with a 10°F (5.5°C) range and 0.0001 (.044-SI) FF on the cooler.

Multiple Chillers Per Chilled Water System

1. Where the load is greater than one **AUDR-B Split System Chiller** can supply or where standby capacity is required or the load profile dictates, multiple chillers may be piped in parallel. Units of equal size help to ensure fluid flow balance, but balancing valves ensure balanced flows even with dissimilar chillers. Temperature controller sensors may or may not need to be moved to the common fluid piping depending on the specific application.

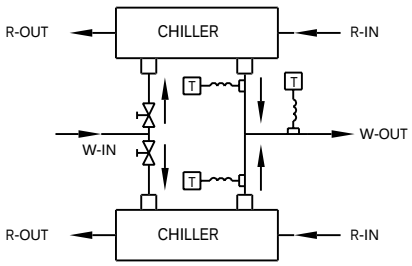
2. Parallel Chiller Applications ***METHOD A*** (Figure 40A). Both units operate simultaneously modulating with load variations. Each unit operates independently sensing its own return water temperature. The set point of each thermostat is set to maintain the desired loading scheme.

Figure 40A



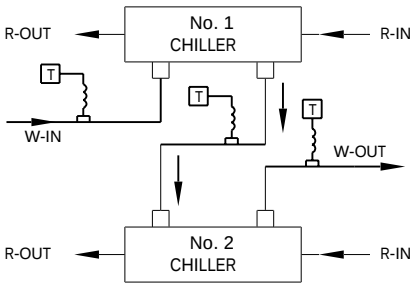
3. Parallel Chiller Applications ***METHOD B*** (Figure 40B) Install the units the same as in METHOD A, but a third thermostat needs to be added to the common leaving fluid piping. This thermostat will be set to disable the second unit when the load drops below 50%. When this condition is reached, the leaving mixed fluid temperature will rise, causing the leaving fluid temperature to rise and the first unit will load up. The disabled unit is sequenced to start again before full system load temperature is reached. The advantage of METHOD B is a better part load efficiency, but it will not provide as stable an operation as METHOD A.

Figure 40B



4. Series Chiller Applications (Figure 40C)
Where a large temperature range is required (over 25°F [13.9°C]), the chiller may be piped in series. In this case the units are controlled independently. The load is progressive by temperature so the chiller selections are critical.

Figure 40C



Oversizing Chillers

Oversizing of chillers more than 5-10% is not recommended. Oversizing causes energy inefficiency and shortened compressor life due to excessive compressor cycling. Larger future load requirements may cause temporary oversizing of equipment which will require careful unit selection. It may be better to properly size for the present load and add another unit later for future expansion. It is also recommended using multiple units where operation at minimum load is critical. Fully loaded equipment operates better and more efficiently than large equipment running at or near minimum capacity.

Hot gas bypass should not be a means to allow oversizing of chillers. Hot gas bypass should only be used where the equipment is sized properly for full load but the load turn down is less than the minimum unloading step available. See Page 6 for estimated hot gas bypass turndown.

Part-wind Start

Part-wind start is not normally required on **AUDR-B**'s due to the low inrush current requirements of small HP compressors but is available as an option, if required. See Electrical Data, Pages 84, 86 and 88.

Sound and Vibration

AUDR-B compressors are solid mounted to the frame to absorb sound and vibration in the mass of the unit. Spring mounted compressors are more prone to line breakage and refrigerant leaks. Compressor discharge chambers are built into the heads of the compressors as well as discharge mufflers are supplied standard for smooth, quiet operation. Unit isolation prevents any remaining sound or vibration from entering the building structure, piping or electrical service.

Water (Fluid) Strainers

It is recommended that 40-mesh strainers be installed in the fluid piping as close to unit cooler as possible.

Glycol Freeze Protection

If the chiller or fluid piping may be exposed to temperatures below freezing, glycol protection is recommended. The recommended protection is 15°F (8.3°C) below the minimum ambient temperature. Use only glycol solutions approved for heat exchanger duty. The use of automotive anti-freeze is not recommended because they have short-lived inhibitors and fouling of the vessels will occur. If the equipment is exposed to freezing temperature and not being used, the vessels and piping should be drained.

Cooler heaters are provided for protection down to -20°F (-29°C) minimum ambient but piping must be protected. A separate 115V service is required for this protection.

If the equipment is being used for operating conditions below the water rated vessel capability, glycol should be used to prevent freeze damage. The freeze protection level should be 20°F (11°C) lower than the leaving brine temperature. The use of glycol causes a performance derate as shown below in Table 41A for ethylene glycol and Table 41B for propylene glycol and needs to be included in the unit selection procedure.

Table 41A

Ethylene Glycol

% E.G.	FREEZE POINT		C1 CAPACITY FACTOR	K1 kW FACTOR	G1 FLOW RATE	P1 P.D. FACTOR
	°F	°C				
10	26.2	-3.2	0.995	0.998	1.019	1.050
15	22.4	-5.3	0.991	0.997	1.030	1.083
20	17.8	-7.9	0.988	0.996	1.044	1.121
25	12.6	-10.8	0.984	0.995	1.060	1.170
30	6.7	-14.1	0.981	0.994	1.077	1.219
35	0.0	-17.8	0.977	0.992	1.097	12.75
40	-8.0	-25.8	0.973	0.991	1.116	1.331
45	-17.5	-27.5	0.968	0.990	1.138	1.398
50	-28.9	-33.8	0.964	0.989	1.161	1.466

Table 41B

Propylene Glycol

% P.G.	FREEZE POINT		C2 CAPACITY FACTOR	K2 kW FACTOR	G2 FLOW RATE	P2 P.D. FACTOR
	°F	°C				
10	26.1	-3.3	0.988	0.994	1.005	1.019
15	22.8	-5.1	0.984	0.992	1.008	1.031
20	19.1	-7.2	0.978	0.990	1.010	1.051
25	14.5	-9.7	0.970	0.988	1.015	1.081
30	8.9	-12.8	0.962	0.986	1.021	1.120
35	2.1	-16.6	0.952	0.981	1.033	1.163
40	-6.4	-21.3	0.943	0.978	1.043	1.213
45	-16.6	-27.0	0.933	0.975	1.057	1.269
50	-28.9	-33.8	0.924	0.972	1.073	1.326

EXAMPLE

Select an air cooled packaged chiller for the following conditions of service:

50 Tons (175 kWo) at 55°F (13°C) entering, 45°F (7°C) leaving chilled water. Design ambient is 95°F (35°C). Minimum operating ambient is 50°F (10°C). Altitude is 6000 feet (1800 meters). Evaporator fouling is .00025 (0.044). Electrical characteristics are 460/3/60.

Step 1 - Unit Selection

For 6000 feet (1800 meters) elevation, divide the required tonnage by the altitude correction factor from Table 42A.

$$\frac{50}{.97} = 51.5 \text{ Tons} \qquad \frac{175}{.97} = 180.4 \text{ kWo}$$

To correct for evaporator fouling, consult Table 42B. In this example, the fouling factor is .00025 which has a capacity factor of 0.992 and a kW factor of 0.997, so the capacity correction is as follows:

$$\frac{51.5 \text{ Tons}}{.992} = 51.9 \text{ Tons} \qquad \frac{180.4 \text{ kWo}}{.992} = 181.8 \text{ kWo}$$

Entering the tables on page 46 (56), we see that an AUDR-B 050D for water at sea level will do 52.0 (188.6 kWo) tons drawing 60.3 compressor kW (60.0 compressor kW).

The unit will do the following, when corrected for altitude fouling:

Capacity 52.0 x .992 x .97 = 50.0 Tons
(Capacity 188.6 x .992 x .99 = 185.2 kWo)

which exceeds the original requirement.

Compressor kW needs to be adjusted from Table 42B for 0.00025 (0.044) fouling as follows:

56.5 kW x .997 = 56.3 kW
(60.0 kW x .997 = 59.8 kW)

Step 2 - Cooler Flow and Pressure Drop

$$\text{Water GPM} = \frac{\text{Tons (water)} \times 24}{\text{Cooling Range}} = \frac{50 \times 24}{10} = 120 \text{ GPM}$$

$$\text{(Water Flow Rate} = \frac{\text{kWo (water)}}{4.187 \times \text{Range}} = \frac{175 \text{ kWo}}{4.187 \times 6} = 6.97 \text{ Lit./Sec.)}$$

Referring to pressure drop curve #9 on page 43 for the evaporator pressure drop, we see a 8.5 feet of water (22.5 kPa) pressure drop for 120 GPM (6.97 liters/sec.) of water.

TABLE 42A

Elevation above Sea Level (ft.) (m)	Capacity Factor	kW Correction Factor
0	1.00	1.00
2000 (600)	0.99	1.01
4000 (1200)	0.98	1.02
6000 (1800)	0.97	1.03

TABLE 42B

Evaporator Fouling Factor hr-ft- F/BTU (M^2 °C kW^{-1})	Capacity Factor	kW Factor
.00010 (0.0176)	1.000	1.000
.00025 (0.0440)	0.993	0.998
.00050 (0.0880)	0.981	0.994
.00100 (0.1760)	0.958	0.986

TABLE 42C

Unit Model Size	Cooler Curve No. for Table 43		
	Std RCH1 44°F (7°C)	RCH2 42°F (5.5°C)	RCH3 40°F (4.5°C)
021S	1	1	1
024S	1	1	1
027S	1	1	23
030S	2	2	24
035S	3	3	24
030D	25	25	26
035D	25	6	8
040D	6	6	8
045D	7	7	11
050D	9	9	11
052D	9	9	11
055D	9	9	11
062D	10	10	28
070D	10	10	28
075D	12	12	28
080D	12	12	28
085D	13	13	27
090D	13	14	29
100D	14	14	29
102D	14	14	29
112D	14	15	30
120D	16	16	21
130D	16	16	21
140D	16	16	21
155D	18	18	31
170D	20	20	31
180D	20	20	22
185D	22	22	22
190D	20	20	22
200D	22	22	22

OPTIONAL—REMOTE COOLER MODULE: WATER SIDE PRESSURE DROP • •

Figure 43

ENGLISH I.P. AND METRIC S.I. UNITS

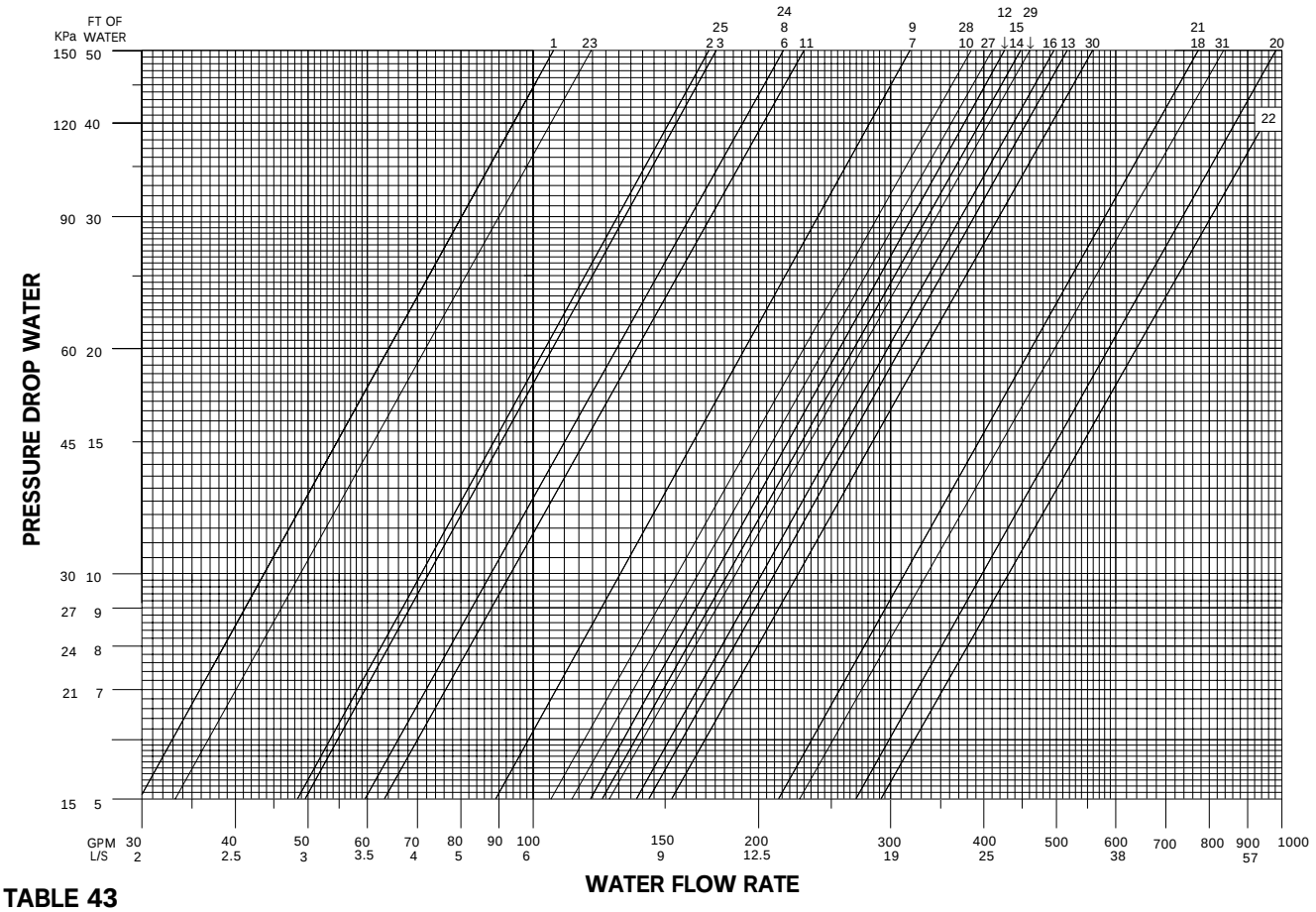


TABLE 43

Curve No.	Cooler		English I.P. Units		Metric S.I. Units	
	Model	*Conn. Size	Minimum GPM	Maximum GPM	Min. Lit./Sec.	Max. Lit./Sec.
1	CHS007601A	3" NPTE	37	101	2.34	6.39
2	CHS007601B	3" NPTE	50	164	3.16	10.38
3	CHS008601A	3" NPTE	56	168	3.54	10.63
23	CHS008602A	3"NPTE	42	114	2.66	7.21
24	CHS010601A	4" NPTE	62	205	3.92	12.97
25	CHD008601A	3" NPTE	56	168	3.54	10.63
6	CHD010601A	4" NPTE	62	205	3.92	12.97
26	CHD010602A	4" NPTE	47	116	2.97	7.34
7	CHD010601B	4" NPTE	78	315	4.93	19.23
8	CHD011601A	4" NPTE	69	206	4.37	13.03
9	CHD011601B	4" NPTE	86	304	5.44	19.23
10	CHD012601B	4" NPTE	94	367	5.94	23.22
11	CHD013601A	4" NPTE	80	220	5.06	13.92
12	CHD013601B	4" NPTE	101	407	6.39	25.75
13	EXD12102J07	4" VIC	158	444	10.00	28.09
14	EXD12122J09	4" VIC	153	442	9.68	27.96
15	EXD14102J09	5" VIC	140	440	8.86	27.84
16	EXD14122J09	5" VIC	169	484	10.69	30.62
27	EXD14122J11	5" VIC	140	391	8.86	24.74
28	EXD16092J11	6" VIC	116	366	7.34	23.16
18	EXD16122J07	6" VIC	236	697	14.93	44.10
29	EXD16122J11	6" VIC	159	443	10.06	28.03
20	EXD18122J07	8" VIC	267	1060	16.89	67.07
21	EXD18122J09	8" VIC	213	740	13.48	46.82
30	EXD18122J11	8" VIC	177	604	11.20	38.22
22	EXD20122J07	10" VIC	298	816	18.54	51.63
31	EXD20122J09	10" VIC	237	800	14.99	50.62

*Non-metric compliance

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE											
		85°F				95°F				105°F			
°F	MODEL	TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
40	021SZB	21.1	19.6	11.1	12.8	19.8	21.2	9.7	12.1	18.4	22.6	8.6	11.5
	024SZB	24.2	24.1	10.6	12.2	22.6	25.8	9.4	11.5	21.1	27.6	8.2	11.0
	**027SZB	27.8	27.1	11.0	13.1	26.0	29.0	9.7	12.4	24.2	30.8	8.5	11.7
	**030SZB	33.0	31.9	10.8	12.3	30.8	34.3	9.4	11.7	28.7	36.8	8.3	11.0
	**035SZB	36.0	35.4	10.8	12.3	33.6	38.1	9.4	11.7	31.3	40.8	8.2	11.0
	**030DZB	32.6	29.8	11.6	12.9	30.2	32.2	10.1	13.5	27.9	34.4	8.7	12.7
	**035DZB	38.4	36.3	11.5	14.2	35.8	39.2	10.0	13.3	33.2	41.9	8.7	12.6
	**040DZB	42.1	39.2	11.1	12.2	39.5	42.3	9.7	12.7	36.8	45.2	8.6	12.1
	**045DZB	49.0	47.2	11.0	12.3	45.8	50.6	9.6	12.9	42.6	53.9	8.5	12.3
	**050DZB	52.4	51.3	10.9	13.1	48.9	54.9	9.6	12.4	45.5	58.5	8.4	11.8
	**052DZB	54.9	55.0	10.7	12.5	51.4	58.6	9.5	11.7	47.7	62.2	8.3	11.0
	**055DZB	58.9	60.6	10.5	11.8	55.0	64.8	9.3	11.0	51.3	68.9	8.2	11.0
	**062DZB	66.1	63.9	10.8	12.4	61.5	68.6	9.4	11.5	56.9	73.3	8.2	11.2
	**070DZB	72.3	72.2	10.6	12.0	67.1	77.4	9.2	11.6	62.1	82.6	8.1	10.9
	**075DZB	78.3	78.9	10.6	12.0	72.8	84.6	9.3	11.8	67.4	90.1	8.1	10.9
	**080DZB	84.0	87.0	10.4	11.8	78.2	93.0	9.2	10.9	72.4	98.7	8.0	10.2
	**085DZB	90.5	88.1	10.8	12.6	84.5	94.6	9.4	11.8	78.5	100.8	8.3	11.1
	**090DZB	98.1	94.2	11.0	12.8	91.5	100.9	9.7	12.5	84.9	107.4	8.5	11.9
	**100DZB	104.3	104.3	10.7	12.6	97.2	111.4	9.4	11.8	90.2	118.4	8.3	11.7
	**102DZB	110.0	109.9	10.8	12.6	102.7	117.2	9.5	11.8	95.3	124.3	8.3	11.1
	**112DZB	122.1	119.0	10.9	13.3	113.7	127.5	9.5	12.6	105.4	135.8	8.3	12.0
	**120DZB	130.1	132.0	10.5	13.1	121.1	141.4	9.2	12.4	112.4	150.7	8.1	11.8
	**130DZB	136.7	138.1	10.6	13.2	127.2	148.2	9.3	12.5	118.0	158.0	8.1	11.8
	**140DZB	143.2	143.8	10.5	12.9	133.3	154.4	9.2	12.2	123.6	164.8	8.1	11.6
	**155DZB	159.8	159.2	10.7	13.3	149.0	171.0	9.4	12.6	138.4	182.3	8.2	11.9
	**170DZB	171.4	175.6	10.6	12.9	160.1	188.1	9.3	12.1	148.6	200.0	8.1	11.5
	**180DZB	186.9	196.0	10.3	12.6	174.8	209.0	9.1	11.9	162.8	221.2	8.0	11.3
	185DZB	186.9	196.0	10.3	12.6	174.8	209.0	9.1	11.9	162.8	221.2	8.0	11.3
	**190DZB	201.6	222.1	9.9	12.1	188.7	235.2	8.8	11.5	176.2	247.4	7.8	11.0
	200DZB	201.6	222.1	9.9	12.1	188.7	235.2	8.8	11.5	176.2	247.4	7.8	11.0
42	021SZB	21.9	19.9	11.4	13.2	20.5	21.5	10.0	12.5	19.2	23.0	8.8	11.8
	024SZB	25.1	24.5	10.9	12.5	23.5	26.3	9.6	11.8	21.9	28.1	8.4	11.3
	027SZB	28.0	27.2	11.1	13.3	26.2	29.1	9.7	12.6	24.4	30.9	8.6	11.9
	030SZB	32.2	31.6	10.6	12.3	30.1	34.0	9.3	11.6	28.0	36.4	8.2	11.0
	035SZB	36.3	35.5	10.8	12.5	33.9	38.3	9.5	11.8	31.6	41.0	8.3	11.1
	030DZB	32.6	29.8	11.7	12.9	30.3	32.2	10.1	13.6	28.0	34.5	8.8	12.8
	*035DZB	38.8	36.5	11.6	14.3	36.2	39.4	10.1	13.4	33.6	42.1	8.8	12.7
	040DZB	42.4	39.3	11.1	12.2	39.8	42.4	9.8	12.8	37.1	45.4	8.6	12.1
	045DZB	47.8	46.7	10.8	12.2	44.8	50.1	9.5	12.8	41.7	53.3	8.4	12.1
	050DZB	52.8	51.5	10.9	13.2	49.3	55.2	9.6	12.5	45.9	58.8	8.5	11.9
	052DZB	55.3	55.1	10.8	12.5	51.8	58.8	9.5	11.8	48.1	62.5	8.4	11.1
	055DZB	59.1	60.8	10.6	11.8	55.3	65.0	9.3	11.0	51.7	69.2	8.2	11.1
	062DZB	65.4	63.5	10.7	12.3	61.0	68.4	9.4	11.4	56.7	73.2	8.2	11.2
	070DZB	70.9	71.6	10.5	11.9	66.1	76.9	9.2	11.5	61.5	82.2	8.0	10.9
	075DZB	77.7	78.7	10.6	12.0	72.6	84.5	9.3	11.7	67.4	90.1	8.1	10.9
	080DZB	82.9	86.5	10.4	11.7	77.5	92.6	9.1	10.9	72.1	98.5	8.0	10.2
	085DZB	89.4	87.7	10.7	12.6	83.4	94.0	9.4	11.7	77.3	100.1	8.2	11.0
	*090DZB	97.3	93.9	10.9	12.8	90.9	100.6	9.6	12.5	84.5	107.1	8.5	11.9
	100DZB	103.1	103.8	10.6	12.5	96.3	110.9	9.3	11.7	89.5	117.9	8.2	11.7
	102DZB	108.7	109.3	10.7	12.5	101.6	116.6	9.4	11.8	94.4	123.7	8.3	11.0
	*112DZB	119.4	117.8	10.7	13.1	111.2	126.2	9.4	12.5	103.1	134.3	8.2	11.8
	120DZB	129.1	131.6	10.5	13.0	120.4	141.1	9.2	12.4	112.0	150.5	8.1	11.8
	130DZB	135.2	137.5	10.6	13.1	126.2	147.6	9.3	12.4	117.3	157.6	8.1	11.8
	140DZB	141.3	143.0	10.5	12.8	131.9	153.7	9.2	12.2	122.7	164.2	8.0	11.5
	155DZB	155.6	157.3	10.6	13.2	145.4	169.1	9.3	12.4	135.2	180.3	8.1	11.8
	170DZB	171.2	175.5	10.6	12.9	159.9	188.0	9.3	12.1	148.5	200.0	8.1	11.5
	180DZB	186.8	196.0	10.3	12.6	174.8	209.0	9.1	11.9	162.9	221.3	8.0	11.3
	185DZB	194.1	199.5	10.5	12.9	181.6	213.0	9.3	12.1	169.2	225.7	8.2	11.5
	190DZB	200.9	221.8	9.9	12.1	188.2	235.0	8.8	11.5	175.8	247.3	7.8	11.0
	200DZB	208.4	226.4	10.1	12.3	196.0	240.0	9.0	11.7	183.2	252.6	8.0	11.2

NOTES:
(1) Double asterisk (**) indicates ratings with RCH3 oversized evaporator for 40°F LWT
(2) Asterisk (*) indicates ratings with RCH2 oversized evaporator for 42°F LWT
(3) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(4) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(5) Interpolation between ratings is permissable but extrapolation is **not**
(6) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE											
		115°F				120°F (See Note 7)				125°F (See Note 7)			
		TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
40	021SZB	17.1	24.1	7.5	10.9	16.4	24.8	7.0	10.5	15.7	25.4	6.6	10.2
	024SZB	19.5	29.3	7.2	10.4	18.8	30.2	6.7	10.1	18.0	31.1	6.3	9.9
	**027SZB	22.4	32.6	7.5	11.1	21.5	33.5	7.0	10.8	20.6	34.4	6.6	10.6
	**030SZB	26.7	39.2	7.3	10.4	—	—	—	—	—	—	—	—
	**035SZB	29.1	43.4	7.2	10.4	28.1	44.7	6.8	10.2	27.1	45.9	6.4	9.9
	**030DZB	25.5	36.5	7.6	12.0	24.3	37.4	7.1	11.7	23.0	38.3	6.6	11.3
	**035DZB	30.6	44.4	7.6	11.9	29.3	45.6	7.1	11.6	—	—	—	—
	**040DZB	34.0	48.0	7.5	11.5	32.6	49.4	7.0	11.2	31.2	50.8	6.6	10.9
	**045DZB	39.4	57.1	7.4	11.7	37.7	58.7	7.0	11.4	36.1	60.3	6.5	11.1
	**050DZB	42.0	62.0	7.4	11.2	40.3	63.8	6.9	10.9	38.6	65.6	6.4	10.6
	**052DZB	44.1	65.7	7.3	10.9	42.3	67.5	6.9	10.6	40.5	69.3	6.4	10.3
	**055DZB	47.7	73.0	7.2	10.5	45.9	75.0	6.8	10.2	—	—	—	—
	**062DZB	52.6	77.9	7.2	10.6	50.6	80.1	6.8	10.3	48.7	82.4	6.3	10.1
	**070DZB	57.4	87.4	7.1	10.3	55.1	89.8	6.7	10.1	53.0	92.0	6.3	9.9
	**075DZB	62.1	95.2	7.1	10.7	59.5	97.7	6.6	10.4	56.9	100.0	6.2	10.0
	**080DZB	66.6	104.1	7.0	9.5	63.6	106.6	6.6	9.8	60.6	109.1	6.1	9.5
	**085DZB	72.3	106.8	7.3	11.2	69.2	109.8	6.8	10.9	66.0	112.7	6.3	10.7
	**090DZB	78.3	113.6	7.4	11.3	74.9	116.6	6.9	11.1	71.5	119.5	6.5	10.8
	**100DZB	83.1	125.2	7.2	11.2	79.5	128.6	6.7	11.0	76.0	132.0	6.3	10.7
	**102DZB	87.8	131.2	7.3	11.3	84.1	134.6	6.8	11.0	80.3	137.9	6.4	10.8
	**112DZB	97.5	144.0	7.3	11.4	93.7	148.0	6.9	11.1	89.9	152.0	6.4	11.2
	**120DZB	104.2	159.9	7.1	11.3	100.4	164.5	6.7	11.0	96.9	169.1	6.3	10.7
	**130DZB	109.3	167.5	7.1	11.2	105.2	172.1	6.7	11.0	101.4	176.7	6.3	10.7
	**140DZB	114.5	174.7	7.1	11.0	110.1	179.4	6.7	10.7	106.0	184.0	6.3	10.9
	**155DZB	127.9	193.2	7.2	11.4	122.7	198.4	6.8	11.1	117.7	203.4	6.3	10.9
	**170DZB	136.9	211.4	7.1	10.9	131.1	216.8	6.7	11.1	125.1	222.0	6.2	10.8
	**180DZB	151.0	232.7	7.1	10.7	145.1	238.2	6.7	10.5	139.3	243.4	6.3	10.3
	185DZB	151.0	232.7	7.1	10.7	145.1	238.2	6.7	10.5	139.3	243.4	6.3	10.3
	**190DZB	164.2	258.8	7.0	10.5	158.4	264.1	6.6	10.3	152.7	269.2	6.3	10.1
	200DZB	164.2	258.8	7.0	10.5	158.4	264.1	6.6	10.3	152.7	269.2	6.3	10.1
42	021SZB	17.7	24.5	7.7	11.2	17.0	25.2	7.2	10.8	16.3	25.9	6.7	10.5
	024SZB	20.3	29.9	7.4	10.7	19.5	30.8	6.9	10.4	18.7	31.8	6.4	10.1
	027SZB	22.6	32.8	7.5	11.3	21.7	33.7	7.1	11.0	20.8	34.6	6.6	10.7
	030SZB	26.1	38.8	7.2	10.4	25.2	40.0	6.7	10.2	24.3	41.2	6.3	9.9
	035SZB	29.4	43.6	7.3	10.6	28.3	44.9	6.8	10.3	27.3	46.2	6.4	10.0
	030DZB	25.6	36.6	7.6	12.0	24.4	37.5	7.1	11.7	—	—	—	—
	*035DZB	31.0	44.7	7.7	12.0	29.7	45.9	7.2	11.7	28.4	47.0	6.7	11.4
	040DZB	34.3	48.2	7.5	11.6	32.9	49.6	7.1	11.2	31.5	51.0	6.6	11.0
	045DZB	38.6	56.5	7.4	11.5	37.0	58.1	6.9	11.3	35.4	59.6	6.4	11.0
	050DZB	42.5	62.4	7.4	11.3	40.8	64.3	6.9	11.0	39.1	66.1	6.5	10.7
	052DZB	44.5	66.1	7.4	11.0	42.8	68.0	6.9	10.7	41.0	69.8	6.5	10.4
	055DZB	48.1	73.4	7.2	10.5	46.4	75.5	6.8	10.2	—	—	—	—
	062DZB	52.7	77.9	7.2	10.6	50.8	80.3	6.8	10.3	49.0	82.7	6.4	10.1
	070DZB	57.1	87.2	7.1	10.3	55.0	89.7	6.6	10.1	53.0	92.0	6.3	9.9
	075DZB	62.4	95.5	7.1	10.7	59.9	98.1	6.7	10.4	57.5	100.6	6.3	10.1
	080DZB	66.6	104.1	7.0	9.5	63.8	106.8	6.6	9.8	61.0	109.5	6.1	9.5
	085DZB	71.2	105.9	7.2	11.1	68.0	108.8	6.7	10.8	—	—	—	—
	*090DZB	77.9	113.3	7.4	11.3	74.6	116.4	6.9	11.1	71.2	119.3	6.5	10.8
	100DZB	82.6	124.8	7.2	11.2	79.1	128.2	6.7	10.9	75.6	131.6	6.3	10.7
	102DZB	87.1	130.7	7.3	11.2	83.4	134.1	6.8	11.0	79.7	137.4	6.4	10.8
	*112DZB	95.2	142.2	7.2	11.2	91.4	146.0	6.8	11.0	87.6	149.8	6.3	11.0
	120DZB	104.0	159.8	7.1	11.3	100.3	164.5	6.7	11.0	96.7	169.0	6.3	10.7
	130DZB	108.9	167.2	7.1	11.2	104.9	171.9	6.7	11.0	101.1	176.5	6.3	11.1
	140DZB	113.8	174.2	7.1	11.0	109.7	179.1	6.6	10.7	105.6	183.7	6.2	10.9
	155DZB	125.1	191.1	7.1	11.3	120.1	196.2	6.7	11.0	115.2	201.2	6.3	10.7
	170DZB	136.8	211.3	7.1	11.3	130.9	216.7	6.7	11.1	124.9	221.9	6.2	10.9
	180DZB	151.1	232.8	7.1	10.7	145.2	238.2	6.7	10.5	139.3	243.4	6.3	10.8
	185DZB	157.0	237.6	7.2	10.9	150.9	243.2	6.8	10.7	144.9	248.6	6.4	11.0
	190DZB	163.8	258.6	7.0	10.6	158.0	263.9	6.6	10.3	152.3	268.9	6.3	10.1
	200DZB	170.8	264.4	7.1	10.8	164.8	269.9	6.8	10.5	159.0	275.2	6.4	10.3

NOTES:
(1) Double asterisk (**) indicates ratings with RCH3 oversized evaporator for 40°F LWT
(2) Asterisk (*) indicates ratings with RCH2 oversized evaporator for 42°F LWT
(3) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(4) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(5) Interpolation between ratings is permissable but extrapolation is **not**
(6) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(7) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE											
		85°F				95°F				105°F			
°F	MODEL	TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
44	021SZB	22.7	20.2	11.7	13.6	21.3	21.8	10.2	12.8	19.9	23.4	9.0	12.1
	024SZB	26.1	24.8	11.2	12.8	24.4	26.7	9.8	12.1	22.7	28.6	8.6	11.6
	027SZB	29.0	27.6	11.3	13.7	27.1	29.5	9.9	12.9	25.2	31.5	8.7	12.2
	030SZB	33.3	32.1	10.9	12.6	31.2	34.6	9.5	11.9	29.0	37.0	8.3	11.3
	035SZB	37.7	36.0	11.1	12.8	35.2	38.9	9.7	12.1	32.8	41.7	8.5	11.4
	030DZB	34.0	30.2	12.0	13.2	31.6	32.8	10.4	14.0	29.2	35.1	9.0	13.2
	035DZB	39.0	36.5	11.6	14.3	36.4	39.4	10.1	13.5	33.8	42.2	8.8	12.8
	040DZB	44.0	39.9	11.4	13.9	41.3	43.1	10.0	13.2	38.5	46.2	8.8	12.5
	045DZB	49.5	47.4	11.0	12.4	46.4	50.9	9.7	13.1	43.2	54.2	8.5	12.4
	050DZB	54.7	52.3	11.2	13.5	51.1	56.1	9.8	12.8	47.6	59.8	8.6	12.2
	052DZB	56.9	56.0	10.9	12.8	53.4	59.8	9.7	12.0	49.8	63.6	8.5	11.2
	055DZB	61.1	61.8	10.7	12.0	57.1	66.2	9.5	11.2	53.3	70.5	8.3	11.3
	062DZB	67.7	64.5	11.0	12.5	63.2	69.5	9.6	11.6	58.8	74.5	8.4	11.5
	070DZB	73.4	72.7	10.7	12.2	68.5	78.2	9.4	11.8	63.7	83.6	8.2	11.1
	075DZB	80.5	79.9	10.8	12.9	75.2	85.9	9.4	12.0	69.9	91.7	8.3	11.6
	080DZB	86.0	87.9	10.6	12.0	80.4	94.2	9.3	11.1	74.7	100.3	8.2	10.4
	085DZB	92.8	89.1	10.9	12.9	86.6	95.7	9.6	12.0	80.4	102.0	8.4	11.3
	090DZB	98.7	94.5	11.0	12.9	92.1	101.2	9.7	12.6	85.4	107.7	8.5	12.0
	100DZB	106.9	105.5	10.8	12.8	99.9	112.9	9.5	12.5	92.8	120.2	8.4	12.5
	102DZB	112.0	111.0	10.9	12.8	105.1	118.6	9.6	12.0	97.6	126.0	8.4	12.0
	112DZB	121.8	118.9	10.8	13.3	113.8	127.6	9.5	12.7	106.0	136.2	8.4	12.0
	120DZB	133.8	133.9	10.7	13.3	124.8	143.7	9.4	12.6	116.1	153.5	8.2	12.0
	130DZB	140.2	139.8	10.8	13.4	130.8	150.2	9.4	12.7	121.7	160.5	8.3	12.0
	140DZB	146.5	145.2	10.7	13.1	136.8	156.3	9.4	12.4	127.3	167.1	8.2	11.8
	155DZB	161.4	159.9	10.8	13.4	150.8	172.0	9.5	12.7	140.3	183.7	8.3	12.1
	170DZB	177.5	178.6	10.8	13.1	166.0	191.5	9.5	12.4	154.1	203.9	8.3	11.7
	180DZB	193.8	199.4	10.5	12.8	181.4	212.9	9.3	12.1	169.1	225.7	8.2	11.5
	185DZB	201.4	203.1	10.7	13.1	188.5	217.0	9.4	12.4	175.7	230.1	8.4	11.7
	190DZB	207.5	226.0	10.0	12.3	195.3	239.6	8.9	11.7	182.6	252.3	8.0	11.2
	200DZB	215.2	230.7	10.2	12.5	202.5	244.7	9.1	11.9	190.2	257.9	8.1	11.4
45	021SZB	23.1	20.3	11.8	13.8	21.7	22.0	10.3	13.0	20.3	23.6	9.1	12.3
	024SZB	26.5	25.0	11.3	12.9	24.9	27.0	9.9	12.2	23.2	28.9	8.7	11.7
	027SZB	29.5	27.8	11.4	13.9	27.6	29.8	10.0	13.1	25.6	31.7	8.8	12.4
	030SZB	33.9	32.3	11.0	12.8	31.7	34.8	9.6	12.1	29.6	37.4	8.4	11.4
	035SZB	38.3	36.3	11.2	12.9	35.8	39.2	9.8	12.2	33.4	42.0	8.5	11.5
	030DZB	34.7	30.5	12.2	13.4	32.3	33.0	10.5	14.2	29.8	35.4	9.1	13.4
	035DZB	39.7	36.8	11.7	14.5	37.1	39.8	10.2	13.7	34.4	42.6	8.9	13.0
	040DZB	44.8	40.2	11.6	14.1	42.0	43.4	10.1	13.3	39.2	46.5	8.9	12.6
	045DZB	50.3	47.8	11.1	12.5	47.2	51.3	9.8	13.3	43.9	54.7	8.6	12.6
	050DZB	55.6	52.6	11.3	13.7	52.0	56.5	9.9	13.0	48.4	60.4	8.7	12.3
	052DZB	57.8	56.4	11.0	12.9	54.2	60.3	9.7	12.1	50.6	64.2	8.6	11.3
	055DZB	62.1	62.3	10.8	12.1	58.1	66.7	9.5	11.3	54.2	71.2	8.4	11.4
	062DZB	68.9	65.0	11.1	12.7	64.3	70.1	9.7	11.8	59.8	75.1	8.5	11.6
	070DZB	74.7	73.2	10.8	12.3	69.7	78.8	9.5	11.9	64.8	84.3	8.3	11.2
	075DZB	81.9	80.6	10.9	13.1	76.5	86.6	9.5	12.1	71.1	92.5	8.4	11.7
	080DZB	87.5	88.6	10.7	12.1	81.8	95.1	9.4	11.2	76.0	101.2	8.2	10.5
	085DZB	94.6	89.8	11.1	13.0	88.3	96.5	9.7	12.1	81.9	102.9	8.5	11.4
	090DZB	100.5	95.2	11.2	13.4	93.7	102.1	9.8	12.7	86.9	108.6	8.6	12.1
	100DZB	108.8	106.3	11.0	13.8	101.7	113.8	9.6	13.2	94.5	121.3	8.5	12.6
	102DZB	113.7	111.9	10.9	13.8	106.6	119.6	9.7	13.2	99.3	127.1	8.5	12.6
	112DZB	123.9	119.8	10.9	13.5	115.8	128.7	9.6	12.8	107.9	137.4	8.4	12.1
	120DZB	136.2	135.0	10.8	13.4	127.1	145.0	9.5	12.8	118.3	154.9	8.3	12.1
	130DZB	142.7	140.9	10.9	13.5	133.2	151.6	9.5	12.8	123.9	162.0	8.4	12.2
	140DZB	149.1	146.4	10.8	13.3	139.3	157.6	9.5	12.5	129.7	168.6	8.3	11.9
	155DZB	164.3	161.3	10.9	13.6	153.6	173.5	9.6	12.8	142.9	185.3	8.4	12.2
	170DZB	180.4	180.1	10.9	13.2	169.1	193.3	9.5	12.5	157.0	205.8	8.4	11.8
	180DZB	197.4	201.2	10.6	13.0	184.8	214.9	9.3	12.2	172.3	227.8	8.3	11.6
	185DZB	205.1	204.9	10.8	13.2	192.0	219.0	9.5	12.5	179.0	232.3	8.4	11.8
	190DZB	210.9	228.0	10.1	12.4	198.6	241.9	9.0	11.8	186.1	254.9	8.1	11.3
	200DZB	218.6	232.8	10.3	12.6	205.8	247.1	9.2	12.0	193.3	260.5	8.2	11.5

NOTES: (1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE											
		115°F				120°F (See Note 5)				125°F (See Note 5)			
		TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
44	021SZB	18.4	24.9	7.9	11.5	17.7	25.7	7.3	11.2	16.9	26.4	6.8	10.8
	024SZB	21.1	30.5	7.5	11.0	20.2	31.5	7.0	10.6	19.3	32.4	6.5	10.4
	027SZB	23.4	33.4	7.7	11.6	22.4	34.3	7.2	11.3	21.5	35.3	6.7	11.0
	030SZB	27.0	39.5	7.3	10.7	26.1	40.7	6.9	10.4	25.2	42.0	6.5	10.2
	035SZB	30.5	44.4	7.4	10.8	29.4	45.7	7.0	10.5	28.3	47.0	6.6	10.3
	030DZB	26.7	37.2	7.8	12.4	25.4	38.2	7.3	12.1	24.1	39.1	6.7	11.7
	035DZB	31.2	44.8	7.7	12.1	29.8	46.0	7.2	11.8	28.5	47.2	6.7	11.4
	040DZB	35.6	49.1	7.7	11.9	34.2	50.6	7.2	11.6	32.7	52.0	6.7	11.3
	045DZB	40.0	57.5	7.5	11.9	38.4	59.2	7.0	11.6	36.7	60.8	6.6	11.3
	050DZB	44.1	63.6	7.6	11.5	42.3	65.5	7.1	11.2	40.5	67.4	6.6	11.0
	052DZB	46.1	67.4	7.5	11.2	44.2	69.3	7.0	10.9	42.4	71.2	6.6	10.6
	055DZB	49.7	74.9	7.3	10.7	48.0	77.0	6.9	10.4	—	—	—	—
	062DZB	54.6	79.4	7.4	10.8	52.7	81.9	6.9	10.5	50.8	84.3	6.5	10.3
	070DZB	59.1	88.8	7.2	10.5	57.0	91.3	6.8	10.4	54.9	93.8	6.4	10.1
	075DZB	64.7	97.3	7.3	10.9	62.1	99.9	6.8	10.6	59.6	102.6	6.4	10.4
	080DZB	68.9	106.1	7.1	10.3	66.0	108.9	6.7	10.0	63.1	111.6	6.3	9.7
	085DZB	74.0	108.1	7.3	11.3	70.7	111.1	6.8	11.1	67.3	114.0	6.4	10.8
	090DZB	78.6	113.8	7.4	11.4	75.1	116.8	7.0	11.1	71.6	119.7	6.5	11.1
	100DZB	85.7	127.3	7.3	11.9	82.0	130.9	6.8	11.7	78.4	134.5	6.4	11.4
	102DZB	90.2	133.2	7.4	12.0	86.4	136.8	6.9	11.7	82.6	140.3	6.5	11.5
	112DZB	98.3	144.6	7.3	11.4	94.5	148.8	6.9	11.1	90.8	152.9	6.5	11.3
	120DZB	107.9	163.1	7.2	11.5	104.1	168.0	6.8	11.2	100.4	172.8	6.4	10.9
	130DZB	113.0	170.5	7.3	11.5	108.9	175.4	6.8	11.2	105.0	180.1	6.4	11.3
	140DZB	118.1	177.5	7.2	11.2	113.8	182.5	6.8	11.3	109.6	187.2	6.4	11.1
	155DZB	129.9	194.8	7.3	11.5	124.7	200.1	6.8	11.3	119.6	205.2	6.4	11.0
	170DZB	142.0	215.6	7.3	11.6	135.9	221.2	6.8	11.3	129.7	226.5	6.3	11.1
	180DZB	156.9	237.6	7.2	10.9	150.8	243.2	6.8	10.7	144.8	248.6	6.4	11.0
	185DZB	163.1	242.4	7.4	11.1	156.8	248.3	7.0	10.9	150.6	253.9	6.5	11.2
	190DZB	170.3	264.0	7.1	10.7	164.3	269.5	6.8	10.5	158.5	274.7	6.4	10.3
	200DZB	177.5	270.0	7.3	10.9	171.4	275.7	6.9	10.7	—	—	—	—
45	021SZB	18.8	25.2	7.9	11.7	18.0	25.9	7.4	11.3	17.2	26.7	6.9	11.0
	024SZB	21.4	30.8	7.6	11.1	20.6	31.8	7.1	10.8	19.7	32.8	6.6	10.5
	027SZB	23.8	33.7	7.7	11.8	22.8	34.7	7.2	11.4	21.9	35.6	6.8	11.2
	030SZB	27.5	39.9	7.4	10.8	26.6	41.1	6.9	10.6	25.6	42.4	6.5	10.3
	035SZB	31.0	44.8	7.5	10.9	29.9	46.1	7.0	10.6	28.8	47.5	6.6	10.4
	030DZB	27.3	37.6	7.9	12.6	26.0	38.5	7.4	12.2	24.6	39.4	6.8	11.9
	035DZB	31.8	45.2	7.8	12.3	30.4	46.4	7.3	11.9	29.1	47.6	6.8	11.6
	040DZB	36.3	49.5	7.8	12.0	34.8	51.0	7.3	11.7	33.3	52.5	6.8	11.4
	045DZB	40.7	58.1	7.6	12.0	39.0	59.7	7.1	11.7	37.4	61.4	6.6	11.4
	050DZB	44.8	64.2	7.6	11.7	43.1	66.1	7.1	11.4	41.3	68.1	6.6	11.1
	052DZB	46.9	68.0	7.6	11.3	45.0	70.0	7.1	11.0	43.1	71.9	6.6	10.7
	055DZB	50.5	75.6	7.4	10.8	48.7	77.8	6.9	10.5	—	—	—	—
	062DZB	55.6	80.1	7.4	10.9	53.6	82.6	7.0	10.6	51.7	85.2	6.5	10.4
	070DZB	60.2	89.6	7.3	10.6	58.0	92.2	6.8	10.5	55.9	94.6	6.4	10.2
	075DZB	65.8	98.1	7.3	11.0	63.2	100.9	6.9	10.7	60.7	103.5	6.4	10.5
	080DZB	70.1	107.1	7.2	10.4	67.2	109.9	6.7	10.1	64.3	112.7	6.3	9.8
	085DZB	75.4	109.2	7.4	11.5	72.0	112.2	6.9	11.2	68.6	115.2	6.4	10.9
	090DZB	80.0	114.9	7.5	12.0	76.5	117.9	7.0	11.8	72.9	120.9	6.5	11.7
	100DZB	87.2	128.6	7.4	12.1	83.5	132.3	6.9	11.8	79.8	135.9	6.4	11.5
	102DZB	91.7	134.5	7.5	12.1	87.9	138.1	7.0	11.9	84.1	141.7	6.5	11.6
	112DZB	100.0	146.0	7.4	11.6	96.2	150.2	6.9	11.6	92.4	154.4	6.5	11.4
	120DZB	109.9	164.8	7.3	11.6	106.0	169.7	6.8	11.3	102.3	174.7	6.4	11.0
	130DZB	115.1	172.2	7.3	11.6	110.9	177.1	6.9	11.3	106.9	182.0	6.5	11.5
	140DZB	120.4	179.1	7.3	11.3	115.9	184.2	6.8	11.5	111.6	189.1	6.4	11.2
	155DZB	132.3	196.7	7.4	11.6	127.1	202.1	6.9	11.4	121.9	207.3	6.5	11.1
	170DZB	144.7	217.8	7.3	11.7	138.5	223.5	6.8	11.4	132.2	228.9	6.4	11.2
	180DZB	159.9	240.0	7.3	11.0	153.7	245.7	6.9	11.3	147.6	251.1	6.5	11.1
	185DZB	166.2	244.9	7.5	11.2	159.8	250.8	7.0	11.5	153.5	256.5	6.6	11.3
	190DZB	173.6	266.8	7.2	10.8	167.6	272.4	6.8	10.6	161.6	277.6	6.5	10.4
	200DZB	181.0	272.9	7.4	11.0	174.7	278.7	7.0	10.8	—	—	—	—

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(5) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE											
		85°F				95°F				105°F			
°F	MODEL	TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
46	021SZB	23.6	20.5	12.0	14.0	22.1	22.2	10.5	13.2	20.6	23.8	9.2	12.5
	024SZB	27.0	25.2	11.4	13.1	25.3	27.2	10.0	12.4	23.6	29.1	8.8	11.9
	027SZB	30.0	28.0	11.6	14.1	28.0	30.0	10.1	13.3	26.1	32.0	8.9	12.6
	030SZB	34.5	32.5	11.1	12.9	32.3	35.1	9.7	12.2	30.1	37.7	8.5	11.5
	035SZB	39.0	36.6	11.3	13.1	36.4	39.5	9.9	12.4	34.0	42.4	8.6	11.6
	030DZB	35.4	30.7	12.3	13.6	33.0	33.3	10.7	14.4	30.4	35.7	9.2	13.5
	035DZB	40.4	37.1	11.9	14.7	37.7	40.1	10.3	13.9	35.1	42.9	9.0	13.1
	040DZB	45.6	40.4	11.7	14.3	42.8	43.7	10.2	13.5	39.9	46.9	9.0	12.8
	045DZB	51.1	48.1	11.3	12.7	48.0	51.7	9.9	13.4	44.7	55.2	8.7	12.8
	050DZB	56.6	53.0	11.4	13.9	52.9	57.0	10.0	13.1	49.3	60.9	8.8	12.4
	052DZB	58.6	56.8	11.1	13.0	55.0	60.8	9.8	12.2	51.4	64.7	8.7	12.0
	055DZB	63.1	62.8	10.9	12.2	59.0	67.3	9.6	11.4	55.1	71.8	8.4	11.5
	062DZB	70.1	65.5	11.2	12.8	65.4	70.7	9.8	12.4	60.9	75.8	8.6	11.7
	070DZB	76.0	73.8	10.9	12.7	70.9	79.5	9.6	12.0	66.0	85.0	8.4	11.3
	075DZB	83.3	81.2	11.0	13.2	77.8	87.3	9.6	12.3	72.4	93.3	8.4	11.8
	080DZB	88.9	89.4	10.8	12.2	83.2	95.9	9.5	11.4	77.3	102.1	8.3	10.6
	085DZB	96.3	90.5	11.2	13.2	90.0	97.3	9.8	12.3	83.5	103.9	8.6	11.5
	090DZB	102.3	95.9	11.3	14.1	95.4	102.9	9.9	13.4	88.5	109.6	8.7	12.8
	100DZB	110.5	107.2	11.1	14.0	103.4	114.8	9.7	13.3	96.1	122.4	8.5	12.7
	102DZB	115.4	112.7	11.0	13.9	108.2	120.5	9.7	13.3	101.0	128.2	8.6	12.8
	112DZB	126.1	120.7	11.1	13.6	117.9	129.7	9.7	12.9	109.8	138.6	8.5	12.3
	120DZB	138.3	136.2	10.9	13.6	129.4	146.3	9.6	12.9	120.4	156.4	8.4	12.2
	130DZB	145.2	142.1	11.0	13.7	135.6	152.9	9.6	13.0	126.2	163.5	8.4	12.3
	140DZB	151.8	147.5	10.9	13.4	141.8	159.0	9.6	12.7	132.0	170.1	8.4	12.0
	155DZB	167.3	162.6	11.0	13.7	156.5	175.0	9.7	13.0	145.6	187.0	8.5	12.3
	170DZB	183.4	181.6	11.0	13.4	172.1	195.0	9.6	12.6	159.9	207.8	8.5	11.9
	180DZB	201.0	202.9	10.7	13.1	188.2	216.9	9.4	12.4	175.5	230.0	8.3	11.7
	185DZB	208.6	206.6	10.9	13.3	195.6	221.0	9.6	12.6	182.4	234.6	8.5	11.9
	190DZB	214.3	230.1	10.2	12.5	201.8	244.2	9.1	11.9	189.5	257.4	8.1	11.4
	200DZB	222.1	234.9	10.4	12.7	209.1	249.5	9.2	12.1	196.5	263.0	8.3	11.6
48	021SZB	24.4	20.7	12.3	14.4	22.9	22.5	10.7	13.6	21.4	24.2	9.4	12.9
	024SZB	28.0	25.6	11.7	13.4	26.2	27.6	10.2	12.6	24.4	29.6	8.9	12.1
	027SZB	30.9	28.4	11.7	14.5	29.0	30.5	10.3	13.7	26.9	32.5	9.0	13.0
	030SZB	35.8	33.0	11.3	13.3	33.4	35.7	9.9	12.5	31.2	38.3	8.7	11.8
	035SZB	40.4	37.1	11.6	13.4	37.7	40.1	10.1	12.6	35.2	43.1	8.8	11.9
	030DZB	36.8	31.1	12.6	15.7	34.3	33.8	10.9	14.8	31.7	36.3	9.5	13.9
	035DZB	42.0	37.6	12.2	15.1	39.2	40.7	10.6	14.2	36.4	43.6	9.2	13.4
	040DZB	47.3	41.0	12.0	14.7	44.4	44.4	10.5	13.9	41.4	47.7	9.2	13.2
	045DZB	52.8	48.8	11.5	12.9	49.5	52.5	10.1	13.8	46.2	56.1	8.9	13.1
	050DZB	58.5	53.8	11.7	14.2	54.8	57.9	10.2	13.4	51.0	61.9	9.0	12.7
	052DZB	60.4	57.7	11.3	13.2	56.6	61.8	10.0	12.4	52.9	65.8	8.8	12.3
	055DZB	65.0	63.8	11.1	12.4	60.9	68.5	9.8	12.3	56.8	73.1	8.6	11.7
	062DZB	72.5	66.5	11.4	13.1	67.7	71.8	10.0	12.7	63.0	77.1	8.7	11.9
	070DZB	78.6	74.9	11.2	13.0	73.4	80.8	9.7	12.2	68.3	86.5	8.5	11.5
	075DZB	86.0	82.5	11.2	13.5	80.5	88.8	9.8	12.5	74.9	94.9	8.6	12.0
	080DZB	91.7	90.8	11.0	12.4	86.0	97.5	9.6	11.5	80.0	104.0	8.5	10.7
	085DZB	100.0	91.9	11.5	13.5	93.4	98.9	10.0	12.6	86.6	105.8	8.8	11.7
	090DZB	106.0	97.4	11.5	14.5	98.8	104.5	10.1	13.7	91.6	111.5	8.8	13.1
	100DZB	114.0	108.9	11.2	14.3	106.9	116.8	9.9	13.6	99.5	124.7	8.7	13.0
	102DZB	118.9	114.4	11.2	14.2	111.5	122.5	9.9	13.6	104.1	130.5	8.7	13.0
	112DZB	130.5	122.6	11.3	13.9	122.0	131.9	9.9	13.2	113.6	141.1	8.7	12.5
	120DZB	142.6	138.5	11.1	13.8	133.7	149.0	9.7	13.1	124.8	159.5	8.5	12.5
	130DZB	150.1	144.5	11.2	13.9	140.4	155.6	9.8	13.2	130.8	166.5	8.6	12.5
	140DZB	157.1	149.9	11.2	13.7	146.9	161.6	9.7	12.9	136.8	173.1	8.5	12.2
	155DZB	173.4	165.1	11.3	14.0	162.2	177.9	9.9	13.2	151.0	190.4	8.6	12.6
	170DZB	189.3	184.8	11.1	13.6	177.7	198.5	9.8	12.8	165.8	211.8	8.6	12.9
	180DZB	208.1	206.4	10.9	13.4	195.1	220.8	9.6	12.6	182.0	234.4	8.5	11.9
	185DZB	215.4	210.2	11.1	14.2	202.5	225.0	9.8	13.5	189.2	239.0	8.7	12.9
	190DZB	221.0	234.3	10.3	12.7	208.2	248.8	9.2	12.1	195.8	262.4	8.2	11.6
	200DZB	229.1	239.2	10.5	12.9	215.8	254.2	9.4	12.3	202.9	268.3	8.4	11.8

NOTES: (1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE											
		115°F				120°F (See Note 5)				125°F (See Note 5)			
°F	MODEL	TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
46	021SZB	19.1	25.4	8.0	11.8	18.3	26.2	7.5	11.5	17.5	26.9	7.0	11.1
	024SZB	21.8	31.1	7.6	11.2	20.9	32.1	7.1	10.9	20.0	33.1	6.6	10.6
	027SZB	24.2	34.0	7.8	11.9	23.2	35.0	7.3	11.6	22.3	36.0	6.8	11.3
	030SZB	28.0	40.2	7.5	10.9	27.0	41.5	7.0	10.7	26.1	42.8	6.6	10.4
	035SZB	31.6	45.2	7.6	11.1	30.4	46.6	7.1	10.8	29.4	47.9	6.7	10.5
	030DZB	27.8	37.9	8.0	12.8	26.5	38.9	7.5	12.4	25.1	39.8	6.9	12.0
	035DZB	32.4	45.6	7.9	12.4	31.0	46.9	7.3	12.0	29.6	48.1	6.9	11.7
	040DZB	37.0	50.0	7.9	12.2	35.4	51.5	7.3	11.9	33.9	52.9	6.9	11.5
	045DZB	41.4	58.6	7.6	12.2	39.7	60.3	7.1	11.9	38.0	62.0	6.7	11.6
	050DZB	45.6	64.8	7.7	11.8	43.8	66.8	7.2	11.5	42.0	68.8	6.7	11.2
	052DZB	47.6	68.7	7.6	11.4	45.8	70.6	7.1	11.2	—	—	—	—
	055DZB	51.3	76.3	7.4	10.9	49.5	78.6	7.0	10.6	—	—	—	—
	062DZB	56.6	80.9	7.5	11.0	54.5	83.4	7.0	10.9	52.6	86.0	6.6	10.5
	070DZB	61.3	90.4	7.4	10.7	59.1	93.0	6.9	10.6	56.9	95.5	6.5	10.3
	075DZB	67.0	99.0	7.4	11.2	64.3	101.8	6.9	10.8	61.7	104.5	6.5	10.7
	080DZB	71.4	108.1	7.3	10.5	68.4	111.0	6.8	10.2	65.4	113.8	6.4	9.9
	085DZB	76.8	110.2	7.5	11.6	73.4	113.3	7.0	11.3	69.9	116.4	6.5	11.1
	090DZB	81.5	116.0	7.6	12.2	77.9	119.1	7.1	11.9	74.3	122.1	6.6	11.9
	100DZB	88.7	129.9	7.5	12.2	85.0	133.6	7.0	11.9	81.2	137.3	6.5	11.6
	102DZB	93.3	135.8	7.5	12.2	89.5	139.5	7.0	12.0	85.6	143.2	6.6	11.7
	112DZB	101.8	147.4	7.5	11.7	97.9	151.7	7.0	11.8	94.1	156.0	6.6	11.5
	120DZB	111.9	166.5	7.4	11.7	107.9	171.5	6.9	11.4	104.1	176.5	6.5	11.6
	130DZB	117.2	173.8	7.4	11.7	113.0	178.9	7.0	11.8	108.9	183.9	6.5	11.6
	140DZB	122.6	180.8	7.4	11.4	118.1	186.0	6.9	11.6	113.7	190.9	6.5	11.4
	155DZB	134.8	198.5	7.4	11.7	129.5	204.0	7.0	11.5	124.2	209.3	6.5	11.2
	170DZB	147.4	219.9	7.4	11.8	141.1	225.7	6.9	11.5	134.7	231.2	6.5	11.3
	180DZB	162.9	242.4	7.4	11.1	156.6	248.2	6.9	11.4	150.4	253.7	6.5	11.2
	185DZB	169.3	247.3	7.5	11.3	162.9	253.4	7.1	11.7	156.4	259.2	6.7	11.4
	190DZB	176.9	269.5	7.3	10.9	170.8	275.2	6.9	10.7	—	—	—	—
	200DZB	184.4	275.7	7.4	11.1	178.1	281.6	7.0	10.9	—	—	—	—
48	021SZB	19.8	25.8	8.2	12.2	19.0	26.6	7.6	11.8	18.2	27.4	7.1	11.5
	024SZB	22.6	31.7	7.8	11.5	21.7	32.7	7.2	11.1	20.7	33.8	6.7	10.9
	027SZB	25.0	34.6	7.9	12.3	24.0	35.6	7.4	11.9	23.0	36.7	6.9	11.6
	030SZB	29.0	41.0	7.6	11.2	28.0	42.3	7.1	10.9	27.0	43.6	6.7	10.7
	035SZB	32.7	46.0	7.7	11.3	31.5	47.4	7.3	11.0	30.4	48.8	6.8	10.8
	030DZB	29.0	38.5	8.2	13.1	27.6	39.6	7.6	12.8	26.2	40.5	7.1	12.4
	035DZB	33.6	46.4	8.0	12.7	32.2	47.7	7.5	12.4	30.8	49.0	7.0	12.0
	040DZB	38.3	50.8	8.0	12.5	36.7	52.4	7.5	12.2	35.1	53.9	7.0	11.8
	045DZB	42.8	59.6	7.8	12.5	41.1	61.4	7.3	12.2	—	—	—	—
	050DZB	47.2	66.0	7.8	12.1	45.3	68.0	7.3	11.7	43.4	70.1	6.8	11.5
	052DZB	49.2	69.9	7.7	11.7	47.3	72.0	7.2	11.4	—	—	—	—
	055DZB	52.9	77.8	7.5	11.1	51.1	80.1	7.1	10.8	—	—	—	—
	062DZB	58.5	82.4	7.6	11.3	56.4	85.0	7.2	11.1	54.4	87.6	6.7	10.8
	070DZB	63.4	92.0	7.5	11.1	61.1	94.7	7.0	10.8	58.9	97.3	6.6	10.5
	075DZB	69.3	100.8	7.5	11.4	66.6	103.7	7.1	11.1	63.9	106.4	6.6	10.9
	080DZB	73.9	110.1	7.4	10.7	70.8	113.1	6.9	10.3	67.7	115.9	6.5	10.1
	085DZB	79.7	112.4	7.6	11.9	76.2	115.6	7.1	11.5	72.6	118.8	6.6	11.3
	090DZB	84.4	118.1	7.7	12.4	80.7	121.4	7.2	12.1	77.0	124.5	6.7	12.2
	100DZB	91.9	132.5	7.6	12.4	88.0	136.3	7.1	12.2	84.1	140.2	6.6	12.2
	102DZB	96.5	138.4	7.7	12.4	92.6	142.3	7.2	12.1	—	—	—	—
	112DZB	105.4	150.2	7.6	12.3	101.4	154.7	7.1	12.0	97.5	159.1	6.7	11.8
	120DZB	116.0	169.9	7.5	11.9	111.9	175.1	7.0	11.6	—	—	—	—
	130DZB	121.5	177.2	7.5	11.9	117.2	182.5	7.1	12.1	113.0	187.6	6.7	11.8
	140DZB	127.1	184.2	7.5	12.1	122.4	189.5	7.0	11.8	118.0	194.7	6.6	11.6
	155DZB	139.8	202.2	7.6	12.0	134.3	208.0	7.1	11.7	128.8	213.5	6.6	11.4
	170DZB	152.9	224.2	7.5	12.3	146.3	230.2	7.0	12.1	139.6	236.0	6.6	11.8
	180DZB	169.1	247.1	7.5	12.2	162.6	253.1	7.1	12.0	156.2	258.9	6.7	11.8
	185DZB	175.7	252.2	7.7	12.5	169.0	258.5	7.2	12.2	162.4	264.5	6.8	12.0
	190DZB	183.6	275.0	7.4	11.1	177.3	281.0	7.0	10.9	—	—	—	—
	200DZB	190.4	281.3	7.5	11.3	184.4	287.5	7.1	11.0	—	—	—	—

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(5) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE											
		85°F				95°F				105°F			
°F	MODEL	TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
50	021SZB	25.3	21.0	12.6	14.8	23.8	22.8	11.0	13.9	22.2	24.6	9.6	13.2
	024SZB	29.0	26.0	11.9	13.7	27.2	28.1	10.4	13.2	25.3	30.2	9.1	12.4
	027SZB	31.9	28.8	12.0	14.9	29.8	30.9	10.5	14.1	27.8	33.1	9.2	13.3
	030SZB	37.0	33.5	11.6	13.6	34.6	36.3	10.1	12.8	32.3	39.0	8.8	12.1
	035SZB	41.8	37.7	11.8	13.7	39.1	40.7	10.3	12.9	36.4	43.8	9.0	12.2
	030DZB	38.2	31.6	13.0	16.2	35.6	34.3	11.2	15.2	32.9	36.9	9.7	14.3
	035DZB	43.5	38.1	12.4	15.5	40.6	41.3	10.8	14.6	37.7	44.4	9.4	13.8
	040DZB	49.0	41.5	12.3	15.1	46.0	45.0	10.7	14.3	42.9	48.4	9.4	13.5
	045DZB	54.5	49.5	11.7	13.1	51.1	53.3	10.3	14.1	47.7	57.0	9.0	13.4
	050DZB	60.4	54.6	11.9	14.5	56.6	58.8	10.4	13.7	52.7	63.0	9.1	13.0
	052DZB	62.1	58.6	11.5	13.4	58.2	62.8	10.1	12.6	54.4	67.0	8.9	12.5
	055DZB	66.9	64.9	11.3	12.5	62.7	69.6	9.9	12.6	58.6	74.4	8.7	12.0
	062DZB	75.1	67.4	11.7	13.4	70.1	72.9	10.2	12.9	65.2	78.4	8.9	12.2
	070DZB	81.3	76.1	11.4	13.3	75.9	82.1	9.9	12.5	70.7	87.9	8.7	11.8
	075DZB	88.8	83.7	11.4	13.7	83.2	90.2	10.0	13.0	77.5	96.5	8.8	12.3
	080DZB	94.5	92.3	11.1	12.6	88.7	99.2	9.8	11.7	82.8	105.8	8.6	11.5
	085DZB	103.6	93.2	11.7	13.8	96.8	100.5	10.2	12.8	89.8	107.6	8.9	12.7
	090DZB	109.8	98.8	11.8	14.8	102.3	106.2	10.3	14.0	94.9	113.4	9.0	13.4
	100DZB	117.5	110.6	11.4	14.5	110.2	118.8	10.1	13.9	102.9	126.9	8.8	13.2
	102DZB	122.5	116.2	11.4	14.5	114.7	124.5	10.0	13.9	107.2	132.8	8.8	13.2
	112DZB	135.0	124.4	11.5	14.2	126.2	134.0	10.1	13.5	117.5	143.5	8.8	12.8
	120DZB	147.0	140.7	11.3	14.1	137.9	151.6	9.9	13.3	129.0	162.4	8.7	12.7
	130DZB	154.8	146.8	11.4	14.2	145.3	158.2	10.0	13.4	135.5	169.5	8.8	12.7
	140DZB	162.6	152.2	11.4	14.0	152.1	164.3	9.9	13.2	141.7	176.1	8.7	12.5
	155DZB	179.6	167.8	11.5	14.3	168.0	181.0	10.1	13.5	156.5	193.8	8.8	12.8
	170DZB	195.4	187.9	11.3	14.5	183.4	202.1	9.9	13.8	171.1	215.7	8.7	13.2
	180DZB	214.6	209.9	11.1	14.2	202.0	224.7	9.8	13.5	188.7	238.8	8.7	13.0
	185DZB	222.2	213.7	11.3	14.5	209.0	229.0	10.0	13.8	195.9	243.5	8.8	13.2
	190DZB	227.8	238.5	10.5	12.9	214.8	253.6	9.3	12.3	202.0	267.5	8.4	11.8
	200DZB	236.1	243.5	10.7	13.2	222.5	259.0	9.5	12.5	209.3	273.5	8.5	12.0
55	021SZB	27.6	21.6	13.3	15.7	25.9	23.6	11.6	14.8	24.1	25.5	10.1	14.2
	024SZB	31.5	26.9	12.5	14.4	29.6	29.1	11.0	14.0	27.5	31.4	9.5	13.2
	027SZB	34.2	29.8	12.4	16.0	32.0	32.1	10.9	15.1	29.9	34.4	9.6	14.2
	030SZB	40.2	34.7	12.2	14.5	37.6	37.6	10.6	13.6	35.1	40.6	9.3	12.8
	035SZB	45.4	39.0	12.4	14.5	42.5	42.3	10.8	13.6	39.7	45.6	9.4	12.8
	030DZB	41.8	32.7	13.7	17.3	38.9	35.6	11.9	16.3	36.0	38.4	10.3	15.3
	035DZB	47.3	39.4	13.2	16.5	44.3	42.8	11.4	15.5	41.2	46.1	9.9	14.6
	040DZB	53.4	42.8	13.0	16.2	50.1	46.6	11.3	15.3	46.7	50.2	9.9	14.4
	045DZB	58.8	51.2	12.3	15.9	55.2	55.3	10.7	15.0	51.5	59.3	9.4	14.3
	050DZB	65.2	56.5	12.4	15.4	61.1	61.0	10.9	14.5	57.0	65.6	9.5	13.7
	052DZB	66.7	60.7	11.9	14.0	62.4	65.2	10.5	13.9	58.3	69.8	9.2	13.2
	055DZB	71.8	67.4	11.7	13.9	67.3	72.5	10.2	13.2	63.0	77.7	9.0	12.5
	062DZB	81.5	69.7	12.3	14.5	76.1	75.6	10.7	13.6	70.9	81.5	9.3	12.8
	070DZB	87.6	78.9	11.9	14.4	82.2	85.3	10.4	13.6	76.8	91.6	9.1	12.9
	075DZB	96.0	86.9	11.9	14.5	89.9	93.8	10.4	13.7	83.8	100.6	9.1	12.9
	080DZB	101.6	96.0	11.5	13.1	95.4	103.3	10.1	12.7	89.1	110.4	8.9	12.0
	085DZB	113.0	96.5	12.4	15.7	105.7	104.5	10.8	14.9	98.0	112.2	9.4	14.1
	090DZB	118.5	102.3	12.4	15.6	111.0	110.3	10.8	14.8	103.3	118.1	9.5	14.0
	100DZB	126.5	114.7	11.9	15.3	118.6	123.6	10.4	14.5	110.7	132.5	9.1	13.8
	102DZB	131.6	120.6	11.8	15.2	123.2	129.5	10.4	14.5	115.0	138.5	9.1	13.8
	112DZB	145.8	128.8	12.1	14.9	136.9	139.2	10.6	14.1	127.8	149.6	9.3	13.9
	120DZB	158.3	146.3	11.7	14.7	148.5	158.1	10.2	13.9	139.0	169.8	9.0	13.2
	130DZB	166.8	152.5	11.9	14.8	156.6	164.9	10.4	14.0	146.7	177.1	9.1	13.7
	140DZB	175.7	158.0	11.9	15.2	165.1	171.0	10.4	14.5	154.6	183.7	9.1	13.9
	155DZB	193.8	174.4	12.0	15.0	182.3	188.6	10.5	14.1	170.6	202.4	9.2	13.4
	170DZB	210.9	195.8	11.8	15.2	198.0	211.0	10.3	14.4	184.9	225.6	9.1	13.8
	180DZB	231.5	218.6	11.5	14.9	218.0	234.6	10.2	14.2	204.6	249.8	9.0	13.6
	185DZB	239.6	222.7	11.7	15.2	225.5	239.1	10.3	14.4	211.6	254.8	9.2	13.8
	190DZB	245.0	249.1	10.8	13.4	231.3	265.3	9.6	12.8	217.8	280.4	8.6	12.2
	200DZB	253.8	254.3	11.0	13.7	239.5	271.0	9.8	13.0	225.6	286.7	8.8	12.4

NOTES: (1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE											
		115°F				120°F (See Note 5)				125°F (See Note 5)			
		TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
50	021SZB	20.5	26.2	8.4	12.5	19.7	27.1	7.8	12.1	18.8	27.9	7.3	11.8
	024SZB	23.4	32.3	7.9	11.8	22.4	33.3	7.4	11.4	21.5	34.4	6.8	11.5
	027SZB	25.8	35.2	8.1	12.6	24.8	36.3	7.5	12.2	23.8	37.4	7.0	11.9
	030SZB	30.0	41.7	7.8	11.4	29.0	43.1	7.3	11.2	28.0	44.5	6.8	10.9
	035SZB	33.9	46.8	7.9	11.5	32.7	48.2	7.4	11.3	31.5	49.6	6.9	11.4
	030DZB	30.1	39.2	8.4	13.5	28.7	40.3	7.8	13.1	27.2	41.2	7.2	12.7
	035DZB	34.8	47.3	8.2	13.0	33.4	48.6	7.6	12.7	32.0	49.9	7.1	12.3
	040DZB	39.7	51.7	8.2	12.8	38.0	53.3	7.6	12.5	36.4	54.9	7.1	12.1
	045DZB	44.3	60.7	7.9	12.8	42.5	62.5	7.4	12.5	—	—	—	—
	050DZB	48.8	67.2	8.0	12.4	46.8	69.3	7.4	12.0	44.9	71.5	6.9	11.7
	052DZB	50.6	71.2	7.8	11.9	48.8	73.3	7.3	11.6	—	—	—	—
	055DZB	54.6	79.3	7.6	11.4	52.7	81.7	7.2	11.0	—	—	—	—
	062DZB	60.6	83.8	7.8	11.5	58.4	86.5	7.3	11.4	56.3	89.3	6.8	11.0
	070DZB	65.7	93.6	7.6	11.3	63.3	96.4	7.2	11.0	61.0	99.1	6.7	10.7
	075DZB	71.8	102.6	7.7	11.6	68.9	105.5	7.2	11.3	66.1	108.4	6.7	11.1
	080DZB	76.5	112.1	7.5	10.9	73.3	115.2	7.0	10.6	70.0	118.1	6.6	10.2
	085DZB	82.6	114.5	7.8	12.1	79.0	117.9	7.3	11.8	75.2	121.2	6.7	11.5
	090DZB	87.4	120.3	7.9	12.7	83.6	123.7	7.4	12.8	79.8	127.0	6.8	12.5
	100DZB	95.0	135.0	7.7	12.6	91.1	139.1	7.2	12.4	—	—	—	—
	102DZB	99.6	140.9	7.8	12.7	95.8	145.0	7.3	12.4	—	—	—	—
	112DZB	109.1	152.9	7.8	12.6	105.0	157.6	7.3	12.3	101.0	162.3	6.8	12.0
	120DZB	120.2	173.3	7.6	12.1	116.0	178.7	7.1	12.3	—	—	—	—
	130DZB	126.0	180.7	7.7	12.6	121.4	186.1	7.2	12.3	117.1	191.4	6.8	12.0
	140DZB	131.7	187.6	7.6	12.4	126.9	193.1	7.2	12.1	122.3	198.4	6.7	11.8
	155DZB	145.0	206.1	7.7	12.2	139.2	212.0	7.2	11.9	133.6	217.7	6.8	11.6
	170DZB	158.5	228.6	7.7	12.6	151.7	234.8	7.2	12.3	—	—	—	—
	180DZB	175.3	251.9	7.7	12.5	168.7	258.2	7.2	12.2	162.0	264.2	6.8	12.0
	185DZB	182.2	257.2	7.8	12.7	175.3	263.7	7.4	12.5	—	—	—	—
	190DZB	189.6	280.5	7.5	11.3	183.7	286.7	7.1	11.0	—	—	—	—
	200DZB	196.6	287.0	7.6	11.4	190.4	293.3	7.2	11.2	—	—	—	—
55	021SZB	22.4	27.3	8.8	13.4	21.4	28.2	8.2	13.0	20.5	29.1	7.6	13.0
	024SZB	25.4	33.7	8.2	12.5	24.3	34.9	7.7	12.7	23.3	36.1	7.1	12.4
	027SZB	27.9	36.7	8.4	13.5	26.9	37.9	7.8	13.2	—	—	—	—
	030SZB	32.7	43.6	8.1	12.2	31.5	45.0	7.6	11.9	30.5	46.6	7.1	12.2
	035SZB	36.9	48.8	8.3	12.1	35.6	50.3	7.7	12.5	34.4	51.9	7.3	12.2
	030DZB	33.0	40.8	8.9	14.5	31.4	42.0	8.2	14.0	29.7	43.0	7.6	13.6
	035DZB	38.1	49.3	8.6	13.8	36.5	50.8	8.0	13.4	35.0	52.2	7.5	13.0
	040DZB	43.2	53.8	8.6	13.6	41.4	55.5	8.0	13.3	39.6	57.2	7.5	12.9
	045DZB	47.8	63.3	8.2	13.6	46.0	65.3	7.7	13.2	—	—	—	—
	050DZB	52.9	70.2	8.3	13.0	50.8	72.5	7.7	12.7	—	—	—	—
	052DZB	54.3	74.4	8.1	12.5	52.3	76.7	7.6	12.2	—	—	—	—
	055DZB	58.8	83.0	7.9	11.9	—	—	—	—	—	—	—	—
	062DZB	65.9	87.4	8.1	12.3	63.5	90.4	7.6	12.0	61.3	93.4	7.1	11.7
	070DZB	71.5	97.7	8.0	12.5	68.9	100.7	7.5	12.2	—	—	—	—
	075DZB	77.8	107.1	8.0	12.2	74.9	110.3	7.5	12.1	—	—	—	—
	080DZB	82.7	117.2	7.8	11.3	79.4	120.5	7.3	11.0	—	—	—	—
	085DZB	90.2	119.8	8.2	13.4	86.2	123.5	7.6	13.1	82.1	127.1	7.0	12.8
	090DZB	95.2	125.7	8.2	13.9	91.1	129.4	7.7	13.5	87.0	133.0	7.2	13.2
	100DZB	102.7	141.4	8.0	13.8	98.7	145.9	7.5	13.5	—	—	—	—
	102DZB	107.0	147.4	8.0	13.2	103.0	151.8	7.5	13.5	—	—	—	—
	112DZB	118.7	159.9	8.1	13.3	114.3	165.1	7.6	12.9	110.0	170.2	7.1	12.7
	120DZB	130.0	181.7	7.9	13.1	125.7	187.6	7.4	12.9	—	—	—	—
	130DZB	137.1	189.2	8.0	13.2	132.6	195.2	7.5	12.9	—	—	—	—
	140DZB	143.9	196.1	8.0	13.3	138.7	202.1	7.5	13.0	—	—	—	—
	155DZB	158.4	215.7	8.1	12.7	152.2	222.1	7.6	13.0	—	—	—	—
	170DZB	171.5	239.6	8.0	13.1	164.6	246.3	7.4	13.3	—	—	—	—
	180DZB	191.2	264.2	8.0	13.0	184.4	271.0	7.5	12.8	—	—	—	—
	185DZB	197.7	269.6	8.1	13.2	190.8	276.6	7.7	13.0	—	—	—	—
	190DZB	204.8	294.5	7.8	11.7	198.5	301.1	7.4	11.4	—	—	—	—
	200DZB	212.1	301.2	7.9	11.9	—	—	—	—	—	—	—	—

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(5) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

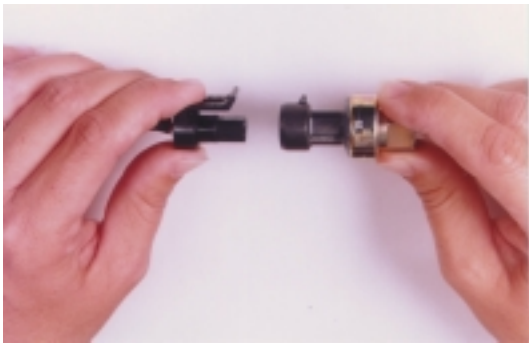
60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE											
		85°F				95°F				105°F			
°F	MODEL	TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
60	021SZB	29.8	22.2	14.1	16.7	28.1	24.3	12.3	16.2	26.2	26.4	10.6	15.2
	024SZB	33.8	27.7	13.1	15.2	31.7	30.2	11.4	14.9	29.6	32.6	9.9	14.0
	027SZB	36.7	30.8	13.0	17.1	34.4	33.3	11.3	16.1	32.0	35.8	9.9	15.2
	030SZB	43.5	35.7	12.9	15.4	40.8	38.9	11.2	14.5	38.1	42.1	9.7	13.6
	035SZB	48.9	40.4	13.0	15.3	46.0	43.9	11.3	14.3	43.1	47.4	9.9	13.5
	030DZB	45.2	33.6	14.5	18.5	42.2	36.8	12.5	17.3	39.0	39.8	10.8	16.3
	035DZB	50.9	40.5	13.8	17.5	47.8	44.3	11.9	16.5	44.7	47.9	10.4	15.5
	040DZB	57.9	43.9	13.8	17.3	54.4	48.0	12.0	16.3	50.7	52.0	10.4	15.4
	045DZB	63.4	52.9	12.8	16.9	59.4	57.2	11.2	16.0	55.5	61.6	9.8	15.2
	050DZB	70.0	58.4	13.0	16.2	65.6	63.2	11.3	15.2	61.2	68.1	9.9	14.4
	052DZB	71.5	62.9	12.4	15.2	66.8	67.7	10.8	14.6	62.3	72.6	9.5	13.9
	055DZB	77.0	69.9	12.1	14.5	72.1	75.4	10.6	13.8	67.4	81.0	9.3	13.1
	062DZB	87.9	71.8	13.0	16.0	82.5	78.2	11.3	15.0	76.8	84.6	9.8	14.2
	070DZB	94.0	81.8	12.3	15.1	88.3	88.6	10.8	14.2	82.6	95.3	9.5	13.8
	075DZB	103.1	90.1	12.4	15.8	96.8	97.5	10.8	14.9	90.4	104.7	9.5	14.1
	080DZB	109.1	99.8	12.0	14.7	102.4	107.5	10.5	13.9	95.6	115.0	9.2	13.1
	085DZB	121.7	99.6	13.0	16.6	114.2	108.3	11.3	15.7	106.5	116.7	9.9	14.9
	090DZB	127.6	105.7	12.9	16.4	119.4	114.4	11.3	15.5	111.3	122.8	9.8	15.3
	100DZB	135.9	118.9	12.4	16.0	127.3	128.4	10.8	15.2	118.7	138.1	9.4	15.1
	102DZB	141.1	125.1	12.3	15.9	132.1	134.6	10.8	15.2	123.2	144.2	9.4	14.4
	112DZB	156.7	133.2	12.6	15.7	147.1	144.3	11.0	15.3	137.7	155.5	9.6	14.5
	120DZB	170.1	151.5	12.2	15.4	159.6	164.3	10.6	15.0	149.5	177.1	9.3	14.8
	130DZB	179.3	158.2	12.4	15.5	168.5	171.4	10.8	15.4	157.9	184.6	9.4	14.8
	140DZB	188.9	163.9	12.4	16.0	177.7	177.8	10.8	15.2	166.6	191.5	9.5	14.5
	155DZB	208.8	181.1	12.5	16.4	196.4	196.3	10.9	15.6	184.0	211.1	9.6	14.9
	170DZB	227.3	204.0	12.2	15.8	213.4	220.2	10.7	15.0	199.3	235.8	9.4	14.4
	180DZB	248.8	227.4	12.0	15.6	234.5	244.6	10.5	14.8	220.2	260.9	9.3	14.1
	185DZB	257.5	231.6	12.2	15.9	242.5	249.3	10.7	15.1	227.7	266.1	9.5	14.4
	190DZB	262.6	259.7	11.2	14.0	248.1	277.2	9.9	13.2	233.9	293.5	8.9	12.6
	200DZB	271.7	265.2	11.3	14.2	256.7	283.2	10.1	13.4	242.1	300.0	9.0	12.8

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

For your information...

All units feature standard pressure transducers with automotive-type quick-connect fittings to eliminate rewiring. These weatherproof transducers feature an ultra-fast reaction time for smooth, accurate unit operation.



PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °F	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE											
		115°F				120°F (See Note 5)				125°F (See Note 5)			
		TONS	KW	EER	APLV	TONS	KW	EER	APLV	TONS	KW	EER	APLV
60	021SZB	24.3	28.3	9.2	14.3	23.3	29.3	8.6	13.9	22.3	30.3	8.0	14.1
	024SZB	27.5	35.2	8.6	14.2	26.3	36.4	8.0	13.7	—	—	—	—
	027SZB	29.8	38.3	8.6	14.5	28.7	39.5	8.1	14.0	—	—	—	—
	030SZB	35.5	45.4	8.5	13.0	34.2	47.0	7.9	13.5	33.1	48.6	7.4	13.1
	035SZB	40.1	50.8	8.7	13.8	38.7	52.5	8.1	13.4	—	—	—	—
	030DZB	35.7	42.4	9.3	15.3	34.0	43.7	8.6	14.9	32.2	44.8	8.0	14.4
	035DZB	41.4	51.3	9.0	14.6	39.8	52.9	8.4	14.2	—	—	—	—
	040DZB	46.9	55.8	9.0	14.5	44.9	57.7	8.4	14.1	43.0	59.5	7.8	13.7
	045DZB	51.5	65.9	8.6	14.4	—	—	—	—	—	—	—	—
	050DZB	56.8	73.1	8.6	13.7	54.6	75.6	8.0	13.3	—	—	—	—
	052DZB	58.0	77.6	8.3	13.2	—	—	—	—	—	—	—	—
	055DZB	63.0	86.7	8.1	12.4	—	—	—	—	—	—	—	—
	062DZB	71.4	91.0	8.5	13.7	68.9	94.2	8.0	13.4	66.4	97.4	7.4	13.0
	070DZB	77.3	101.9	8.3	13.2	74.7	105.1	7.8	12.8	—	—	—	—
	075DZB	84.0	111.6	8.3	13.6	80.8	115.0	7.8	13.3	—	—	—	—
	080DZB	88.7	122.3	8.1	12.4	85.2	125.8	7.6	12.0	—	—	—	—
	085DZB	98.1	125.0	8.5	14.1	93.7	129.0	7.9	13.8	89.2	133.0	7.3	14.0
	090DZB	103.1	131.1	8.6	14.7	98.9	135.1	8.0	14.3	—	—	—	—
	100DZB	110.1	147.7	8.2	14.5	105.7	152.6	7.7	14.2	—	—	—	—
	102DZB	114.5	153.9	8.2	14.5	—	—	—	—	—	—	—	—
	112DZB	128.5	166.9	8.4	13.9	124.0	172.5	7.9	13.6	—	—	—	—
	120DZB	139.9	190.0	8.1	14.2	—	—	—	—	—	—	—	—
	130DZB	147.7	197.7	8.3	14.1	142.9	204.2	7.8	13.8	—	—	—	—
	140DZB	156.0	204.8	8.4	13.9	150.8	211.4	7.9	13.6	—	—	—	—
	155DZB	171.5	225.4	8.4	14.3	165.3	232.3	7.9	14.0	—	—	—	—
	170DZB	184.8	250.7	8.2	14.2	—	—	—	—	—	—	—	—
	180DZB	205.9	276.3	8.3	13.6	198.8	283.6	7.8	13.3	—	—	—	—
	185DZB	212.9	282.0	8.4	13.8	205.6	289.6	7.9	13.5	—	—	—	—
	190DZB	220.1	308.6	8.0	12.1	—	—	—	—	—	—	—	—
	200DZB	227.9	315.6	8.1	12.3	—	—	—	—	—	—	—	—

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 10°F water range in evaporator & .0001 fouling factor
(2) ARI Standard 550/590-98 **"NPLV"** ("**N**on-**S**tandard **P**art **L**oad **V**alue) has replaced ARI Standard 590-92 **"APLV"** (**A**pplied **P**art **L**oad **V**alue) ratings.
(3) Interpolation between ratings is permissable but extrapolation is **not**
(4) KW is for compressor only. EER is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(5) **High Ambient Applications over 118°F require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

For your information...

All optional split-system chillers feature standard temperature sensors with a reduced-mass element for fast reaction time. The element is only 0.188" OD x 1 1/2" long.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
°C	MODEL	kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
4.5	021SZB	73.5	19.8	3.2	69.3	21.1	2.9	65.1	22.5	2.5
	024SZB	84.3	24.2	3.1	79.4	25.8	2.7	74.5	27.4	2.4
	**027SZB	97.0	27.2	3.2	91.2	28.9	2.8	85.4	30.6	2.5
	**030SZB	114.9	32.1	3.1	107.9	34.3	2.8	101.2	36.5	2.5
	**035SZB	125.5	35.6	3.1	117.9	38.1	2.8	110.5	40.5	2.4
	**030DZB	113.3	30.0	3.4	105.9	32.1	3.0	98.5	34.2	2.6
	**035DZB	133.9	36.6	3.3	125.6	39.1	2.9	117.4	41.6	2.6
	**040DZB	146.7	39.5	3.2	138.3	42.2	2.9	129.9	44.9	2.5
	**045DZB	170.5	47.5	3.2	160.4	50.5	2.8	150.3	53.5	2.5
	**050DZB	182.2	51.6	3.1	171.2	54.8	2.8	160.4	58.0	2.5
	**052DZB	191.4	55.2	3.1	179.9	58.5	2.8	168.3	61.7	2.5
	**055DZB	204.8	60.9	3.0	192.6	64.6	2.7	180.8	68.3	2.4
	**062DZB	229.8	64.2	3.1	215.0	68.5	2.8	200.5	72.6	2.4
	**070DZB	251.0	72.5	3.1	234.7	77.3	2.7	218.8	81.8	2.4
	**075DZB	271.9	79.3	3.1	254.6	84.4	2.7	237.4	89.3	2.4
	**080DZB	291.9	87.4	3.0	273.6	92.7	2.7	255.2	97.8	2.4
	**085DZB	314.8	88.7	3.1	295.9	94.4	2.8	276.8	99.9	2.5
	**090DZB	341.5	94.8	3.2	320.6	100.7	2.8	299.7	106.5	2.5
	**100DZB	363.1	104.8	3.1	340.6	111.2	2.8	318.2	117.4	2.4
	**102DZB	383.2	110.5	3.1	359.8	117.0	2.8	336.1	123.3	2.5
	**112DZB	424.7	119.6	3.1	398.0	127.2	2.8	371.9	134.6	2.5
	**120DZB	452.7	132.7	3.0	423.9	141.1	2.7	396.2	149.4	2.4
	**130DZB	475.3	138.9	3.1	445.2	147.8	2.7	416.0	156.6	2.4
	**140DZB	498.2	144.6	3.0	466.7	154.1	2.7	436.0	163.4	2.4
	**155DZB	556.0	160.1	3.1	521.9	170.6	2.8	488.0	180.8	2.4
	**170DZB	596.6	176.5	3.1	560.5	187.7	2.7	524.0	198.4	2.4
	**180DZB	650.5	197.0	3.0	612.0	208.5	2.7	573.9	219.5	2.4
	185DZB	650.5	197.0	3.0	612.0	208.5	2.7	573.9	219.5	2.4
	**190DZB	701.7	223.0	2.9	660.7	234.7	2.6	620.8	245.6	2.3
	200DZB	701.7	223.0	2.9	660.7	234.7	2.6	620.8	245.6	2.3
5.5	021SZB	76.1	20.0	3.3	71.8	21.4	2.9	67.4	22.8	2.6
	024SZB	87.2	24.6	3.1	82.2	26.2	2.8	77.1	27.8	2.5
	027SZB	97.4	27.3	3.2	91.6	29.0	2.9	85.8	30.6	2.5
	030SZB	111.8	31.7	3.1	105.1	33.9	2.7	98.6	36.0	2.4
	*035SZB	126.2	35.7	3.1	118.6	38.2	2.8	111.1	40.6	2.5
	030DZB	113.1	30.0	3.4	105.8	32.1	3.0	98.5	34.2	2.6
	035DZB	134.7	36.7	3.3	126.5	39.2	2.9	118.2	41.7	2.6
	040DZB	147.3	39.5	3.2	138.9	42.3	2.9	130.5	44.9	2.5
	045DZB	166.0	46.9	3.1	156.4	49.9	2.8	146.7	52.8	2.5
	050DZB	183.2	51.7	3.2	172.4	55.0	2.8	161.7	58.2	2.5
	052DZB	192.1	55.3	3.1	180.9	58.6	2.8	169.4	61.9	2.5
	055DZB	205.3	61.0	3.1	193.4	64.8	2.7	181.7	68.5	2.4
	062DZB	226.5	63.8	3.1	212.8	68.1	2.7	199.3	72.4	2.4
	070DZB	245.7	71.9	3.0	230.6	76.6	2.7	215.9	81.3	2.4
	075DZB	269.1	79.0	3.0	252.9	84.1	2.7	236.7	89.1	2.4
	080DZB	287.3	86.7	3.0	270.3	92.2	2.7	253.0	97.4	2.4
	085DZB	309.6	88.1	3.1	290.7	93.7	2.7	271.6	99.0	2.4
	*090DZB	337.6	94.3	3.2	317.4	100.3	2.8	296.9	106.1	2.5
	100DZB	357.8	104.2	3.1	336.3	110.5	2.7	314.7	116.7	2.4
	102DZB	377.4	109.7	3.1	354.7	116.2	2.8	331.8	122.5	2.5
	*112DZB	413.6	118.2	3.1	387.7	125.6	2.7	362.1	132.8	2.4
	120DZB	447.8	132.1	3.0	420.3	140.5	2.7	393.5	148.9	2.4
	130DZB	469.1	138.1	3.0	440.4	147.1	2.7	412.3	155.9	2.4
	140DZB	490.5	143.6	3.0	460.6	153.2	2.7	431.2	162.5	2.4
	155DZB	539.8	158.0	3.1	507.5	168.5	2.7	475.2	178.5	2.4
	170DZB	593.5	176.1	3.0	557.8	187.3	2.7	521.6	197.9	2.4
	180DZB	647.7	196.6	3.0	609.7	208.2	2.6	571.9	219.1	2.4
	185DZB	673.0	200.2	3.0	633.4	212.1	2.7	594.1	223.4	2.4
	190DZB	696.8	222.3	2.9	656.5	234.0	2.6	617.1	244.9	2.3
	200DZB	723.5	226.9	2.9	683.7	239.0	2.6	642.8	250.2	2.4

NOTES:
(1) Double asterisk (**) indicates ratings with RCH3 oversized evaporator for 40°F LWT
(2) Asterisk (*) indicates ratings with RCH2 oversized evaporator for 42°F LWT
(3) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(4) Interpolation between ratings is permissable but extrapolation is **not**
(5) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 6)			52°C (See Note 6)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
4.5	021SZB	60.0	24.0	2.2	57.3	24.7	2.1	54.6	25.5	1.9
	024SZB	68.6	29.2	2.1	65.6	30.2	2.0	62.6	31.1	1.8
	**027SZB	78.6	32.5	2.2	75.2	33.5	2.1	71.8	34.5	1.9
	**030SZB	93.6	39.1	2.1	90.0	40.4	2.0	86.7	41.7	1.9
	**035SZB	102.1	43.3	2.1	98.1	44.7	2.0	94.4	46.0	1.9
	**030DZB	89.4	36.4	2.2	84.7	37.4	2.1	79.9	38.3	1.9
	**035DZB	107.5	44.3	2.2	102.6	45.6	2.1	97.7	46.8	1.9
	**040DZB	119.5	47.9	2.2	114.1	49.4	2.1	108.7	50.8	1.9
	**045DZB	138.0	56.9	2.2	131.8	58.6	2.0	125.6	60.3	1.9
	**050DZB	147.4	61.8	2.2	140.8	63.7	2.0	134.3	65.6	1.9
	**052DZB	154.5	65.5	2.2	147.6	67.4	2.0	140.7	69.3	1.9
	**055DZB	166.9	72.7	2.1	160.2	74.9	2.0	—	—	—
	**062DZB	184.1	77.5	2.1	176.4	79.9	2.0	169.1	82.3	1.8
	**070DZB	200.7	87.1	2.1	192.2	89.5	1.9	184.1	91.9	1.8
	**075DZB	217.1	94.8	2.1	207.2	97.4	1.9	197.4	99.9	1.8
	**080DZB	232.8	103.6	2.1	221.6	106.3	1.9	210.1	108.9	1.8
	**085DZB	253.4	106.4	2.1	241.4	109.5	2.0	229.3	112.6	1.8
	**090DZB	274.3	113.1	2.2	261.4	116.3	2.0	248.4	119.5	1.9
	**100DZB	291.3	124.7	2.1	277.7	128.3	2.0	263.9	131.9	1.8
	**102DZB	307.7	130.7	2.1	293.4	134.3	2.0	278.9	137.9	1.9
	**112DZB	341.5	143.4	2.1	326.9	147.7	2.0	312.6	151.9	1.9
	**120DZB	365.0	159.3	2.1	350.5	164.1	2.0	336.9	169.0	1.8
	**130DZB	382.8	166.8	2.1	367.3	171.7	2.0	352.6	176.6	1.8
	**140DZB	400.8	174.0	2.1	384.3	179.0	1.9	368.5	183.9	1.8
	**155DZB	448.0	192.4	2.1	428.4	198.0	2.0	409.1	203.3	1.8
	**170DZB	479.7	210.5	2.1	457.3	216.3	1.9	434.7	221.8	1.8
	**180DZB	528.7	231.8	2.1	506.4	237.6	2.0	484.1	243.1	1.8
	185DZB	528.7	231.8	2.1	506.4	237.6	2.0	484.1	243.1	1.8
	**190DZB	574.7	257.7	2.1	552.5	263.4	1.9	530.8	268.7	1.8
	200DZB	574.7	257.7	2.1	552.5	263.4	1.9	530.8	268.7	1.8
5.5	021SZB	62.1	24.4	2.3	59.3	25.2	2.1	56.5	25.9	1.9
	024SZB	71.0	29.8	2.2	67.9	30.7	2.0	64.8	31.7	1.9
	027SZB	79.0	32.6	2.2	75.6	33.6	2.1	72.2	34.6	1.9
	030SZB	91.2	38.6	2.1	87.7	39.9	2.0	84.5	41.1	1.8
	*035SZB	102.7	43.4	2.1	98.7	44.8	2.0	94.9	46.1	1.9
	030DZB	89.5	36.4	2.2	84.8	37.4	2.1	80.1	38.3	1.9
	035DZB	108.3	44.4	2.2	103.3	45.7	2.1	98.4	47.0	1.9
	040DZB	120.0	48.0	2.2	114.7	49.5	2.1	109.3	51.0	1.9
	045DZB	135.0	56.2	2.2	129.0	57.9	2.0	123.0	59.5	1.9
	050DZB	148.8	62.1	2.2	142.3	64.1	2.0	135.8	66.0	1.9
	052DZB	155.7	65.8	2.2	148.9	67.8	2.0	142.1	69.7	1.9
	055DZB	168.1	73.0	2.1	161.5	75.2	2.0	—	—	—
	062DZB	184.0	77.5	2.1	176.8	80.0	2.0	170.0	82.6	1.9
	070DZB	199.2	86.7	2.1	191.3	89.3	1.9	183.8	91.8	1.8
	075DZB	217.7	94.9	2.1	208.4	97.7	1.9	199.2	100.4	1.8
	080DZB	232.1	103.5	2.1	221.6	106.3	1.9	210.9	109.1	1.8
	085DZB	248.3	105.3	2.1	236.2	108.3	2.0	224.0	111.2	1.8
	*090DZB	272.1	112.7	2.2	259.4	115.9	2.0	246.6	119.0	1.9
	100DZB	288.4	124.0	2.1	275.0	127.7	2.0	261.5	131.3	1.8
	102DZB	304.1	129.9	2.1	290.1	133.5	2.0	275.8	137.0	1.8
	*112DZB	332.1	141.2	2.1	317.4	145.3	2.0	302.9	149.3	1.8
	120DZB	363.2	158.9	2.1	349.0	163.8	1.9	335.6	168.6	1.8
	130DZB	380.1	166.2	2.1	364.9	171.2	2.0	350.5	176.0	1.8
	140DZB	397.3	173.2	2.1	381.2	178.3	1.9	365.8	183.1	1.8
	155DZB	437.1	190.1	2.1	417.8	195.5	2.0	399.1	200.6	1.8
	170DZB	477.4	210.0	2.1	455.4	215.8	1.9	432.4	221.2	1.8
	180DZB	526.7	231.4	2.1	504.3	237.1	1.9	482.1	242.6	1.8
	185DZB	547.6	236.1	2.1	524.5	242.1	2.0	501.6	247.8	1.9
	190DZB	571.3	256.9	2.1	549.0	262.5	1.9	527.2	267.8	1.8
	200DZB	595.6	262.8	2.1	572.8	268.6	2.0	550.6	274.1	1.9

NOTES:
(1) Double asterisk (**) indicates ratings with RCH3 oversized evaporator for 40°F LWT
(2) Asterisk (*) indicates ratings with RCH2 oversized evaporator for 42°F LWT
(3) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(4) Interpolation between ratings is permissable but extrapolation is **not**
(5) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(6) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
°C	MODEL	kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
6.5	021SZB	78.7	20.3	3.4	74.2	21.7	3.0	69.7	23.1	2.7
	024SZB	90.2	24.9	3.2	85.0	26.6	2.9	79.7	28.3	2.5
	027SZB	100.4	27.7	3.3	94.4	29.4	2.9	88.5	31.1	2.6
	030SZB	115.4	32.2	3.1	108.5	34.4	2.8	101.8	36.6	2.5
	035SZB	130.3	36.2	3.2	122.4	38.7	2.8	114.8	41.2	2.5
	030DZB	117.5	30.4	3.4	109.9	32.6	3.0	102.3	34.7	2.7
	035DZB	139.4	37.2	3.4	130.9	39.8	3.0	122.4	42.3	2.7
	040DZB	152.3	40.1	3.3	143.6	42.9	2.9	134.9	45.6	2.6
	045DZB	171.3	47.6	3.2	161.4	50.7	2.8	151.5	53.6	2.5
	050DZB	189.1	52.4	3.2	178.0	55.8	2.9	166.9	59.2	2.6
	052DZB	197.2	56.1	3.2	186.1	59.5	2.8	174.6	62.9	2.5
	055DZB	211.4	61.9	3.1	199.1	65.8	2.8	187.1	69.7	2.5
	062DZB	233.9	64.7	3.2	219.6	69.2	2.8	205.8	73.6	2.5
	070DZB	253.6	72.9	3.1	238.1	77.8	2.7	223.0	82.6	2.4
	075DZB	277.8	80.1	3.1	261.0	85.4	2.8	244.4	90.5	2.4
	080DZB	296.5	88.0	3.0	278.9	93.7	2.7	261.1	99.0	2.4
	085DZB	320.4	89.3	3.1	301.0	95.1	2.8	281.3	100.7	2.5
	090DZB	348.7	95.6	3.2	327.8	101.8	2.9	306.8	107.8	2.5
	100DZB	369.7	105.7	3.1	347.4	112.3	2.8	325.1	118.7	2.5
	102DZB	388.0	111.3	3.1	365.7	118.0	2.8	342.2	124.5	2.5
	112DZB	427.2	119.9	3.1	400.4	127.6	2.8	374.1	135.0	2.5
	120DZB	462.6	134.1	3.1	434.3	142.9	2.7	406.7	151.5	2.4
	130DZB	484.5	140.2	3.1	455.1	149.4	2.8	426.2	158.5	2.4
	140DZB	506.5	145.7	3.1	475.9	155.5	2.7	445.8	165.1	2.4
	155DZB	557.8	160.4	3.1	524.7	171.1	2.8	491.4	181.5	2.5
	170DZB	613.7	178.9	3.1	576.8	190.4	2.8	539.5	201.4	2.5
	180DZB	669.7	199.7	3.0	630.6	211.7	2.7	591.5	223.0	2.4
	185DZB	695.9	203.4	3.1	655.1	215.7	2.8	614.7	227.4	2.5
	190DZB	718.6	226.0	2.9	679.0	238.1	2.6	638.7	249.4	2.4
	200DZB	744.9	230.8	2.9	704.8	243.2	2.7	665.2	254.9	2.4
7.0	021SZB	80.0	20.4	3.4	75.5	21.9	3.0	70.9	23.3	2.7
	024SZB	91.7	25.1	3.2	86.4	26.8	2.9	81.0	28.5	2.6
	027SZB	102.0	27.8	3.3	95.8	29.6	2.9	89.8	31.3	2.6
	030SZB	117.2	32.4	3.2	110.3	34.7	2.8	103.5	36.9	2.5
	035SZB	132.3	36.4	3.2	124.4	39.0	2.8	116.7	41.5	2.5
	030DZB	119.7	30.6	3.5	112.0	32.8	3.1	104.3	35.0	2.7
	035DZB	137.0	36.9	3.4	128.7	39.5	3.0	120.3	42.0	2.6
	040DZB	154.8	40.3	3.3	146.0	43.2	2.9	137.1	46.0	2.6
	045DZB	173.9	47.9	3.2	164.0	51.0	2.9	153.9	54.1	2.5
	050DZB	192.1	52.8	3.3	180.8	56.2	2.9	169.5	59.6	2.6
	052DZB	199.9	56.5	3.2	188.6	60.0	2.8	177.2	63.4	2.5
	055DZB	214.5	62.4	3.1	202.0	66.3	2.8	189.8	70.2	2.5
	062DZB	237.6	65.2	3.2	223.1	69.7	2.8	209.1	74.1	2.5
	070DZB	257.5	73.4	3.1	241.8	78.4	2.8	226.4	83.2	2.4
	075DZB	282.2	80.7	3.1	265.1	86.0	2.8	248.3	91.3	2.5
	080DZB	301.3	88.7	3.1	283.3	94.4	2.7	265.2	99.9	2.4
	085DZB	325.9	90.0	3.2	306.2	95.9	2.8	286.2	101.5	2.5
	090DZB	346.5	95.4	3.2	325.2	101.4	2.9	303.7	107.2	2.5
	100DZB	375.6	106.5	3.2	353.0	113.2	2.8	330.3	119.7	2.5
	102DZB	393.3	112.0	3.2	371.1	118.9	2.8	347.5	125.5	2.5
	112DZB	427.9	120.1	3.1	402.4	127.9	2.8	377.1	135.6	2.5
	120DZB	470.0	135.2	3.1	441.3	144.1	2.8	413.4	152.8	2.5
	130DZB	492.3	141.2	3.1	462.4	150.6	2.8	433.1	159.9	2.5
	140DZB	514.7	146.7	3.1	483.6	156.7	2.8	453.0	166.4	2.4
	155DZB	567.1	161.6	3.1	533.4	172.4	2.8	499.7	182.9	2.5
	170DZB	623.4	180.3	3.1	586.5	192.0	2.8	548.4	203.2	2.5
	180DZB	680.8	201.3	3.0	641.2	213.4	2.7	601.6	224.9	2.4
	185DZB	707.5	205.0	3.1	666.2	217.5	2.8	625.2	229.3	2.5
	190DZB	729.1	227.9	2.9	690.1	240.2	2.6	649.6	251.6	2.4
	200DZB	755.7	232.7	3.0	715.2	245.3	2.7	675.7	257.2	2.4

NOTES: (1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
6.5	021SZB	64.2	24.8	2.3	61.3	25.6	2.1	—	—	—
	024SZB	73.4	30.3	2.2	70.2	31.3	2.0	—	—	—
	027SZB	81.5	33.2	2.2	78.0	34.2	2.1	—	—	—
	030SZB	94.2	39.2	2.1	90.6	40.6	2.0	—	—	—
	035SZB	106.1	44.1	2.2	101.9	45.5	2.0	—	—	—
	030DZB	93.0	37.0	2.3	88.2	38.0	2.1	—	—	—
	035DZB	112.2	45.2	2.3	107.1	46.5	2.1	—	—	—
	040DZB	124.1	48.8	2.3	118.6	50.3	2.1	—	—	—
	045DZB	139.4	57.2	2.2	133.2	58.9	2.0	—	—	—
	050DZB	153.6	63.2	2.2	146.9	65.2	2.1	—	—	—
	052DZB	160.6	66.9	2.2	153.6	68.9	2.0	—	—	—
	055DZB	173.3	74.3	2.2	166.6	76.6	2.0	—	—	—
	062DZB	190.0	78.8	2.2	182.6	81.4	2.0	—	—	—
	070DZB	205.7	88.1	2.1	197.6	90.8	2.0	—	—	—
	075DZB	224.7	96.5	2.1	215.1	99.3	2.0	—	—	—
	080DZB	239.5	105.2	2.1	228.8	108.2	1.9	—	—	—
	085DZB	257.0	107.2	2.1	244.5	110.3	2.0	—	—	—
	090DZB	281.2	114.6	2.2	268.2	118.0	2.1	—	—	—
	100DZB	297.9	126.3	2.1	284.2	130.1	2.0	—	—	—
	102DZB	313.9	132.2	2.2	299.5	135.9	2.0	—	—	—
	112DZB	343.1	143.8	2.2	328.0	148.0	2.0	—	—	—
	120DZB	375.3	161.8	2.1	360.7	166.9	2.0	—	—	—
	130DZB	393.0	169.1	2.1	377.4	174.3	2.0	—	—	—
	140DZB	410.9	176.1	2.1	394.3	181.4	2.0	—	—	—
	155DZB	451.8	193.3	2.1	432.3	198.9	2.0	—	—	—
	170DZB	494.1	214.0	2.1	470.7	219.7	2.0	—	—	—
	180DZB	545.2	235.7	2.1	522.2	241.6	2.0	—	—	—
	185DZB	566.8	240.5	2.2	543.1	246.6	2.0	—	—	—
	190DZB	591.7	261.8	2.1	568.9	267.6	2.0	—	—	—
	200DZB	616.8	267.8	2.1	593.4	273.8	2.0	—	—	—
7.0	021SZB	65.3	25.0	2.3	62.4	25.8	2.2	59.4	26.6	2.0
	024SZB	74.6	30.6	2.2	71.3	31.6	2.1	68.0	32.6	1.9
	027SZB	82.7	33.4	2.3	79.2	34.5	2.1	75.7	35.5	2.0
	030SZB	95.7	39.6	2.2	92.1	40.9	2.0	88.6	42.2	1.9
	035SZB	107.8	44.5	2.2	103.6	45.9	2.0	99.6	47.3	1.9
	030DZB	94.8	37.3	2.3	89.8	38.3	2.1	84.8	39.3	2.0
	035DZB	110.3	44.8	2.3	105.3	46.2	2.1	100.3	47.4	2.0
	040DZB	126.2	49.2	2.3	120.6	50.7	2.1	114.8	52.3	2.0
	045DZB	141.6	57.6	2.2	135.4	59.4	2.1	129.1	61.1	1.9
	050DZB	156.0	63.7	2.2	149.2	65.8	2.1	142.4	67.8	1.9
	052DZB	163.1	67.5	2.2	156.0	69.5	2.1	—	—	—
	055DZB	175.8	75.0	2.2	169.0	77.3	2.0	—	—	—
	062DZB	193.0	79.5	2.2	185.5	82.1	2.0	178.3	84.8	1.9
	070DZB	208.9	88.8	2.1	200.8	91.5	2.0	192.9	94.2	1.9
	075DZB	228.3	97.3	2.1	218.5	100.2	2.0	208.9	102.9	1.9
	080DZB	243.4	106.1	2.1	232.4	109.1	2.0	221.3	112.0	1.8
	085DZB	261.4	108.2	2.2	248.8	111.3	2.0	235.9	114.5	1.9
	090DZB	277.6	113.9	2.2	264.3	117.1	2.0	250.8	120.2	1.9
	100DZB	302.8	127.5	2.2	288.9	131.3	2.0	274.8	135.1	1.9
	102DZB	318.8	133.3	2.2	304.3	137.2	2.0	289.7	140.9	1.9
	112DZB	347.4	144.7	2.2	332.9	149.2	2.0	318.6	153.6	1.9
	120DZB	381.6	163.3	2.1	366.7	168.5	2.0	352.6	173.6	1.9
	130DZB	399.6	170.6	2.1	383.8	175.9	2.0	368.7	181.0	1.9
	140DZB	417.7	177.6	2.1	401.0	183.0	2.0	384.8	188.1	1.9
	155DZB	459.5	195.0	2.2	439.6	200.7	2.0	419.9	206.2	1.9
	170DZB	502.2	215.8	2.1	478.7	221.7	2.0	454.8	227.5	1.8
	180DZB	554.6	237.8	2.1	531.3	243.8	2.0	508.0	249.5	1.9
	185DZB	576.5	242.7	2.2	552.5	248.9	2.0	528.5	254.9	1.9
	190DZB	602.1	264.3	2.1	579.0	270.1	2.0	—	—	—
	200DZB	627.5	270.3	2.1	603.9	276.5	2.0	—	—	—

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
°C	MODEL	kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
8.0	021SZB	82.6	20.7	3.5	78.0	22.2	3.1	73.2	23.7	2.7
	024SZB	94.7	25.5	3.3	89.2	27.2	2.9	83.7	29.0	2.6
	027SZB	105.1	28.2	3.3	98.7	30.0	3.0	92.5	31.8	2.6
	030SZB	121.0	32.8	3.2	113.8	35.2	2.9	106.8	37.5	2.5
	035SZB	136.6	36.9	3.3	128.4	39.5	2.9	120.4	42.1	2.6
	030DZB	124.1	31.0	3.6	116.2	33.3	3.1	108.2	35.5	2.8
	035DZB	141.7	37.4	3.4	133.1	40.1	3.0	124.5	42.7	2.7
	040DZB	159.9	40.8	3.4	150.9	43.8	3.0	141.7	46.6	2.7
	045DZB	179.0	48.5	3.3	169.0	51.7	2.9	158.7	54.9	2.6
	050DZB	198.2	53.5	3.3	186.5	57.0	2.9	174.8	60.5	2.6
	052DZB	205.3	57.3	3.2	193.6	60.8	2.9	182.2	64.4	2.6
	055DZB	220.7	63.3	3.2	207.8	67.4	2.8	195.2	71.4	2.5
	062DZB	245.0	66.1	3.2	230.1	70.7	2.9	215.6	75.3	2.5
	070DZB	265.6	74.4	3.2	249.4	79.5	2.8	233.6	84.5	2.5
	075DZB	291.0	81.8	3.2	273.6	87.3	2.8	256.2	92.7	2.5
	080DZB	310.7	90.0	3.1	292.3	95.9	2.8	273.8	101.5	2.5
	085DZB	337.1	91.2	3.2	316.7	97.3	2.9	295.9	103.2	2.6
	090DZB	357.8	96.7	3.3	335.8	102.9	2.9	313.6	108.9	2.6
	100DZB	386.9	108.0	3.2	364.3	114.9	2.9	340.9	121.7	2.5
	102DZB	404.0	113.6	3.2	381.1	120.6	2.9	358.2	127.5	2.6
	112DZB	441.4	121.8	3.2	415.1	129.8	2.9	389.1	137.8	2.5
	120DZB	484.0	137.3	3.2	455.6	146.5	2.8	426.9	155.5	2.5
	130DZB	508.2	143.4	3.2	477.5	153.0	2.8	447.4	162.5	2.5
	140DZB	531.3	148.8	3.2	499.4	159.1	2.8	468.0	169.1	2.5
	155DZB	585.8	163.9	3.2	551.2	175.1	2.8	516.5	185.9	2.5
	170DZB	641.8	183.1	3.2	605.7	195.1	2.8	566.9	206.6	2.5
	180DZB	703.2	204.5	3.1	662.5	217.0	2.8	622.0	228.8	2.5
	185DZB	730.3	208.3	3.2	688.5	221.1	2.8	646.4	233.3	2.5
	190DZB	750.1	231.8	3.0	710.3	244.4	2.7	671.4	256.2	2.4
	200DZB	777.4	236.6	3.0	736.0	249.6	2.7	695.7	261.8	2.5
9.0	021SZB	85.4	20.9	3.5	80.5	22.5	3.1	75.7	24.0	2.8
	024SZB	97.8	25.8	3.4	92.1	27.6	3.0	86.4	29.4	2.7
	027SZB	107.9	28.6	3.4	101.7	30.4	3.0	95.3	32.3	2.7
	030SZB	124.8	33.3	3.3	117.4	35.7	2.9	110.3	38.0	2.6
	035SZB	140.9	37.4	3.3	132.5	40.1	3.0	124.3	42.7	2.6
	030DZB	128.5	31.4	3.7	120.4	33.8	3.2	112.2	36.0	2.8
	035DZB	146.4	37.9	3.5	137.5	40.7	3.1	128.7	43.3	2.7
	040DZB	165.1	41.3	3.5	155.8	44.4	3.1	146.3	47.3	2.7
	045DZB	184.3	49.1	3.3	173.9	52.5	3.0	163.5	55.7	2.6
	050DZB	204.2	54.2	3.4	192.3	57.8	3.0	180.2	61.5	2.7
	052DZB	210.7	58.1	3.3	198.7	61.7	2.9	186.9	65.4	2.6
	055DZB	226.7	64.2	3.2	213.7	68.4	2.9	200.8	72.6	2.5
	062DZB	252.7	66.9	3.3	237.4	71.7	2.9	222.5	76.4	2.6
	070DZB	273.8	75.4	3.2	257.2	80.6	2.9	241.0	85.8	2.5
	075DZB	299.6	83.0	3.2	282.2	88.6	2.9	264.2	94.1	2.6
	080DZB	319.3	91.4	3.2	301.4	97.3	2.8	282.3	103.1	2.5
	085DZB	348.5	92.5	3.3	327.3	98.8	2.9	305.9	104.9	2.6
	090DZB	369.4	98.0	3.3	346.6	104.4	3.0	323.7	110.6	2.6
	100DZB	397.8	109.6	3.3	375.4	116.7	2.9	351.7	123.7	2.6
	102DZB	415.0	115.2	3.2	391.3	122.4	2.9	367.8	129.5	2.6
	112DZB	455.2	123.4	3.3	428.1	131.8	2.9	401.4	140.0	2.6
	120DZB	497.6	139.4	3.2	469.3	148.8	2.9	440.8	158.2	2.5
	130DZB	524.0	145.5	3.2	492.9	155.4	2.9	462.0	165.2	2.6
	140DZB	548.2	150.9	3.2	515.5	161.5	2.9	483.3	171.7	2.5
	155DZB	604.9	166.3	3.3	569.2	177.8	2.9	533.4	188.9	2.6
	170DZB	660.4	186.0	3.2	623.1	198.3	2.9	585.7	210.1	2.6
	180DZB	725.9	207.7	3.2	684.5	220.5	2.8	642.8	232.7	2.5
	185DZB	751.4	211.5	3.2	710.7	224.7	2.9	668.0	237.3	2.6
	190DZB	771.3	235.6	3.0	730.7	248.5	2.7	690.9	260.7	2.4
	200DZB	799.3	240.5	3.0	757.0	253.9	2.7	715.9	266.4	2.5

NOTES: (1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
8.0	021SZB	67.4	25.4	2.4	64.4	26.2	2.2	61.4	27.0	2.0
	024SZB	77.0	31.1	2.3	73.6	32.2	2.1	70.2	33.2	1.9
	027SZB	85.2	34.0	2.3	81.6	35.0	2.1	78.0	36.1	2.0
	030SZB	98.8	40.2	2.2	95.1	41.6	2.1	91.5	43.0	1.9
	035SZB	111.3	45.2	2.2	107.0	46.6	2.1	102.9	48.1	2.0
	030DZB	98.4	37.9	2.4	93.3	39.0	2.2	87.9	39.9	2.0
	035DZB	114.2	45.6	2.3	109.0	46.9	2.2	103.8	48.3	2.0
	040DZB	130.4	49.9	2.3	124.5	51.6	2.2	118.6	53.1	2.0
	045DZB	146.1	58.6	2.3	139.7	60.4	2.1	—	—	—
	050DZB	160.9	64.8	2.3	153.9	66.9	2.1	146.9	69.0	2.0
	052DZB	168.0	68.6	2.2	160.8	70.7	2.1	—	—	—
	055DZB	180.8	76.3	2.2	173.9	78.7	2.0	—	—	—
	062DZB	199.1	80.8	2.2	191.3	83.5	2.1	184.0	86.2	1.9
	070DZB	215.6	90.3	2.2	207.1	93.1	2.0	199.0	95.8	1.9
	075DZB	235.6	98.8	2.2	225.5	101.8	2.0	215.6	104.7	1.9
	080DZB	251.1	107.9	2.1	239.7	111.0	2.0	228.2	113.9	1.9
	085DZB	270.4	110.1	2.2	257.3	113.4	2.0	244.0	116.6	1.9
	090DZB	286.7	115.8	2.2	273.1	119.1	2.1	259.2	122.4	1.9
	100DZB	312.6	129.8	2.2	298.2	133.8	2.0	283.8	137.7	1.9
	102DZB	328.8	135.6	2.2	314.0	139.6	2.1	—	—	—
	112DZB	358.6	147.2	2.2	343.7	151.9	2.1	329.1	156.4	1.9
	120DZB	394.3	166.3	2.2	379.0	171.7	2.0	364.5	177.0	1.9
	130DZB	412.9	173.7	2.2	396.6	179.1	2.0	381.1	184.3	1.9
	140DZB	431.7	180.6	2.2	414.4	186.1	2.0	397.7	191.4	1.9
	155DZB	474.9	198.3	2.2	454.4	204.2	2.0	434.0	209.9	1.9
	170DZB	519.2	219.6	2.2	494.8	225.8	2.0	470.1	231.7	1.9
	180DZB	573.7	242.0	2.2	549.7	248.2	2.0	525.6	254.2	1.9
	185DZB	596.3	247.1	2.2	571.5	253.5	2.1	546.9	259.7	1.9
	190DZB	622.8	269.3	2.1	599.2	275.3	2.0	—	—	—
	200DZB	649.1	275.4	2.2	625.1	281.8	2.1	—	—	—
9.0	021SZB	69.6	25.8	2.4	66.6	26.6	2.2	63.4	27.5	2.1
	024SZB	79.5	31.6	2.3	75.9	32.7	2.1	72.4	33.9	2.0
	027SZB	87.8	34.5	2.3	84.1	35.6	2.2	80.4	36.7	2.0
	030SZB	102.0	40.9	2.2	98.1	42.3	2.1	94.4	43.7	2.0
	035SZB	114.9	45.9	2.3	110.4	47.4	2.1	106.2	48.8	2.0
	030DZB	101.9	38.5	2.4	96.6	39.6	2.2	91.2	40.6	2.1
	035DZB	118.1	46.3	2.4	112.7	47.7	2.2	107.4	49.1	2.0
	040DZB	134.6	50.7	2.4	128.6	52.4	2.2	122.5	54.0	2.0
	045DZB	150.6	59.5	2.3	144.0	61.4	2.1	—	—	—
	050DZB	165.8	65.8	2.3	158.7	68.0	2.1	151.5	70.2	2.0
	052DZB	173.0	69.8	2.3	165.6	72.0	2.1	—	—	—
	055DZB	186.0	77.6	2.2	178.9	80.1	2.1	—	—	—
	062DZB	205.4	82.1	2.2	197.4	84.9	2.1	189.8	87.7	2.0
	070DZB	222.4	91.7	2.2	213.7	94.6	2.1	205.3	97.3	1.9
	075DZB	243.0	100.4	2.2	232.6	103.5	2.1	222.3	106.4	1.9
	080DZB	259.0	109.7	2.2	247.2	112.8	2.0	235.3	115.9	1.9
	085DZB	279.5	112.0	2.2	266.0	115.4	2.1	252.2	118.8	1.9
	090DZB	296.0	117.8	2.3	282.0	121.2	2.1	267.9	124.5	2.0
	100DZB	322.5	132.1	2.2	307.7	136.2	2.1	292.9	140.3	1.9
	102DZB	338.9	138.0	2.3	323.8	142.1	2.1	—	—	—
	112DZB	370.0	149.7	2.2	354.7	154.5	2.1	339.7	159.3	1.9
	120DZB	407.2	169.4	2.2	391.4	174.9	2.1	—	—	—
	130DZB	426.5	176.7	2.2	409.7	182.3	2.1	393.7	187.8	1.9
	140DZB	446.0	183.6	2.2	428.2	189.3	2.1	411.1	194.8	1.9
	155DZB	490.8	201.7	2.2	469.6	207.8	2.1	448.6	213.6	1.9
	170DZB	536.4	223.5	2.2	511.3	229.9	2.1	—	—	—
	180DZB	593.2	246.3	2.2	568.3	252.8	2.1	543.5	258.9	1.9
	185DZB	616.5	251.5	2.3	591.0	258.1	2.1	565.6	264.5	2.0
	190DZB	644.1	274.3	2.2	619.9	280.5	2.1	—	—	—
	200DZB	668.3	280.5	2.2	645.3	287.0	2.1	—	—	—

NOTES:
(1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT	AUDR-B	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
°C	MODEL	kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
10.0	021SZB	88.1	21.1	3.6	83.2	22.8	3.2	78.1	24.3	2.8
	024SZB	100.9	26.1	3.4	95.0	28.0	3.1	89.1	29.9	2.7
	027SZB	110.8	28.9	3.5	104.5	30.9	3.1	98.1	32.8	2.7
	030SZB	128.7	33.7	3.3	121.1	36.2	3.0	113.7	38.6	2.6
	035SZB	145.2	37.9	3.4	136.6	40.7	3.0	128.2	43.4	2.7
	030DZB	132.9	31.8	3.7	124.6	34.3	3.3	116.1	36.6	2.9
	035DZB	151.1	38.4	3.6	142.0	41.2	3.2	132.9	44.0	2.8
	040DZB	170.4	41.8	3.5	160.8	44.9	3.1	151.0	48.0	2.8
	045DZB	189.5	49.8	3.4	178.9	53.2	3.0	168.2	56.5	2.7
	050DZB	210.1	54.9	3.4	198.0	58.7	3.0	185.7	62.4	2.7
	052DZB	216.2	58.9	3.3	203.8	62.6	3.0	191.7	66.4	2.6
	055DZB	232.7	65.2	3.3	219.5	69.4	2.9	206.4	73.7	2.6
	062DZB	260.5	67.8	3.4	244.7	72.7	3.0	229.4	77.5	2.6
	070DZB	282.2	76.5	3.3	265.1	81.8	2.9	248.5	87.0	2.6
	075DZB	308.3	84.1	3.3	290.4	89.9	2.9	272.5	95.5	2.6
	080DZB	328.0	92.7	3.2	309.6	98.8	2.9	291.1	104.7	2.6
	085DZB	359.9	93.7	3.4	338.2	100.3	3.0	316.1	106.6	2.7
	090DZB	381.2	99.3	3.4	357.6	105.9	3.0	334.0	112.3	2.7
	100DZB	408.8	111.1	3.3	385.7	118.4	2.9	362.5	125.7	2.6
	102DZB	426.1	116.8	3.3	401.6	124.2	2.9	377.5	131.5	2.6
	112DZB	469.5	125.1	3.3	441.6	133.6	3.0	413.9	142.1	2.6
	120DZB	511.4	141.5	3.3	482.4	151.2	2.9	454.1	160.8	2.6
	130DZB	538.6	147.6	3.3	508.3	157.8	2.9	476.8	167.9	2.6
	140DZB	565.5	153.1	3.3	532.0	163.8	2.9	498.9	174.4	2.6
	155DZB	624.4	168.7	3.3	587.7	180.5	2.9	550.9	191.9	2.6
	170DZB	679.0	188.9	3.3	641.1	201.4	2.9	602.6	213.5	2.6
	180DZB	746.7	210.8	3.2	706.6	224.0	2.9	664.0	236.6	2.6
	185DZB	772.8	214.7	3.3	731.0	228.3	2.9	689.6	241.3	2.6
	190DZB	792.6	239.4	3.0	751.2	252.7	2.7	710.7	265.3	2.5
	200DZB	821.3	244.4	3.1	778.2	258.2	2.8	736.2	271.1	2.5
12.5	021SZB	95.2	21.7	3.8	89.9	23.5	3.4	84.4	25.1	3.0
	024SZB	108.7	27.0	3.6	102.6	29.0	3.2	96.1	31.0	2.8
	027SZB	118.2	29.9	3.6	111.4	31.9	3.2	104.7	33.9	2.8
	030SZB	138.8	34.8	3.5	130.6	37.4	3.1	122.6	40.0	2.7
	035SZB	156.7	39.1	3.6	147.4	42.1	3.2	138.5	44.9	2.8
	030DZB	144.0	32.8	3.9	135.1	35.4	3.5	126.0	37.9	3.0
	035DZB	163.3	39.5	3.8	153.7	42.6	3.3	143.9	45.5	2.9
	040DZB	184.0	43.0	3.7	173.6	46.3	3.3	163.1	49.6	2.9
	045DZB	203.2	51.3	3.5	191.7	55.0	3.1	180.2	58.5	2.8
	050DZB	225.3	56.6	3.6	212.3	60.7	3.2	199.3	64.7	2.8
	052DZB	230.4	60.8	3.4	217.1	64.8	3.1	204.0	68.8	2.7
	055DZB	248.1	67.5	3.4	234.0	72.0	3.0	220.3	76.6	2.7
	062DZB	280.7	69.9	3.5	263.7	75.1	3.1	247.2	80.4	2.8
	070DZB	302.3	79.0	3.4	285.4	84.7	3.0	268.0	90.3	2.7
	075DZB	330.6	87.0	3.4	311.5	93.1	3.0	292.4	99.1	2.7
	080DZB	350.4	96.0	3.3	330.8	102.5	3.0	311.0	108.8	2.6
	085DZB	389.6	96.8	3.6	366.1	103.8	3.1	342.1	110.7	2.8
	090DZB	409.1	102.5	3.6	385.4	109.6	3.2	360.6	116.5	2.8
	100DZB	437.0	114.9	3.4	412.0	122.8	3.0	387.1	130.6	2.7
	102DZB	454.5	120.7	3.4	428.3	128.6	3.0	402.4	136.6	2.7
	112DZB	503.8	129.2	3.5	475.7	138.4	3.1	446.5	147.5	2.7
	120DZB	546.9	146.5	3.4	516.0	157.0	3.0	486.0	167.4	2.7
	130DZB	576.2	152.8	3.4	544.0	163.8	3.0	512.6	174.6	2.7
	140DZB	606.9	158.3	3.4	573.4	169.9	3.0	539.6	181.2	2.7
	155DZB	669.6	174.8	3.5	633.1	187.3	3.1	596.3	199.6	2.7
	170DZB	728.0	196.0	3.4	687.5	209.5	3.0	646.1	222.4	2.7
	180DZB	799.3	218.8	3.3	756.9	232.9	3.0	714.5	246.4	2.7
	185DZB	827.2	222.8	3.4	783.0	237.4	3.0	739.0	251.3	2.7
	190DZB	846.7	249.0	3.1	803.2	263.3	2.8	760.7	276.7	2.5
	200DZB	877.0	254.2	3.2	831.7	268.9	2.9	787.7	282.8	2.6

NOTES: (1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
10.0	021SZB	71.9	26.2	2.5	68.7	27.0	2.3	65.5	27.9	2.1
	024SZB	81.9	32.1	2.3	78.3	33.3	2.2	74.6	34.5	2.0
	027SZB	90.4	35.1	2.4	86.6	36.2	2.2	—	—	—
	030SZB	105.2	41.5	2.3	101.2	43.0	2.1	97.4	44.5	2.0
	035SZB	118.5	46.6	2.3	113.9	48.1	2.2	109.6	49.6	2.0
	030DZB	105.5	39.1	2.5	100.0	40.2	2.3	94.3	41.2	2.1
	035DZB	122.0	47.1	2.4	116.5	48.5	2.2	111.0	49.9	2.1
	040DZB	138.9	51.5	2.4	132.7	53.2	2.2	126.3	54.9	2.1
	045DZB	155.2	60.4	2.3	148.5	62.4	2.2	—	—	—
	050DZB	170.9	66.9	2.3	163.5	69.2	2.2	—	—	—
	052DZB	177.4	70.9	2.3	170.4	73.2	2.1	—	—	—
	055DZB	191.2	78.9	2.2	184.0	81.5	2.1	—	—	—
	062DZB	211.9	83.4	2.3	203.6	86.3	2.1	195.7	89.2	2.0
	070DZB	229.4	93.1	2.2	220.4	96.1	2.1	211.7	98.9	2.0
	075DZB	250.6	102.0	2.3	239.9	105.2	2.1	—	—	—
	080DZB	267.0	111.5	2.2	254.9	114.7	2.1	—	—	—
	085DZB	288.8	113.9	2.3	274.8	117.5	2.1	260.6	121.0	2.0
	090DZB	305.5	119.7	2.3	291.2	123.2	2.1	276.5	126.7	2.0
	100DZB	332.5	134.4	2.3	317.4	138.7	2.1	—	—	—
	102DZB	348.8	140.3	2.3	333.8	144.6	2.1	—	—	—
	112DZB	381.7	152.2	2.3	366.0	157.2	2.1	350.6	162.1	2.0
	120DZB	420.4	172.4	2.2	404.1	178.2	2.1	—	—	—
	130DZB	440.4	179.8	2.3	423.2	185.5	2.1	—	—	—
	140DZB	460.7	186.7	2.2	442.3	192.5	2.1	424.8	198.2	2.0
	155DZB	507.0	205.1	2.3	485.2	211.4	2.1	463.5	217.4	2.0
	170DZB	554.1	227.5	2.3	528.2	234.0	2.1	—	—	—
	180DZB	612.8	250.7	2.2	587.3	257.3	2.1	561.9	263.6	2.0
	185DZB	637.0	255.9	2.3	610.8	262.8	2.1	—	—	—
	190DZB	663.5	279.2	2.2	640.6	285.7	2.1	—	—	—
	200DZB	687.6	285.5	2.2	664.1	292.3	2.1	—	—	—
12.5	021SZB	77.7	27.1	2.6	74.2	28.1	2.4	70.7	29.0	2.2
	024SZB	88.3	33.4	2.4	84.3	34.7	2.2	80.3	35.9	2.1
	027SZB	97.0	36.4	2.5	93.0	37.7	2.3	—	—	—
	030SZB	113.5	43.2	2.4	109.2	44.8	2.2	105.1	46.4	2.1
	035SZB	128.1	48.4	2.4	123.2	50.0	2.3	118.5	51.6	2.1
	030DZB	114.4	40.5	2.6	108.4	41.7	2.4	102.3	42.8	2.2
	035DZB	132.2	48.9	2.5	126.3	50.5	2.3	120.4	52.0	2.2
	040DZB	150.0	53.4	2.5	143.3	55.2	2.3	136.4	57.0	2.2
	045DZB	166.4	62.8	2.4	159.4	64.9	2.2	—	—	—
	050DZB	183.8	69.6	2.4	175.8	72.0	2.2	—	—	—
	052DZB	188.8	73.7	2.4	181.3	76.2	2.2	—	—	—
	055DZB	204.6	82.2	2.3	—	—	—	—	—	—
	062DZB	228.3	86.6	2.4	219.4	89.8	2.2	210.9	92.9	2.1
	070DZB	247.6	96.8	2.3	237.9	99.9	2.2	—	—	—
	075DZB	269.8	106.0	2.3	258.6	109.4	2.2	—	—	—
	080DZB	286.9	116.0	2.3	274.6	119.5	2.1	—	—	—
	085DZB	312.7	118.6	2.4	297.5	122.5	2.2	282.1	126.3	2.0
	090DZB	330.0	124.5	2.4	314.5	128.4	2.2	298.9	132.2	2.1
	100DZB	357.1	140.1	2.3	341.9	144.8	2.2	—	—	—
	102DZB	371.9	146.0	2.3	356.8	150.7	2.2	—	—	—
	112DZB	412.0	158.4	2.4	395.0	163.9	2.2	—	—	—
	120DZB	451.6	179.9	2.3	435.4	186.2	2.2	—	—	—
	130DZB	476.4	187.4	2.3	458.2	193.7	2.2	—	—	—
	140DZB	498.8	194.3	2.3	479.2	200.7	2.2	—	—	—
	155DZB	549.1	213.7	2.4	525.7	220.4	2.2	—	—	—
	170DZB	595.4	237.2	2.3	569.6	244.4	2.2	—	—	—
	180DZB	663.8	261.6	2.3	636.5	268.8	2.2	—	—	—
	185DZB	686.6	267.0	2.4	660.6	274.5	2.2	—	—	—
	190DZB	711.1	291.6	2.3	687.0	298.5	2.1	—	—	—
	200DZB	736.6	298.2	2.3	—	—	—	—	—	—

NOTES: (1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		30°C			35°C			40°C		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
15.5	021SZB	103.8	22.4	4.1	98.3	24.3	3.6	92.3	26.1	3.2
	024SZB	117.4	27.9	3.8	111.0	30.1	3.3	104.4	32.3	2.9
	027SZB	127.6	31.0	3.7	120.1	33.2	3.3	112.8	35.4	2.9
	030SZB	151.2	36.0	3.7	142.7	38.8	3.3	134.0	41.7	2.9
	035SZB	169.8	40.6	3.7	160.6	43.8	3.3	151.4	46.9	2.9
	030DZB	157.1	33.9	4.2	147.5	36.7	3.6	137.5	39.4	3.2
	035DZB	177.0	40.8	4.0	167.2	44.1	3.5	157.4	47.4	3.1
	040DZB	201.2	44.2	4.0	189.8	47.9	3.5	178.2	51.5	3.1
	045DZB	220.3	53.2	3.7	207.7	57.1	3.3	195.2	60.9	2.9
	050DZB	243.2	58.7	3.7	229.3	63.0	3.3	215.6	67.4	2.9
	052DZB	248.2	63.2	3.6	233.5	67.5	3.2	219.4	71.8	2.8
	055DZB	267.3	70.2	3.5	252.0	75.2	3.1	237.1	80.1	2.7
	062DZB	305.1	72.2	3.7	287.7	77.9	3.3	269.9	83.6	2.9
	070DZB	326.2	82.1	3.6	308.1	88.2	3.2	290.3	94.2	2.8
	075DZB	357.5	90.5	3.6	337.6	97.0	3.2	317.3	103.4	2.8
	080DZB	378.2	100.1	3.5	357.0	107.0	3.1	335.5	113.7	2.7
	085DZB	422.6	100.2	3.7	398.9	107.9	3.3	374.6	115.5	2.9
	090DZB	442.9	106.3	3.7	417.0	114.0	3.3	391.3	121.5	2.9
	100DZB	472.0	119.5	3.6	444.9	128.0	3.2	417.5	136.6	2.8
	102DZB	490.1	125.6	3.5	461.6	134.1	3.1	433.5	142.7	2.8
	112DZB	544.7	134.0	3.6	514.3	143.9	3.2	484.3	153.9	2.9
	120DZB	590.9	152.4	3.5	557.7	163.8	3.1	525.7	175.1	2.8
	130DZB	622.9	159.0	3.6	588.7	170.8	3.2	555.0	182.6	2.8
	140DZB	656.4	164.8	3.6	621.1	177.2	3.2	585.9	189.4	2.8
	155DZB	725.7	182.1	3.6	686.3	195.6	3.2	646.9	208.8	2.8
	170DZB	789.1	204.9	3.5	745.2	219.3	3.1	700.5	233.2	2.8
	180DZB	864.5	228.4	3.5	819.1	243.6	3.1	773.7	258.2	2.8
	185DZB	894.6	232.6	3.5	847.2	248.3	3.1	800.1	263.3	2.8
	190DZB	912.8	260.6	3.2	866.8	276.0	2.9	821.8	290.5	2.6
	200DZB	944.2	266.0	3.3	896.9	282.0	3.0	850.3	297.0	2.7

NOTES: (1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.

PERFORMANCE DATA: SPLIT-SYSTEM CHILLERS

60 Hz

LWT °C	AUDR-B MODEL	ENTERING CONDENSER AIR TEMPERATURE								
		45°C			49°C (See Note 4)			52°C (See Note 4)		
		kWo	kWi	COP	kWo	kWi	COP	kWo	kWi	COP
15.5	021SZB	84.9	28.2	2.7	81.1	29.3	2.5	77.3	30.3	2.3
	024SZB	96.1	35.0	2.5	91.7	36.3	2.3	—	—	—
	027SZB	104.4	38.1	2.5	100.3	39.4	2.4	—	—	—
	030SZB	124.1	45.1	2.5	119.3	46.9	2.3	114.9	48.6	2.2
	035SZB	140.2	50.6	2.5	134.8	52.4	2.4	—	—	—
	030DZB	125.1	42.3	2.7	118.5	43.5	2.5	111.7	44.7	2.3
	035DZB	144.8	51.0	2.6	138.4	52.8	2.5	—	—	—
	040DZB	163.8	55.6	2.6	156.6	57.6	2.5	149.1	59.5	2.3
	045DZB	180.2	65.5	2.5	—	—	—	—	—	—
	050DZB	198.9	72.7	2.5	190.4	75.4	2.3	—	—	—
	052DZB	202.9	77.1	2.4	—	—	—	—	—	—
	055DZB	220.3	86.2	2.4	—	—	—	—	—	—
	062DZB	249.3	90.4	2.5	239.6	93.9	2.3	230.2	97.3	2.2
	070DZB	269.7	101.3	2.4	259.8	104.7	2.3	—	—	—
	075DZB	292.8	110.9	2.4	280.8	114.5	2.3	—	—	—
	080DZB	309.4	121.4	2.4	296.1	125.1	2.2	—	—	—
	085DZB	342.4	124.2	2.5	325.7	128.5	2.3	—	—	—
	090DZB	360.3	130.3	2.5	343.9	134.6	2.3	—	—	—
	100DZB	384.9	146.9	2.4	368.5	152.0	2.2	—	—	—
	102DZB	400.6	153.0	2.4	—	—	—	—	—	—
	112DZB	449.3	165.9	2.5	432.0	171.9	2.3	—	—	—
	120DZB	488.8	188.8	2.4	—	—	—	—	—	—
	130DZB	516.3	196.6	2.4	497.7	203.4	2.3	—	—	—
	140DZB	545.1	203.7	2.5	525.5	210.6	2.3	—	—	—
	155DZB	599.6	224.1	2.5	576.0	231.5	2.3	—	—	—
	170DZB	645.6	249.1	2.4	—	—	—	—	—	—
	180DZB	719.4	274.7	2.4	692.3	282.5	2.3	—	—	—
	185DZB	743.9	280.3	2.5	716.0	288.4	2.3	—	—	—
	190DZB	768.7	306.7	2.3	—	—	—	—	—	—
	200DZB	796.0	313.8	2.4	—	—	—	—	—	—

NOTES: (1) Ratings based on ARI Standard 550/590-98, 5°C water range in evaporator & .018 fouling factor
(2) Interpolation between ratings is permissable but extrapolation is **not**
(3) KW is for compressor only. COP is for entire unit. See Electrical Data Tables on pages 84, 86 and 88 for fan kW.
(4) **High Ambient Applications over 48°C require High Pressure Limiting Option. HPL (High Pressure Limiting Control) is found in the ACM (Auxiliary Control Module) option on page 13.**

PHYSICAL SPECIFICATIONS: ENGLISH I.P. UNITS

AUDR-B 021S, 024S, 027S, 030S, 035S

AUDR-B MODEL	021S	024S	027S	030S	035S
Nominal Tons[1]	21	24	27	30	35
Quantity of Compressors	(1) 4D25	(1) 4D30	(1) 6D30	(1) 6D35	(1) 6D40
STANDARD OPTIONAL REMOTE COOLER MODULE for 44°F LWT (RCH1)[2]	CHS007601A	CHS007601A	CHS007601A	CHS007601B	CHS008601A
Water Volume, Gallons	5.5	5.5	5.5	5.5	7.0
Minimum Flow Rate, GPM	37	37	37	50	56
Maximum Flow Rate, GPM	104	104	104	168	172
Water Conn. Size In/Out (Type)	3" NPTE	3" NPTE	3" NPTE	3" NPTE	3" NPTE
OPTIONAL REMOTE COOLER MODULE for 42°F LWT (RCH2)[3]	NR	NR	NR	NR	NR
Water Volume, Gallons	—	—	—	—	—
Minimum Flow Rate, GPM	—	—	—	—	—
Maximum Flow Rate, GPM	—	—	—	—	—
Water Conn. Size In/Out (Type)	—	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 40°F LWT (RCH3)[4]	NR	NR	CHS008602A	CHS010601A	CHS010601A
Water Volume, Gallons	—	—	7.0	9.4	9.4
Minimum Flow Rate, GPM	—	—	42	62	62
Maximum Flow Rate, GPM	—	—	114	205	205
Water Conn. Size In/Out (Type)	—	—	4" NPTE	4" NPTE	4" NPTE
CONDENSER	L216	L312	L312	L216	L312
Fan Quantity - All 30" Diameter	2	2	2	3	3
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity [5]	(1) 2	(1) 2	(1) 2	(1) 3	(1) 3
HP [5]	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5
GENERAL					
Minimum Starting/Operating Ambient °F[6]	30	30	30	30	30
with HGBP, °F[6]	40	40	40	40	40
Low Ambient Option, °F[7]	0	0	0	0	0
Extra Low Ambient Option, °F[8]	-20	-20	-20	-20	-20
Number of Circuits	1	1	1	1	1
Approx. Refrigerant Charge, lbs. R-22 (Plus Line Charge)	50	58	65	72	84
Shipping Weight, lbs. Alum. Fin/Cu. Fin	1453/1682	1584/1933	1661/2010	1832/2177	1887/2232
Operating Weight, lbs. Alum. Fin/Cu. Fin	1503/1732	1642/1991	1726/2075	1904/2249	1971/2316

NOTES:
(1) Based on GPM per Performance Data. 95°F Ambient, 44°F LWT. (10°F range)
(2) RCH1 - Standard optional remote cooler module for 44°F LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 42°F LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 40°F LWT.
(5) Units with Low Ambient Option use (1) 1 HP in lieu of (1) 1 1/2 HP fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 5 MPH wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) 1 HP variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 5 MPH wind for Split-System Chiller applications.

NR - Not Required
NPTE - National Pipe Thread External

PHYSICAL SPECIFICATIONS: ENGLISH I.P. UNITS

AUDR-B 030D, 035D, 040D, 045D, 050D

AUDR-B MODEL	030D	035D	040D	045D	050D
Nominal Tons(1)	30	35	40	45	50
Quantity of Compressors	(2) 4D20	(2) 4D22	(2) 4D25	(1) 4D25 (1) 6D30	(1) 4D30 (1) 6D30
STANDARD OPTIONAL REMOTE COOLER MODULE for 44°F LWT (RCH1)(2)	CHD008601A	CHD008601A	CHD010601A	CHD010601B	CHD011601B
Water Volume, Gallons	7.7	7.7	10.7	10.7	12.9
Minimum Flow Rate, GPM	56	56	62	78	86
Maximum Flow Rate, GPM	168	168	205	315	315
Water Conn. Size In/Out (Type)	4" NPTE	4" NPTE	4" NPTE	4" NPTE	4" NPTE
OPTIONAL REMOTE COOLER MODULE for 42°F LWT (RCH2)(3)	NR	CHD010601A	NR	NR	NR
Water Volume, Gallons	—	10.7	—	—	—
Minimum Flow Rate, GPM	—	62	—	—	—
Maximum Flow Rate, GPM	—	205	—	—	—
Water Conn. Size In/Out (Type)	—	4" NPTE	—	—	—
OPTIONAL REMOTE COOLER MODULE for 40°F LWT (RCH3)(4)	CHD010602A	CHD011601A	CHD011601A	CHD013601A	CHD013601A
Water Volume, Gallons	10.7	12.9	12.9	18.1	18.1
Minimum Flow Rate, GPM	47	69	69	80	80
Maximum Flow Rate, GPM	116	206	206	220	220
Water Conn. Size In/Out (Type)	4" NPTE	4" NPTE	4" NPTE	4" NPTE	4" NPTE
CONDENSER	L216	L216	L216	L216	L216
Fan Quantity - All 30" Diameter	4	4	4	4	4
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity (5)	(2) 4	(2) 4	(2) 4	(2) 4	(2) 4
HP(5)	1.0	1.0	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5
GENERAL					
Minimum Starting/Operating Ambient °F(6)	30	30	30	30	30
with HGBP, °F(6)	40	40	40	40	40
Low Ambient Option, °F(7)	0	0	0	0	0
Extra Low Ambient Option, °F(8)	-20	-20	-20	-20	-20
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, lbs. R-22 (Plus Line Charge)	72	84	96	108	120
Shipping Weight, lbs. Alum. Fin/Cu. Fin	3167/3619	3167/3619	3167/3619	3167/3625	3172/3707
Operating Weight, lbs. Alum. Fin/Cu. Fin	3239/3691	3251/3703	3263/3715	3275/3733	3292/3827

NOTES: (1) Based on GPM per Performance Data. 95°F Ambient, 44°F LWT. (10°F range) **NR - Not Required**

(2) RCH1 - Standard optional remote cooler module for 44°F LWT. **NPTE - National Pipe Thread External**

(3) RCH2 - Oversized optional remote cooler module required where indicated for 42°F LWT.

(4) RCH3 - Oversized optional remote cooler module required where indicated for 40°F LWT.

(5) Units with Low Ambient Option use (1) 1 HP in lieu of (1) 1 1/2 HP fan motor per circuit.

(6) Minimum Starting/Operation Ambient with a maximum of 5 MPH wind across coil & minimum load per Table 6.

(7) Low Ambient Option requires (2) 1 HP variable speed fan motor.

(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 5 MPH wind for Split-System Chiller applications.

PHYSICAL SPECIFICATIONS: ENGLISH I.P. UNITS

AUDR-B 052D, 055D, 062D, 070D, 075D

AUDR-B MODEL	052D	055D	062D	070D	075D
Nominal Tons(1)	52	55	62	70	75
Quantity of Compressors	(2) 6D30	(1) 6D35 (1) 6D30	(2) 6D35	(2) 6D40	(1) 6D40 (1) 8D50
STANDARD OPTIONAL REMOTE COOLER MODULE for 44°F LWT (RCH1)(2)	CHD011601B	CHD011601B	CHD012601B	CHD012601B	CHD013601B
Water Volume, Gallons	12.9	12.9	15.4	15.4	18.1
Minimum Flow Rate, GPM	86	86	94	94	101
Maximum Flow Rate, GPM	315	315	377	377	420
Water Conn Size In/Out (Type)	4" NPTE	4" NPTE	4" NPTE	4" NPTE	4" NPTE
OPTIONAL REMOTE COOLER MODULE for 42°F LWT (RCH2)(3)	NR	NR	NR	NR	NR
Water Volume, Gallons	—	—	—	—	—
Minimum Flow Rate, GPM	—	—	—	—	—
Maximum Flow Rate, GPM	—	—	—	—	—
Water Conn Size In/Out (Type)	—	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 40°F LWT (RCH3)(4)	CHD013601A	CHD013601A	EXD16092J11	EXD16092J11	EXD16092J11
Water Volume, Gallons	18.1	18.1	36.2	36.2	36.2
Minimum Flow Rate, GPM	80	80	116	116	116
Maximum Flow Rate, GPM	220	220	366	366	366
Water Conn Size In/Out (Type)	4" NPTE	4" NPTE	6" VIC	6" VIC	6" VIC
CONDENSER	L216	L312	L216	L216	L312
Fan Quantity - All 30" Diameter	4	4	6	6	6
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity(5)	(2) 4	(2) 4	(2) 4	(2) 4	(2) 6
HP(5)	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5
GENERAL					
Minimum Starting/Operating Ambient °F(6)	30	30	30	30	30
with HGBP, °F(6)	40	40	40	40	40
Low Ambient Option, °F(7)	0	0	0	0	0
Extra Low Ambient Option, °F(8)	-20	-20	-20	-20	-20
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, lbs. R-22 (Plus Line Charge)	125	132	149	168	180
Shipping Weight, lbs. Alum. Fin./Cu. Fin	3332/3784	3332/3784	4005/4682	4115/4792	4748/5782
Operating Weight, lbs. Alum. Fin/Cu. Fin	3457/3909	3464/3916	4154/4831	4283/4960	4928/5962

NOTES:
(1) Based on GPM per Performance Data. 95°F Ambient, 44°F LWT. (10°F range)
(2) RCH1 - Standard optional remote cooler module for 44°F LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 42°F LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 40°F LWT.
(5) Units with Low Ambient Option use (2) 1 HP, balance 1 1/2 HP fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 5 MPH wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) 1 HP variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 5 MPH wind for Split-System Chiller applications.

NR - Not Required
NPTE - National Pipe Thread External
VIC - Victaulic

AUDR-B 080D, 085D, 090D, 100D, 102D

AUDR-B MODEL	080D	085D	090D	100D	102D
Nominal Tons(1)	80	85	90	100	102
Quantity of Compressors	(2) 8D50	(2) 4D30 (2) 4D25	(2) 6D30 (2) 4D25	(2) 6D30 (2) 4D30	(4) 6D30
STANDARD OPTIONAL REMOTE COOLER MODULE for 44°F LWT (RCH1)(2)	CHD013601B	EXD12102J07	EXD12102J07	EXD12122J09	EXD12122J09
Water Volume, Gallons	18.1	26	26	31.1	31.1
Minimum Flow Rate, GPM	101	158	158	153	153
Maximum Flow Rate, GPM	420	444	444	442	442
Water Conn Size In/Out (Type)	4" NPTE	4" VIC	4" VIC	4" VIC	4" VIC
OPTIONAL REMOTE COOLER MODULE for 42°F LWT (RCH2)(3)	NR	NR	EXD12122J09	NR	NR
Water Volume, Gallons	—	—	31.1	—	—
Minimum Flow Rate, GPM	—	—	153	—	—
Maximum Flow Rate, GPM	—	—	442	—	—
Water Conn Size In/Out (Type)	—	—	4" VIC	—	—
OPTIONAL REMOTE COOLER MODULE for 40°F LWT (RCH3)(4)	EXD16092J11	EXD14122J11	EXD16122J11	EXD16122J11	EXD16122J11
Water Volume, Gallons	36.2	36.2	48.2	48.2	48.2
Minimum Flow Rate, GPM	116	140	159	159	159
Maximum Flow Rate, GPM	366	391	443	443	443
Water Conn Size In/Out (Type)	6" VIC	5" VIC	6" VIC	6" VIC	6" VIC
CONDENSER	L312	L216	L216	L216	L216
Fan Quantity - All 30" Diameter	6	8	8	8	8
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity(5)	(4) 6	(6) 8	(6) 8	(6) 8	(6) 8
HP(5)	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5
GENERAL					
Minimum Starting/Operating Ambient, °F(6)	30	30	30	30	30
with HGBP, °F(6)	40	40	40	40	40
Low Ambient Option, °F(7)	0	0	0	0	0
Extra Low Ambient Option, °F(8)	-20	-20	-20	-20	-20
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, lbs. R-22 (Plus Line Charge)	192	204	216	240	245
Shipping Weight, lbs. Alum. Fin/Cu. Fin	5001/6035	5977/6881	6131/7035	6142/7046	6357/7260
Operating Weight, lbs. Alum. Fin/Cu. Fin	5193/6227	6181/7085	6347/7251	6382/7286	6602/7505

NOTES:
(1) Based on GPM per Performance Data. 95°F Ambient, 44°F LWT. (10°F range)
(2) RCH1 - Standard optional remote cooler module for 44°F LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 42°F LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 40°F LWT.
(5) Units with Low Ambient Option use (1) 1 HP in lieu of (1) 1 1/2 HP fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 5 MPH wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) 1 HP variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 5 MPH wind for Split-System Chiller applications.

NR - Not Required
NPTE - National Pipe Thread External
VIC - Victaulic

PHYSICAL SPECIFICATIONS: ENGLISH I.P. UNITS

AUDR-B 112D, 120D, 130D, 140D, 155D

AUDR-B MODEL	112D	120D	130D	140D	155D
Nominal Tons[1]	112	120	130	140	155
Quantity of Compressors	(2) 6D35 (2) 6D30	(4) 6D35	(2) 6D40 (2) 6D35	(4) 6D40	(2) 6D40 (2) 8D50
STANDARD OPTIONAL REMOTE COOLER MODULE for 44°F LWT (RCH1)[2]	EXD12122J09	EXD14122J09	EXD14122J09	EXD14122J09	EXD16122J07
Water Volume, Gallons	31.1	36.2	36.2	36.2	48.2
Minimum Flow Rate, GPM	153	169	169	169	236
Maximum Flow Rate, GPM	442	484	484	484	697
Water Conn. Size In/Out (Type)	4" VIC	5" VIC	5" VIC	5" VIC	6" VIC
OPTIONAL REMOTE COOLER MODULE for 42°F LWT (RCH2)[3]	EXD14102J09	NR	NR	NR	NR
Water Volume, Gallons	30.3	—	—	—	—
Minimum Flow Rate, GPM	177	—	—	—	—
Maximum Flow Rate, GPM	440	—	—	—	—
Water Conn. Size In/Out (Type)	5" VIC	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 40°F LWT (RCH3)[4]	EXD18122J11	EXD18122J09	EXD18122J09	EXD18122J09	EXD20122J09
Water Volume, Gallons	61.6	61.6	61.6	61.6	73.8
Minimum Flow Rate, GPM	177	213	213	213	237
Maximum Flow Rate, GPM	604	740	740	740	800
Water Conn. Size In/Out (Type)	8" VIC	8" VIC	8" VIC	8" VIC	10" VIC
CONDENSER	L216	L216	L312	L216	L312
Fan Quantity - All 30" Diameter	10	10	10	12	12
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(8) 10	(8) 10	(8) 10	(10) 12	(10) 12
HP[5]	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5
GENERAL					
Minimum Starting/Operating Ambient, °F[6]	30	30	30	30	30
with HGBP, °F[6]	40	40	40	40	40
Low Ambient Option, °F[7]	0	0	0	0	0
Extra Low Ambient Option, °F[8]	-20	-20	-20	-20	-20
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, lbs. R-22 (Plus Line Charge)	269	288	312	336	372
Shipping Weight, lbs. Alum. Fin/Cu. Fin	6940/8069	6940/8069	7627/9349	7784/9138	9050/11118
Operating Weight, lbs. Alum Fin/Cu. Fin	7209/8338	7228/8357	7931/9661	8120/9474	9422/11490

NOTES:
(1) Based on GPM per Performance Data. 95°F Ambient, 44°F LWT. (10°F range)
(2) RCH1 - Standard optional remote cooler module for 44°F LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 42°F LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 40°F LWT.
(5) Units with Low Ambient Option use (1) 1 HP in lieu of (1) 1 1/2 HP fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 5 MPH wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) 1 HP variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 5 MPH wind for Split-System Chiller applications.

NR - Not Required
VIC - Victaulic

AUDR-B 170D, 180D, 185D, 190D, 200D

AUDR-B MODEL	170D	180D	185D	190D	200D
Nominal Tons(1)	170	180	185	190	200
Quantity of Compressors	(4) 8D50	(2) 8D50 (2) 8D60	(2) 8D50 (2) 8D60	(4) 8D60	(4) 8D60
STANDARD OPTIONAL REMOTE COOLER MODULE for 44°F LWT (RCH1)(2)	EXD18122J07	EXD18122J07	EXD20122J07	EXD18122J07	EXD20122J07
Water Volume, Gallons	61.6	61.6	73.8	61.6	73.8
Minimum Flow Rate, GPM	267	267	298	267	298
Maximum Flow Rate, GPM	1060	1060	816	1060	816
Water Conn. Size In/Out (Type)	8" VIC	8" VIC	10" VIC	8" VIC	10" VIC
OPTIONAL REMOTE COOLER MODULE for 42°F LWT (RCH2)(3)	NR	NR	NR	NR	NR
Water Volume, Gallons	—	—	—	—	—
Minimum Flow Rate, GPM	—	—	—	—	—
Maximum Flow Rate, GPM	—	—	—	—	—
Water Conn. Size In/Out (Type)	—	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 40°F LWT (RCH3)(4)	EXD20122J09	EXD20122J07	NR	EXD20122J07	NR
Water Volume, Gallons	73.8	73.8	—	73.8	—
Minimum Flow Rate, GPM	237	298	—	298	—
Maximum Flow Rate, GPM	800	816	—	816	—
Water Conn. Size In/Out (Type)	10" VIC	10" VIC	—	10" VIC	—
CONDENSER	L312	L312	L312	L312	L312
Fan Quantity - All 30" Diameter	12	14	14	14	14
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity(5)	(10) 12	(12) 14	(12) 14	(12) 14	(12) 14
HP(5)	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5	(1.0) 1.5
GENERAL					
Minimum Starting/Operating Ambient, °F(6)	30	30	30	30	30
with HGBP, °F(6)	40	40	40	40	40
Low Ambient Option, °F(7)	0	0	0	0	0
Extra Low Ambient Option, °F(8)	-20	-20	-20	-20	-20
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, lbs. R-22 (Plus Line Charge)	408	432	444	456	480
Shipping Weight, lbs. Alum. Fin/Cu. Fin	9556/11624	10320/12733	10320/12733	10320/12733	10320/12733
Operating Weight, lbs. Alum. Fin/Cu. Fin	9964/12032	10752/13165	10764/13177	10776/13189	10800/13213

NOTES: (1) Based on GPM per Performance Data. 95°F Ambient, 44°F LWT. (10°F range)

(2) RCH1 - Standard optional remote cooler module for 44°F LWT.

(3) RCH2 - Oversized optional remote cooler module required where indicated for 42°F LWT.

(4) RCH3 - Oversized optional remote cooler module required where indicated for 40°F LWT.

(5) Units with Low Ambient Option use (1) 1 HP in lieu of (1) 1 1/2 HP fan motor per circuit.

(6) Minimum Starting/Operation Ambient with a maximum of 5 MPH wind across coil & minimum load per Table 6.

(7) Low Ambient Option requires (1) 1 HP variable speed fan motor.

(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 5 MPH wind for Split-System Chiller applications.

NR - Not Required
Vic - Victaulic

PHYSICAL SPECIFICATIONS: METRIC S.I. UNITS

AUDR-B 021S, 024S, 027S, 030S, 035S

AUDR-B MODEL	021S	024S	027S	030S	035S
Nominal kWo[1]	74	84	95	105	123
Quantity of Compressors	(1) 4D25	(1) 4D30	(1) 6D30	(1) 6D35	(1) 6D40
STANDARD OPTIONAL REMOTE COOLER MODULE for 6.5°C LWT (RCH1)[2]	CHS07601A	CHS007601A	CHS007601A	CHS007601B	CHS008601A
Water Volume, Liters	21	21	21	21	26.6
Minimum Flow Rate, Liters/sec	2.34	2.34	2.34	3.16	3.54
Maximum Flow Rate, Liters/sec	6.39	6.39	6.39	10.38	10.63
Water Conn. Size In/Out (mm) (Type)	76.2 *NPTE	76.2 *NPTE	76.2 *NPTE	76.2 *NPTE	76.2 *NPTE
OPTIONAL REMOTE COOLER MODULE for 5.5°C LWT (RCH2)[3]	NR	NR	NR	NR	NR
Water Volume, Liters	—	—	—	—	—
Minimum Flow Rate, Liters/sec.	—	—	—	—	—
Maximum Flow Rate, Liters/sec.	—	—	—	—	—
Water Conn. Size In/Out (mm) (Type)	—	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 4.5°C LWT (RCH3)[4]	NR	NR	CHS008602A	CHS010601A	CHS010601A
Water Volume, Liters	—	—	26.6	35.7	35.7
Minimum Flow Rate, Liters/sec.	—	—	2.66	3.92	3.92
Maximum Flow Rate, Liters/sec.	—	—	7.21	12.97	12.97
Water Conn. Size In/Out (mm) (Type)	—	—	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE
CONDENSER	L216	L312	L312	L216	L312
Fan Quantity - All 760 mm Diameter	2	2	2	3	3
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(1) 2	(1) 2	(1) 2	(1) 3	(1) 3
kW[5]	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15
GENERAL					
Minimum Starting/Operating Ambient °C[6]	-1.1	-1.1	-1.1	-1.1	-1.1
with HGBP °C[6]	4.4	4.4	4.4	4.4	4.4
Low Ambient Option °C[7]	-18	-18	-18	-18	-18
Extra Low Ambient Option °C[8]	-29	-29	-29	-29	-29
Number of Circuits	1	1	1	1	1
Approx. Refrigerant Charge, kgs R-22 (Plus Line Charge)	22	27	30	33	38
Shipping Weight, kgs Alum. Fin/Cu. Fin	660/764	719/878	754/912	832/988	857/1013
Operating Weight, kgs Alum. Fin/Cu. Fin	682/786	746/905	784/942	865/1021	895/1051

NOTES:
(1) Based on Liters/sec. per Performance Data. 35°C Ambient, 6.7°C LWT.
(2) RCH1 - Standard optional remote cooler module for 6.5°C LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 5.5°C LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 4.5°C LWT.
(5) Units with Low Ambient Option use (1) .76 kW in lieu of (1) 1.5 kW fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 8 km/hr wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) .76 kW variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 8 KPH wind for Split-System Chiller applications.

NR - Not Required
***NPTE - National Pipe Thread External**

PHYSICAL SPECIFICATIONS: METRIC S.I. UNITS

AUDR-B 030D, 035D, 040D, 045D, 050D

AUDR-B MODEL	030D	035D	040D	045D	050D
Nominal kWo[1]	105	123	141	158	176
Quantity of Compressors	(2) 4D20	(2) 4D22	(2) 4D25	(1) 4D25 (1) 6D30	(1) 4D30 (1) 6D30
STANDARD OPTIONAL REMOTE COOLER MODULE for 6.5°C LWT (RCH1)[2]	CHD008601A	CHD008601A	CHD010601A	CHD010601B	CHD011601B
Water Volume, Liters	29.2	29.2	40.5	40.5	49
Minimum Flow Rate, Liters/sec	3.54	3.54	3.92	4.93	5.44
Maximum Flow Rate, Liters/sec	10.63	10.63	12.97	19.23	19.23
Water Conn. Size In/Out (mm) (Type)	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE
OPTIONAL REMOTE COOLER MODULE for 5.5°C LWT (RCH2)[3]	NR	CHD010601A	NR	NR	NR
Water Volume, Liters	—	40.5	—	—	—
Minimum Flow Rate, Liters/sec.	—	3.92	—	—	—
Maximum Flow Rate, Liters/sec.	—	12.97	—	—	—
Water Conn. Size In/Out (mm) (Type)	—	101.6 *NPTE	—	—	—
OPTIONAL REMOTE COOLER MODULE for 4.5°C LWT (RCH3)[4]	CHD010602A	CHD011601A	CHD011601A	CHD013601A	CHD013601A
Water Volume, Liters	40.5	49	49	68.5	68.5
Minimum Flow Rate, Liters/sec.	2.97	4.36	4.36	5.06	5.06
Maximum Flow Rate, Liters/sec.	7.34	13.03	13.03	13.91	13.91
Water Conn. Size In/Out (mm) (Type)	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE
CONDENSER	L216	L216	L216	L216	L216
Fan Quantity - All 760 mm Diameter	4	4	4	4	4
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(2) 4	(2) 4	(2) 4	(2) 4	(2) 4
KW[5]	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15
GENERAL					
Minimum Starting/Operating Ambient °C[6]	-1.1	-1.1	-1.1	-1.1	-1.1
with HGBP °C[6]	4.4	4.4	4.4	4.4	4.4
Low Ambient Option °C[7]	-18	-18	-18	-18	-18
Extra Low Ambient Option °C[8]	-29	-29	-29	-29	-29
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, kgs R-22 (Plus Line Charge)	33	38	44	49	55
Shipping Weight, kgs Alum. Fin/Cu. Fin	1437/1643	1437/1643	1437/1643	1441/1646	1478/1683
Operating Weight, kgs Alum. Fin/Cu. Fin	1470/1676	1475/1681	1481/1687	1490/1695	1533/1738

NOTES:
(1) Based on Liters/sec. per Performance Data. 35°C Ambient, 6.7°C LWT.
(2) RCH1 - Standard optional remote cooler module for 6.5°C LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 5.5°C LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 4.5°C LWT.
(5) Units with Low Ambient Option use (1) .76 kW in lieu of (1) 1.5 kW fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 8 km/hr wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) .76 kW variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 8 KPH wind for Split-System Chiller applications.

NR - Not Required
***NPTE - National Pipe Thread External**

PHYSICAL SPECIFICATIONS: METRIC S.I. UNITS

AUDR-B 052D, 055D, 062D, 070D, 075D

AUDR-B MODEL	052D	055D	062D	070D	075D
Nominal kWo[1]	183	193	218	246	264
Quantity of Compressors	(2) 6D30	(1) 6D35 (1) 6D30	(2) 6D35	(2) 6D40	(1) 6D40 (10 8D50
STANDARD OPTIONAL REMOTE COOLER MODULE for 6.5°C LWT (RCH1)[2]	CHD011601B	CHD011601B	CHD012601B	CHD012601B	CHD013601B
Water Volume, Liters	49	49	58.3	58.3	68.5
Minimum Flow Rate, Liters/Sec	5.44	5.44	5.95	5.95	6.39
Maximum Flow Rate, Liters/Sec	19.23	19.23	23.22	23.22	25.75
Water Conn. Size In/Out (mm) (Type)	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE	101.6 *NPTE
OPTIONAL REMOTE COOLER MODULE for 5.5°C LWT (RCH2)[3]	NR	NR	NR	NR	NR
Water Volume, Liters	—	—	—	—	—
Minimum Flow Rate, Liters/sec.	—	—	—	—	—
Maximum Flow Rate, Liters/sec.	—	—	—	—	—
Water Conn. Size In/Out (mm) (Type)	—	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 4.5°C LWT (RCH3)[4]	CHD013601A	CHD013601A	EXD16092J11	EXD16092J11	EXD16092J11
Water Volume, Liters	68.5	68.5	137	137	137
Minimum Flow Rate, Liters/sec.	5.06	5.06	7.34	7.34	7.34
Maximum Flow Rate, Liters/sec.	13.92	13.92	23.16	23.16	23.16
Water Conn. Size In/Out (mm) (Type)	101.6 *NPTE	101.6 *NPTE	152.4 VIC	152.4 VIC	152.4 VIC
CONDENSER	L216	L312	L216	L216	L312
Fan Quantity - All 760 mm Diameter	4	4	6	6	6
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(2) 4	(2) 4	(2) 6	(2) 6	(2) 6
KW[5]	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15
GENERAL					
Minimum Starting/Operating Ambient °C[6]	-1.1	-1.1	-1.1	-1.1	-1.1
with HGBP °C[6]	4.4	4.4	4.4	4.4	4.4
Low Ambient Option °C[7]	-18	-18	-18	-18	-18
Extra Low Ambient Option °C[8]	-29	-29	-29	-29	-29
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, kgs R-22 (Plus Line Charge)	57	60	68	76	82
Shipping Weight, kgs Alum. Fin/Cu. Fin	1513/1718	1513/1718	1819/2126	1867/2174	2156/2624
Operating Weight, kgs Alum. Fin/Cu. Fin	1570/1775	1573/1778	1887/2194	1943/2250	2238/2706

NOTES:
(1) Based on Liters/sec. per Performance Data. 35°C Ambient, 6.7°C LWT.
(2) RCH1 - Standard optional remote cooler module for 6.5°C LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 5.5°C LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 4.5°C LWT.
(5) Units with Low Ambient Option use (1) .76 kW in lieu of (1) 1.5 kW fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 8 km/hr wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) .76 kW variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 8 KPH wind for Split-System Chiller applications.

NR - Not Required
***NPTE - National Pipe Thread External**
VIC - Victaulic

PHYSICAL SPECIFICATIONS: METRIC S.I. UNITS

AUDR-B 080D, 085D, 090D, 100D, 102D

AUDR-B MODEL	080D	085D	090D	100D	102D
Nominal kWo[1]	281	299	316	352	359
Quantity of Compressors	(2) 8D50	(2) 4D30 (2) 4D25	(2) 6D30 (2) 4D25	(2) 6D30 (2) 4D30	(4) 6D30
STANDARD OPTIONAL REMOTE COOLER MODULE for 6.5°C LWT (RCH1)[2]	CHD013601B	EXD12102J07	EXD12102J07	EXD12122J09	EXD12122J09
Water Volume, Liters	68.5	98.2	98.2	117.5	117.5
Minimum Flow Rate, Liters/Sec	6.39	10.0	10.0	9.68	9.68
Maximum Flow Rate, Liters/Sec	25.75	28.1	28.1	27.96	27.96
Water Conn. Size In/Out (mm) (Type)	101.6 *NPTE	101.6 VIC	101.6 VIC	101.6 VIC	101.6 VIC
OPTIONAL REMOTE COOLER MODULE for 5.5°C LWT (RCH2)[3]	NR	NR	EXD12122J09	NR	NR
Water Volume, Liters	—	—	117.5	—	—
Minimum Flow Rate, Liters/sec.	—	—	9.68	—	—
Maximum Flow Rate, Liters/sec.	—	—	27.96	—	—
Water Conn. Size In/Out (mm) (Type)	—	—	101.6 VIC	—	—
OPTIONAL REMOTE COOLER MODULE for 4.5°C LWT (RCH3)[4]	EXD16092J11	EXD14122J11	EXD16122J11	EXD16122J11	EXD16122J11
Water Volume, Liters	137	137	182.3	182.3	182.3
Minimum Flow Rate, Liters/sec.	7.34	8.86	10.06	10.06	10.06
Maximum Flow Rate, Liters/sec.	23.16	24.74	28.03	28.03	28.03
Water Conn. Size In/Out (mm) (Type)	152.4 VIC	152.4 VIC	152.4 VIC	152.4 VIC	152.4 VIC
CONDENSER	L312	L216	L216	L216	L216
Fan Quantity - All 760 mm Diameter	6	8	8	8	8
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(2) 6	(2) 8	(2) 8	(2) 8	(2) 8
KW[5]	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15
GENERAL					
Minimum Starting/Operating Ambient °C[6]	-1.1	-1.1	-1.1	-1.1	-1.1
with HGBP °C[6]	4.4	4.4	4.4	4.4	4.4
Low Ambient Option °C[7]	-18	-18	-18	-18	-18
Extra Low Ambient Option °C[8]	-29	-29	-29	-29	-29
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, kgs R-22 (Plus Line Charge)	87	93	98	109	112
Shipping Weight, kgs Alum. Fin/Cu. Fin	2272/2740	2740/3151	2811/3221	2816/3226	2885/3296
Operating Weight, kgs Alum. Fin/Cu. Fin	2359/2827	2833/3244	2909/3319	2925/3335	2997/3408

NOTES:
(1) Based on Liters/sec. per Performance Data. 35°C Ambient, 6.7°C LWT.
(2) RCH1 - Standard optional remote cooler module for 6.5°C LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 5.5°C LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 4.5°C LWT.
(5) Units with Low Ambient Option use (1) .76 kW in lieu of (1) 1.5 kW fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 8 km/hr wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) .76 kW variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 8 KPH wind for Split-System Chiller applications.

NR - Not Required
***NPTE - National Pipe Thread External**
VIC - Victaulic

PHYSICAL SPECIFICATIONS: METRIC S.I. UNITS

AUDR-B 112D, 120D, 130D, 140D, 155D

AUDR-B MODEL	112D	120D	130D	140D	155D
Nominal kWo[1]	394	422	457	492	545
Quantity of Compressors	(2) 6D35 (2) 6D30	(4) 6D35	(2) 6D40 (2) 6D35	(4) 6D40	(2) 6D40 (2) 6D50
STANDARD OPTIONAL REMOTE COOLER MODULE for 6.5°C LWT (RCH1)[2]	EXD12122J09	EXD14122J09	EXD14122J09	EXD14122J09	EXD16122J07
Water Volume, Liters	117.5	137	137	137	182.3
Minimum Flow Rate, Liters/Sec	9.68	10.69	10.69	10.69	14.93
Maximum Flow Rate, Liters/Sec	27.96	30.62	30.62	30.62	44.10
Water Conn. Size In/Out (mm) (Type)	101.6 VIC	127 VIC	127 VIC	127 VIC	152.4 VIC
OPTIONAL REMOTE COOLER MODULE for 5.5°C LWT (RCH2)[3]	EXD14102J09	NR	NR	NR	NR
Water Volume, Liters	114.7	—	—	—	—
Minimum Flow Rate, Liters/sec.	8.86	—	—	—	—
Maximum Flow Rate, Liters/sec.	27.84	—	—	—	—
Water Conn. Size In/Out (mm) (Type)	127 VIC	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 4.5°C LWT (RCH3)[4]	EXD18122J11	EXD18122J09	EXD18122J09	EXD18122J09	EXD20122J09
Water Volume, Liters	233.3	233.3	233.3	233.3	269.5
Minimum Flow Rate, Liters/sec.	11.20	13.48	13.48	13.48	15.00
Maximum Flow Rate, Liters/sec.	38.22	46.82	46.82	46.82	50.62
Water Conn. Size In/Out (mm) (Type)	203.2 VIC	203.2 VIC	203.2 VIC	203.2 VIC	254 VIC
CONDENSER	L216	L216	L312	L216	L312
Fan Quantity - All 760 mm Diameter	10	10	10	12	12
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(2) 6	(2) 10	(2) 10	(2) 10	(2) 10
KW[5]	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15
GENERAL					
Minimum Starting/Operating Ambient °C[6]	-1.1	-1.1	-1.1	-1.1	-1.1
with HGBP °C[6]	4.4	4.4	4.4	4.4	4.4
Low Ambient Option °C[7]	-18	-18	-18	-18	-18
Extra Low Ambient Option °C[8]	-29	-29	-29	-29	-29
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, kgs R-22 (Plus Line Charge)	122	131	142	153	169
Shipping Weight, kgs Alum. Fin/Cu. Fin	3151/3662	3151/3662	3462/4246	3533/4347	4108/5048
Operating Weight, kgs Alum. Fin/Cu. Fin	3213/3784	3282/3793	3604/4388	3686/4500	4277/5217

NOTES:
(1) Based on Liters/sec. per Performance Data. 35°C Ambient, 6.7°C LWT.
(2) RCH1 - Standard optional remote cooler module for 6.5°C LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 5.5°C LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 4.5°C LWT.
(5) Units with Low Ambient Option use (1) .76 kW in lieu of (1) 1.5 kW fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 8 km/hr wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) .76 kW variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 8 KPH wind for Split-System Chiller applications.

NR - Not Required
VIC - Victaulic

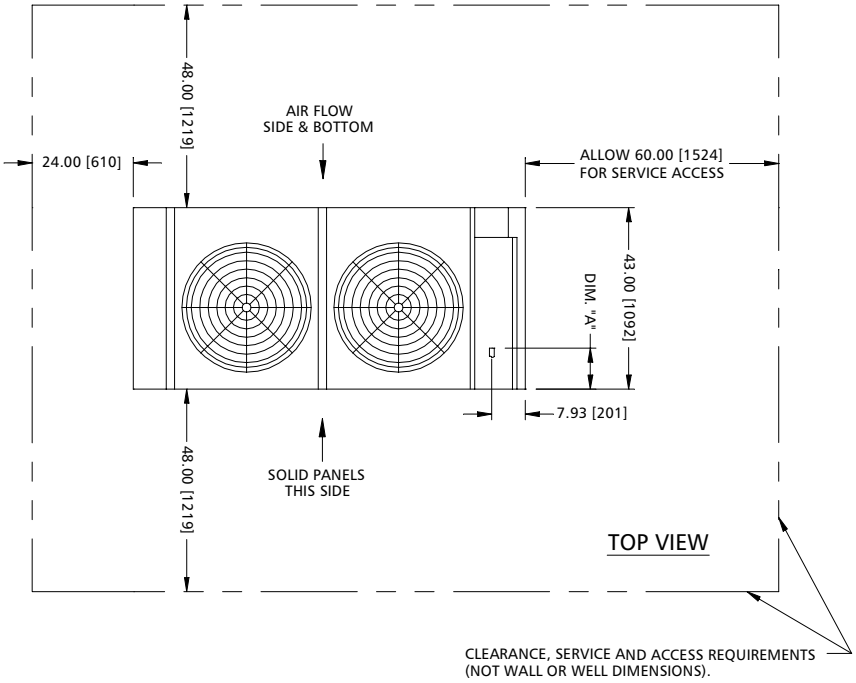
AUDR-B 170D, 180D, 185D, 190D, 200D

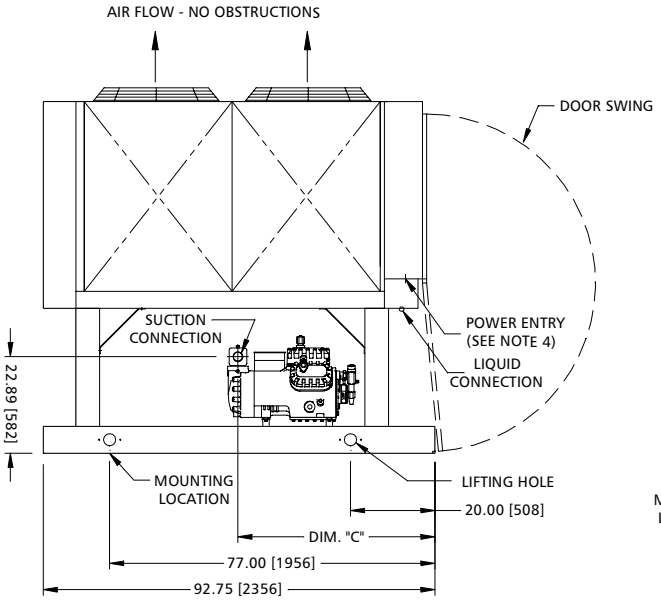
AUDR-B MODEL	170D	180D	185D	190D	200D
Nominal kWo[1]	598	633	650	668	703
Quantity of Compressors	(4) 8D50	(2) 8D50 (2) 8D60	(2) 8D50 (2) 8D60	(4) 8D60	(4) 8D60
STANDARD OPTIONAL REMOTE COOLER MODULE for 6.5°C LWT (RCH1)[2]	EXD18122J07	EXD18122J07	EXD20122J07	EXD18122J07	EXD20122J07
Water Volume, Liters	233.3	233.3	279.5	233.3	279.5
Minimum Flow Rate, Liters/Sec	16.89	16.89	18.85	16.89	18.85
Maximum Flow Rate, Liters/Sec	67.07	67.07	51.63	67.07	51.63
Water Conn. Size In/Out (mm) (Type)	203.2 VIC	203.2 VIC	254 VIC	203.2 VIC	254 VIC
OPTIONAL REMOTE COOLER MODULE for 5.5°C LWT (RCH2)[3]	NR	NR	NR	NR	NR
Water Volume, Liters	—	—	—	—	—
Minimum Flow Rate, Liters/sec.	—	—	—	—	—
Maximum Flow Rate, Liters/sec.	—	—	—	—	—
Water Conn. Size In/Out (mm) (Type)	—	—	—	—	—
OPTIONAL REMOTE COOLER MODULE for 4.5°C LWT (RCH3)[4]	EXD20122J09	EXD20122J07	NR	EXD20122J07	NR
Water Volume, Liters	279.5	279.5	—	279.5	—
Minimum Flow Rate, Liters/sec.	14.10	18.85	—	18.85	—
Maximum Flow Rate, Liters/sec.	50.62	51.63	—	51.63	—
Water Conn. Size In/Out (mm) (Type)	254 VIC	254 VIC	—	254 VIC	—
CONDENSER	L312	L312	L312	L312	L312
Fan Quantity - All 760 mm Diameter	12	14	14	14	14
Nominal RPM	1140	1140	1140	1140	1140
Motor Quantity[5]	(2) 12	(2) 14	(2) 14	(2) 14	(2) 14
KW[5]	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15	(.76) 1.15
GENERAL					
Minimum Starting/Operating Ambient °C[6]	-1.1	-1.1	-1.1	-1.1	-1.1
with HGBP °C[6]	4.4	4.4	4.4	4.4	4.4
Low Ambient Option °C[7]	-18	-18	-18	-18	-18
Extra Low Ambient Option °C[8]	-29	-29	-29	-29	-29
Number of Circuits	2	2	2	2	2
Approx. Refrigerant Charge, kgs R-22 (Plus Line Charge)	185	196	202	207	218
Shipping Weight, kgs Alum. Fin/Cu. Fin	4339/5277	4686/5780	4686/5780	4686/5780	4686/5780
Operating Weight, kgs Alum. Fin/Cu. Fin	4524/5462	4882/5976	4808/5982	4893/5987	4904/5998

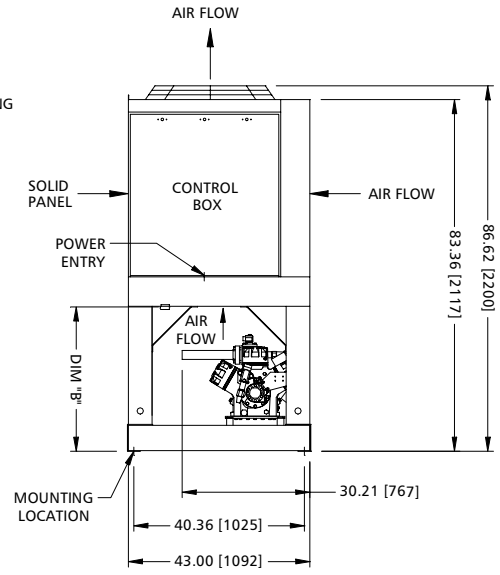
NR - Not Required
VIC - Victaulic

NOTES:
(1) Based on Liters/sec. per Performance Data. 35°C Ambient, 6.7°C LWT.
(2) RCH1 - Standard optional remote cooler module for 6.5°C LWT.
(3) RCH2 - Oversized optional remote cooler module required where indicated for 5.5°C LWT.
(4) RCH3 - Oversized optional remote cooler module required where indicated for 4.5°C LWT.
(5) Units with Low Ambient Option use (1) .76 kW in lieu of (1) 1.5 kW fan motor per circuit.
(6) Minimum Starting/Operation Ambient with a maximum of 8 km/hr wind across coil & minimum load per Table 6.
(7) Low Ambient Option requires (1) .76 kW variable speed fan motor.
(8) Extra Low Ambient Option includes LAC and requires electronic expansion valve(s) for DX Air Handler operation, and requires the use of 50% glycol and roughly 50% load to ensure extra low ambient starting, with a maximum of 8 KPH wind for Split-System Chiller applications.

DIMENSIONAL DATA: AUDR-B 021S TO 027S



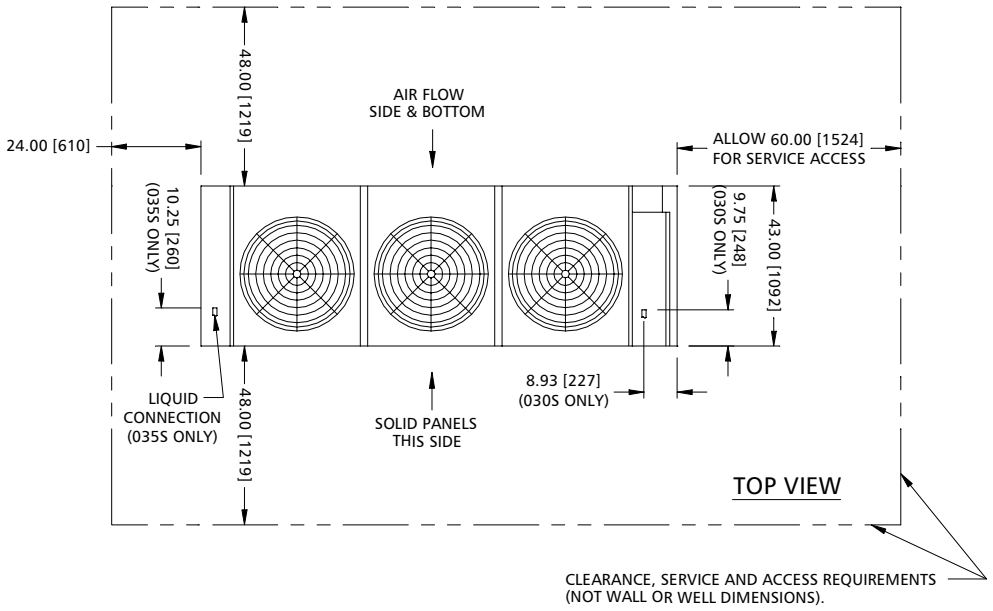


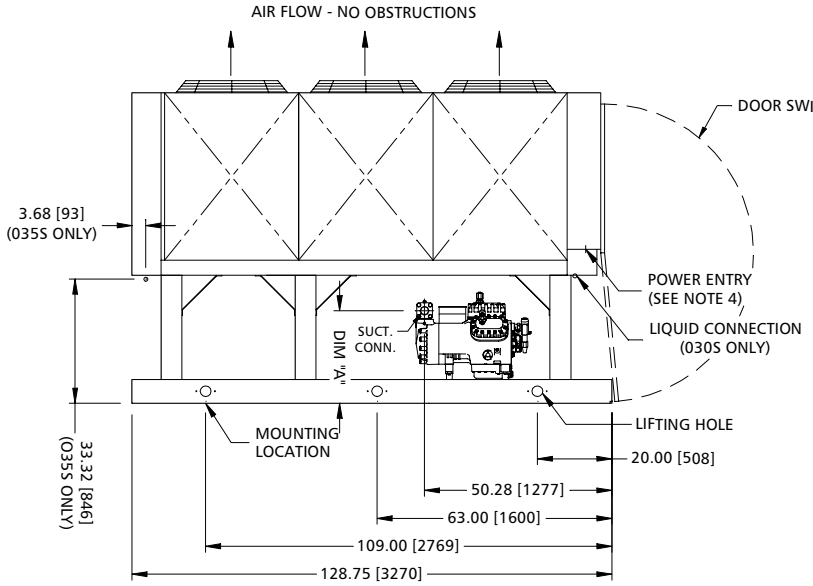


NOTES:

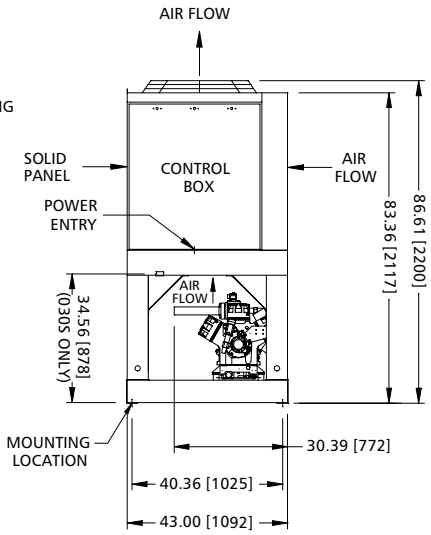
1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.
3 - USE MINIMUM 36 [914] FLEXIBLE CONDUIT TO CONTROL BOX TO ISOLATE UNIT.
4 - REFRIGERANT PIPING TO BE SUPPORTED TO ELIMINATE LOAD ON UNIT PIPING AND COIL.
5 - ALL DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

DIMENSIONAL DATA: AUDR-B 030S TO 035S





LEFT SIDE VIEW

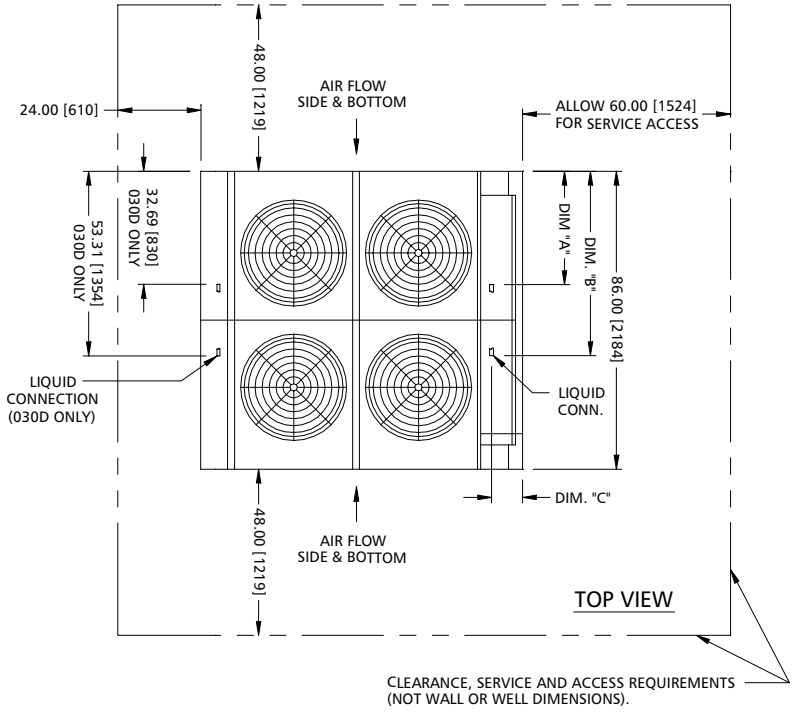


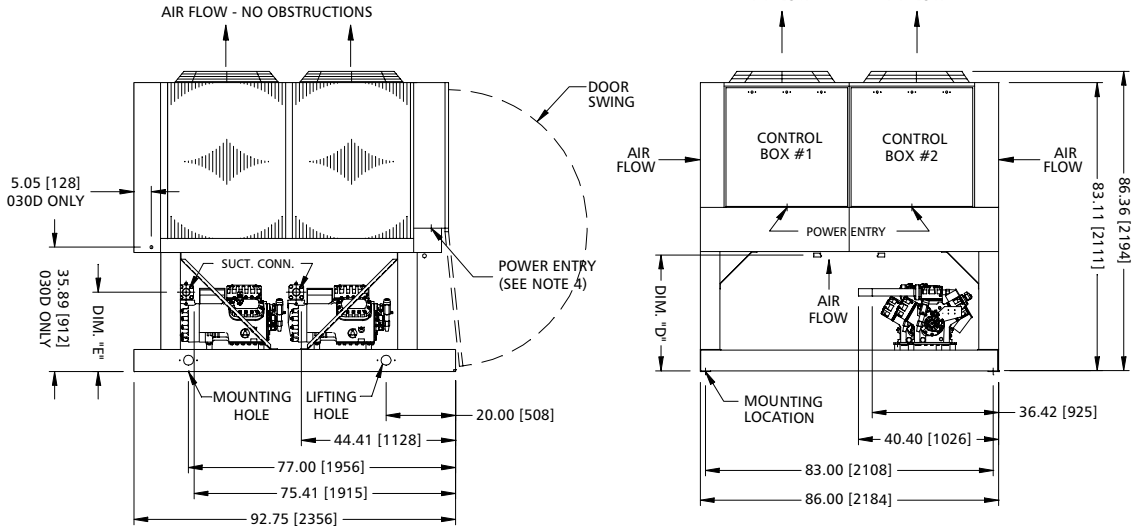
CONTROL BOX END

NOTES:

1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.

DIMENSIONAL DATA: AUDR-B 030D TO 055D

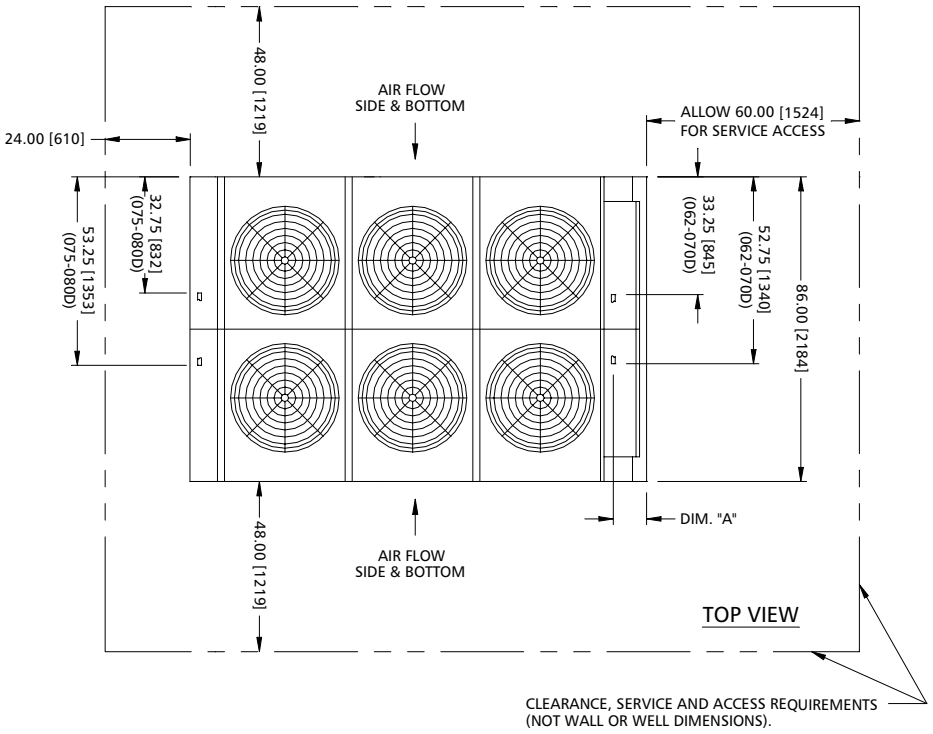


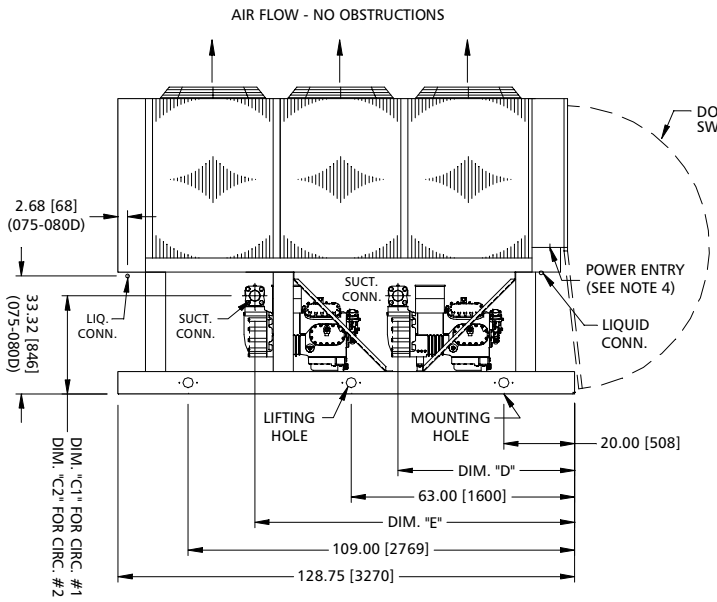


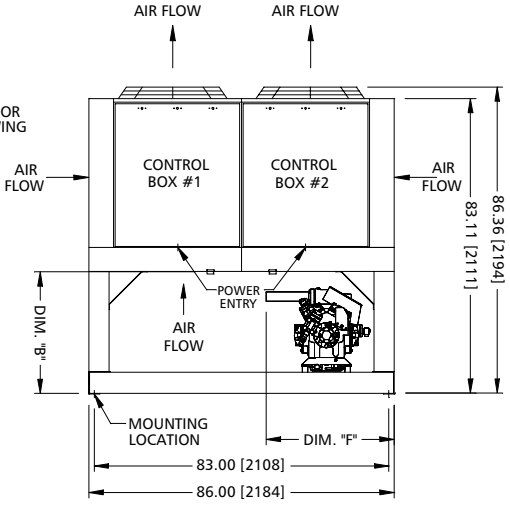
NOTES:

1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.
3 - USE MINIMUM 36 [914] FLEXIBLE CONDUIT TO CONTROL BOX TO ISOLATE UNIT.
4 - REFRIGERANT PIPING TO BE SUPPORTED TO ELIMINATE LOAD ON UNIT PIPING AND COIL.
5 - ALL DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
6 - REFERENCE DIMENSIONAL DRAWING 021971A0.

DIMENSIONAL DATA: AUDR-B 062D TO 080D

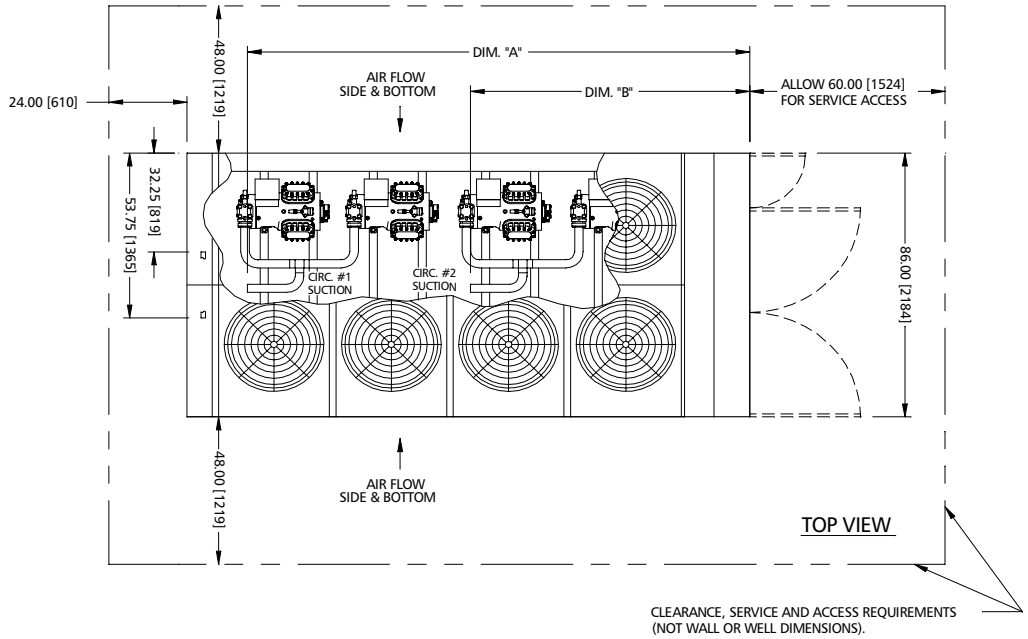


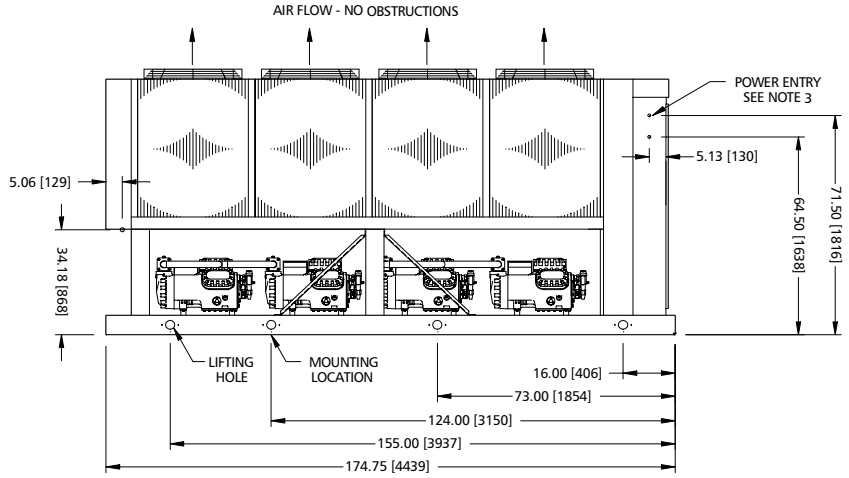




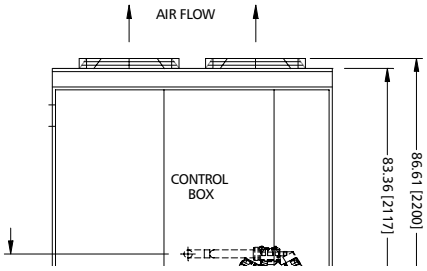
MODEL AUDRB	SUB-COOLER OUT		COMPRESSOR SUCTION VALVE				
	DIM. "A"	DIM. "B"	DIM. "C1"	DIM. "C2"	DIM. "D"	DIM. "E"	DIM. "F"
062D	8.93 [227]	34.25 [870]	22.89 [581]	22.89 [581]	50.28 [1277]	90.65 [2303]	24.30 [617]
070D	9.42 [239]	34.28 [871]	24.83 [631]	24.83 [631]	50.28 [1277]	90.65 [2303]	24.30 [617]

DIMENSIONAL DATA: AUDR-B 085D TO 102D





LEFT SIDE VIEW

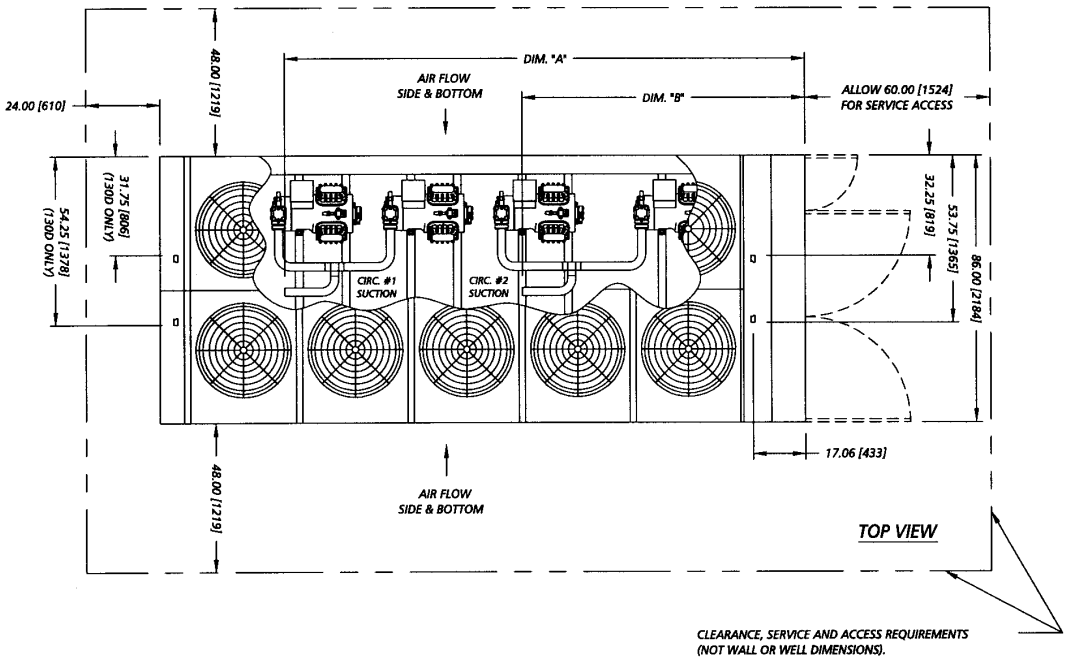


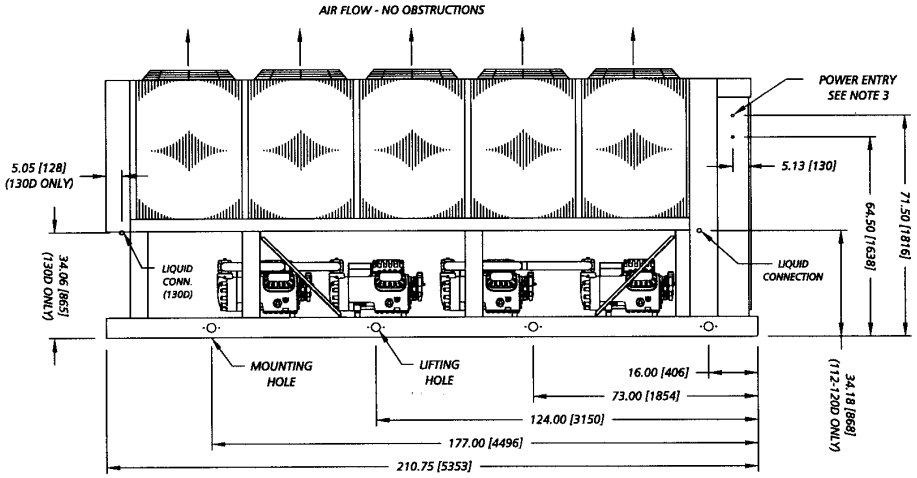
NOTES:

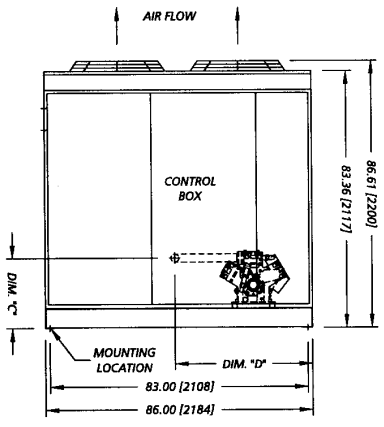
1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.
3 - USE MINIMUM 36 [914] FLEXIBLE CONDUIT TO CONTROL BOX TO ISOLATE UNIT.
4 - REFRIGERANT PIPING TO BE SUPPORTED TO MINIMIZE LOAD ON UNIT PIPING AND COIL.
5 - ALL DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
6 - REFERENCE DIMENSIONAL DRAWING 021973A0.

MODEL AUDRB	COMPRESSOR SUCTION VALVE			
	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"
085D	155.04 [3938]	86.53 [2198]	22.94 [583]	44.30 [1125]

DIMENSIONAL DATA: AUDR-B 112D TO 130D







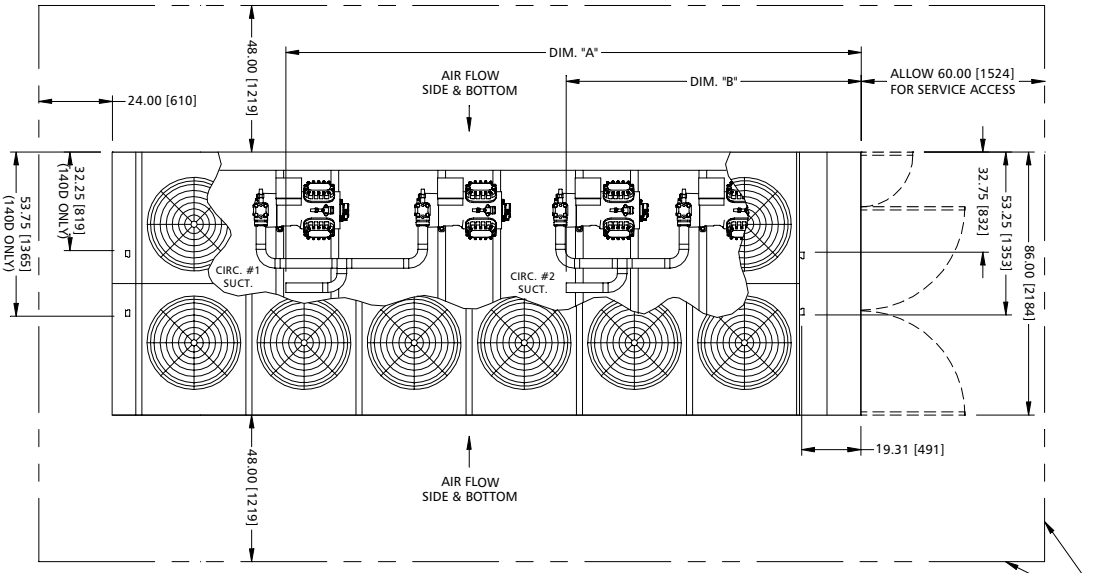
NOTES:

1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.
3 - USE MINIMUM 36 [914] FLEXIBLE CONDUIT TO CONTROL BOX TO ISOLATE UNIT.
4 - REFRIGERANT PIPING TO BE SUPPORTED TO ELIMINATE LOAD ON UNIT PIPING AND COIL.
5 - ALL DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
6 - REFERENCE DIMENSIONAL DRAWING 021974A0.

MODEL AUDRB	COMPRESSOR SUCTION VALVE			
	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"
112D	170.28 [4325]	93.53 [2376]	22.70 [577]	44.30 [1125]
120D	170.65 [4335]	93.90 [2385]	22.70 [577]	44.30 [1125]
130D	170.65 [4335]	93.90 [2385]	23.69 [602]	44.30 [1125]

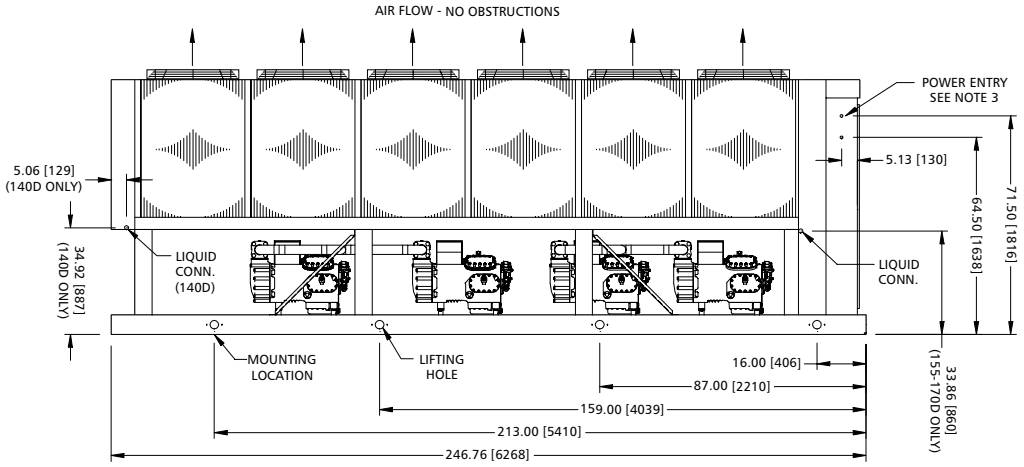
MODEL AUDRB	LIQUID CONNECTION	SUCTION CONNECTION
112D	1.375 [35] ODS	2.625 [67] ODS
120D	1.375 [35] ODS	2.625 [67] ODS
130D	1.375 [35] ODS	2.625 [67] ODS

DIMENSIONAL DATA: AUDR-B 140D TO 170D

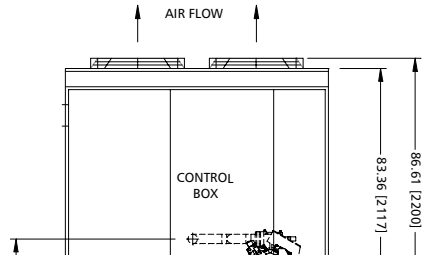


TOP VIEW

CLEARANCE, SERVICE AND ACCESS REQUIREMENTS
(NOT WALL OR WELL DIMENSIONS).



LEFT SIDE VIEW

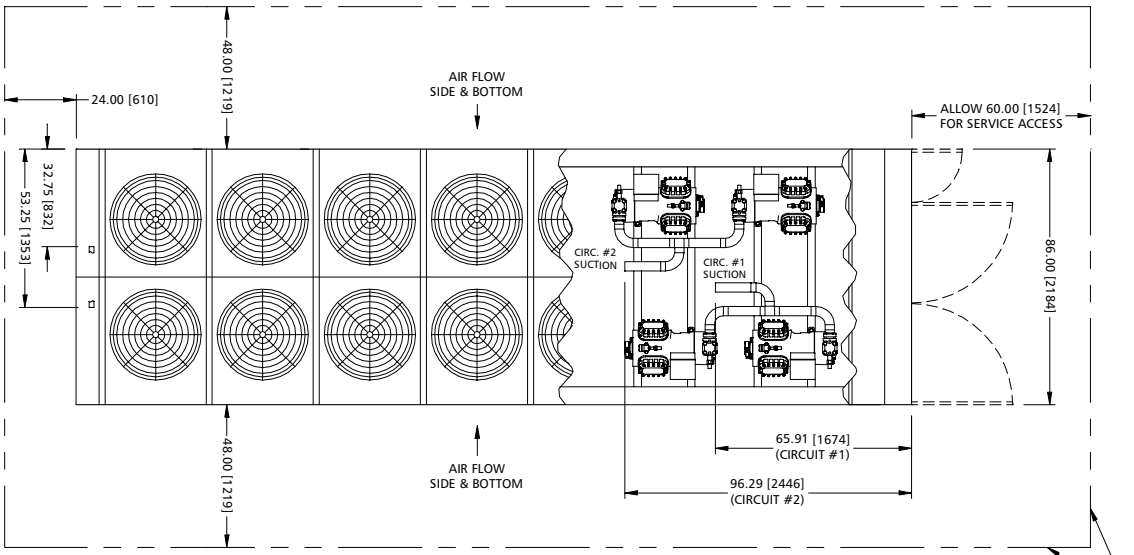


NOTES:

1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.
3 - USE MINIMUM 36 [914] FLEXIBLE CONDUIT TO CONTROL BOX TO ISOLATE UNIT.
4 - REFRIGERANT PIPING TO BE SUPPORTED TO ELIMINATE LOAD ON UNIT PIPING AND COIL.
5 - ALL DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
6 - REFERENCE DIMENSIONAL DRAWING 021975A0.

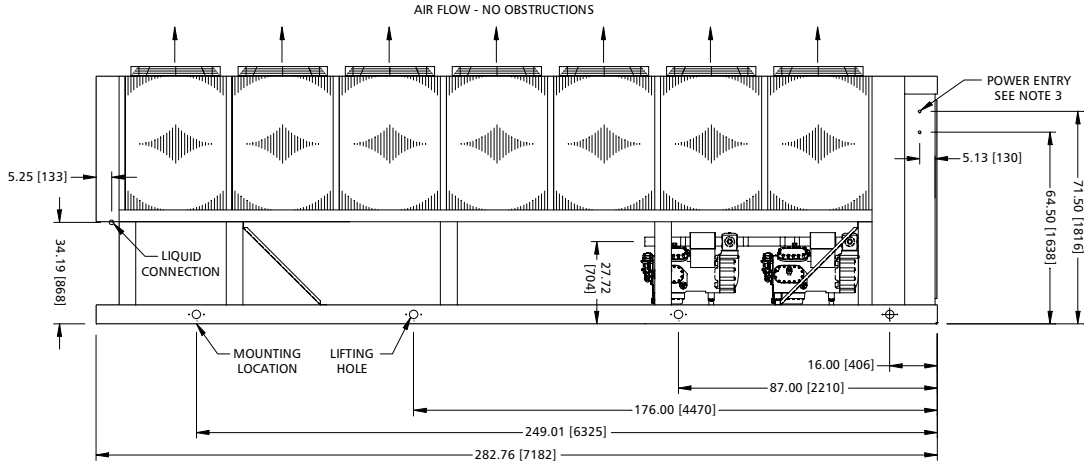
MODEL	COMPRESSOR SUCTION VALVE			
AUDRB	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"
140D	184.77 [4693]	94.58 [2402]	24.68 [627]	44.36 [1127]

DIMENSIONAL DATA: AUDR-B 180D TO 200D

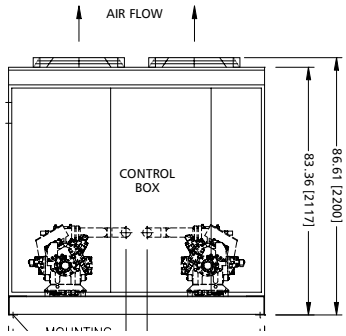


TOP VIEW

CLEARANCE, SERVICE AND ACCESS REQUIREMENTS
(NOT WALL OR WELL DIMENSIONS).



LEFT SIDE VIEW



NOTES:

1 - ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2 - ALLOW 60 [1524] CLEARANCE AT CONTROL PANEL END OF UNIT FOR SERVICE.
3 - USE MINIMUM 36 [914] FLEXIBLE CONDUIT TO CONTROL BOX TO ISOLATE UNIT.
4 - REFRIGERANT PIPING TO BE SUPPORTED TO MINIMIZE LOAD ON UNIT PIPING AND COILS.
5 - ALL DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
6 - REFERENCE DIMENSIONAL DRAWING 021976A0.

MODEL AUDRB	LIQUID CONNECTION	SUCTION CONNECTION

ELECTRICAL DATA: (60Hz/3PH)

AUDR-B Model		Nom. Volts	Unit Circ. #1 RLA	Unit Circ. #1 MCA	Unit Circ. #1 MFS/ HACR	Unit Circ. #2 RLA	Unit Circ. #2 MCA	Unit Circ. #2 MFS/ HACR	Each Compressor Qty / Circuit	Each Compressor RLA	Each Compressor LRA-XL	Each Compressor LRA-PW	Condenser Fan Motors Qty	Condenser Fan Motors HP	Condenser Fan Motors Total kW	Condenser Fan Motors FLA Each
021S	AK	200	86	104	175	—	—	—	1	73.7	428	250	2*	1.5	2.9	5.9
	AN	230	86	104	175	—	—	—		73.7	428	250				5.9
	AR	460	43	53	80	—	—	—		36.9	214	132				3.0
	AS	575	35	43	70	—	—	—		30.8	172	N/A				2.1
024S	AK	200	97	118	200	—	—	—	1	84.4	470	292	2*	1.5	2.9	5.9
	AN	230	97	118	200	—	—	—		84.4	470	292				5.9
	AR	460	49	59	100	—	—	—		42.2	235	141				3.0
	AS	575	40	49	80	—	—	—		35.3	200	N/A				2.1
027S	AK	200	106	130	200	—	—	—	1	94.2	565	340	2*	1.5	2.9	5.9
	AN	230	106	130	200	—	—	—		94.2	565	340				5.9
	AR	460	54	65	110	—	—	—		47.1	283	156				3.0
	AS	575	41	50	80	—	—	—		35.9	230	N/A				2.1
030S	AK	200	139	170	250	—	—	—	1	121.2	650	400	3*	1.5	4.35	5.9
	AN	230	130	158	250	—	—	—		112.2	594	340				5.9
	AR	460	69	83	125	—	—	—		59.2	297	195				3.0
	AS	575	48	58	90	—	—	—		41.3	245	N/A				2.1
035S	AK	200	153	186	300	—	—	—	1	134.6	754	463	3*	1.5	4.35	5.9
	AN	230	145	177	300	—	—	—		126.9	594	340				5.9
	AR	460	73	89	150	—	—	—		63.5	297	195				3.0
	AS	575	55	67	110	—	—	—		48.0	245	N/A				2.1
030D	AK	200	139	148	200	—	—	—	1	59.7	308	188	4	1	4.0	4.8
	AN	230	139	148	200	—	—	—		59.7	308	188				4.8
	AR	460	70	75	100	—	—	—		30.1	154	104				2.4
	AS	575	52	58	80	—	—	—		22.7	135	N/A				1.5
035D	AK	200	138	146	200	—	—	—	1	59.2	374	222	4	1	4.0	4.8
	AN	230	138	146	200	—	—	—		59.2	374	222				4.8
	AR	460	69	73	100	—	—	—		29.6	187	108				2.4
	AS	575	50	55	70	—	—	—		21.7	135	N/A				1.5
040D	AK	200	171	190	250	—	—	—	1	73.7	428	250	4*	1.5	5.8	5.9
	AN	230	171	190	250	—	—	—		73.7	428	250				5.9
	AR	460	86	96	125	—	—	—		36.9	214	132				3.0
	AS	575	70	78	100	—	—	—		30.8	172	N/A				2.1
045D	AK	200	192	216	300	—	—	—	1 ea.	73.7/94.2	428/565	250/340	4*	1.5	5.8	5.9
	AN	230	192	216	300	—	—	—		73.7/94.2	428/565	250/340				5.9
	AR	460	96	108	150	—	—	—		36.9/47.1	214/283	132/156				3.0
	AS	575	76	85	110	—	—	—		30.8/35.9	172/230	N/A				2.1
050D	AK	200	203	226	300	—	—	—	1 ea.	84.4/94.2	470/565	292/340	4*	1.5	5.8	5.9
	AN	230	203	226	300	—	—	—		84.4/94.2	470/565	292/340				5.9
	AR	460	102	114	150	—	—	—		42.2/47.1	235/283	141/156				3.0
	AS	575	80	89	110	—	—	—		35.3/35.9	200/230	N/A				2.1
052D	AK	200	212	236	300	—	—	—	1	94.2	565	340	4*	1.5	5.8	5.9
	AN	230	212	236	300	—	—	—		94.2	565	340				5.9
	AR	460	107	118	150	—	—	—		47.1	283	156				3.0
	AS	575	81	90	125	—	—	—		35.9	230	N/A				2.1
055D	AK	200	239	270	350	—	—	—	1 ea.	121.2/94.2	650/565	400/340	4*	2	5.8	5.9
	AN	230	230	259	350	—	—	—		112.2/94.2	594/565	340/340				5.9
	AR	460	119	134	175	—	—	—		59.2/47.1	297/283	195/156				3.0
	AS	575	86	96	125	—	—	—		41.3/35.9	245/230	N/A				2.1

NOTES: RLA - Rated Load Amps at ARI Conditions of Service
MCA - Minimum Circuit Ampacity
MFS / HACR - Maximum fuse or HACR breaker size, protective device
LRA-XL - Locked Rotor Amps Standard Across the Line Starting
LRA-PW - Locked Rotor Amps Q Option Part Wind Starting

*Replace (1) 1.5 HP motors with (1) 1 HP motors per circuit on units with Low Ambient Option
N/A - Not Available

IMPORTANT: See additional notes on pages 88 and 89.

ELECTRICAL DATA: FIELD WIRING (60HZ/3PH)

AUDR-B Model		Nominal Voltage	Standard Field Wiring Data Wire Size Range and Quantity Single / Dual Point Power Source Standard Terminal Block Wire		Optional Unit Mtd. Disc. Swt. Wire		Optional Field Wiring Wire Size Range and Quantity Single Point Power Source Optional Terminal Block Wire	
			Qty	Size Range	Qty	Size range	Qty	Size range
021S	AK	200	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AN	230	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AR	460	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AS	575	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
024S	AK	200	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AN	230	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AR	460	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AS	575	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
027S	AK	200	1	#12 TO 2 / 0	1	#6 TO 350MCM	1	#6 TO 350MCM
	AN	230	1	#12 TO 2 / 0	1	#6 TO 350MCM	1	#6 TO 350MCM
	AR	460	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AS	575	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
030S	AK	200	1	#4 TO 500 MCM	1	#6 TO 350MCM	1	#6 TO 350MCM
	AN	230	1	#4 TO 500 MCM	1	#6 TO 350MCM	1	#6 TO 350MCM
	AR	460	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AS	575	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
035S	AK	200	1	#4 TO 500 MCM	1	#6 TO 350MCM	1	#6 TO 350MCM
	AN	230	1	#4 TO 500 MCM	1	#6 TO 350MCM	1	#6 TO 350MCM
	AR	460	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
	AS	575	1	#12 TO 2 / 0	1	#3 TO 3 / 0	1	#3 TO 3 / 0
030D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	1	#10 TO 1 / 0		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A
035D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	1	#10 TO 1 / 0		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A
040D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	1	#10 TO 1 / 0		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A
045D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A
050D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A
052D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A
055D	AK	200	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AN	230	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AR	460	1	#4 TO 500 MCM	2	3 / 0 TO 500MCM		N/A
	AS	575	1	#12 TO 2 / 0	1	#10 TO 1 / 0		N/A

N/A = Not Available

NOTE: Single point power is standard for all voltages listed on AUDR-B 021-090.

ELECTRICAL DATA: (60Hz/3PH)

AUDR-B Model		Nom. Volts	Unit Circ. #1 RLA	Circ. #1 MCA	Circ. #1 MFS/ HACR	Unit Circ. #2 RLA	Circ. #2 MCA	Circ. #2 MFS/ HACR	Unit Option Single Point Power RLA	Option Single Point Power MCS	Option Single Point Power MFS/ HACR	Each Compressor Qty / Circuit	Each Compressor RLA	Each Compressor LRA-XL	Each Compressor LRA-PW	Condenser Fan Motors Qty	Condenser Fan Motors HP	Condenser Fan Motors Total kW	Condenser Fan Motors FLA Each
062D	AK	200	278	309	400	—	—	—	—	—	—	1	121.2	650	400	6*	1.5	8.7	5.9
	AN	230	260	288	400	—	—	—	—	—	—		112.2	594	340				5.9
	AR	460	137	152	200	—	—	—	—	—	—		59.1	297	195				3.0
	AS	575	99	110	150	—	—	—	—	—	—		43.0	245	N/A				2.1
070D	AK	200	305	339	450	—	—	—	—	—	—	1	134.6	754	463	6*	1.5	8.7	5.9
	AN	230	290	321	400	—	—	—	—	—	—		126.9	594	340				5.9
	AR	460	145	161	200	—	—	—	—	—	—		63.5	297	195				3.0
	AS	575	109	121	150	—	—	—	—	—	—		48.0	245	N/A				2.1
075D	AK	200	332	373	500	—	—	—	—	—	—	1 ea.	134.6/162	754/1070	463/654	6*	1.5	8.7	5.9
	AN	230	325	365	500	—	—	—	—	—	—		126.9/162	594/1070	340/654				5.9
	AR	460	169	191	250	—	—	—	—	—	—		63.5/87	297/535	195/330				3.0
	AS	575	128	145	200	—	—	—	—	—	—		48.0/67	245/405	N/A				2.1
080D	AK	200	360	400	500	—	—	—	—	—	—	1	162	1070	654	6	1.5	8.7	5.9
	AN	230	360	400	500	—	—	—	—	—	—		162	1070	654				5.9
	AR	460	192	214	300	—	—	—	—	—	—		87	535	330				3.0
	AS	575	147	164	225	—	—	—	—	—	—		67	405	N/A				2.1
085D	AK	200	364	385	450	—	—	—	—	—	—	1 ea.	84.4/73.7	470/428	292/250	8*	1.5	11.6	5.9
	AN	230	364	385	450	—	—	—	—	—	—		84.4/73.7	470/428	292/250				5.9
	AR	460	196	207	250	—	—	—	—	—	—		45.0/40.6	235/214	141/132				3.0
	AS	575	155	164	200	—	—	—	—	—	—		38.0/30.8	200/172	N/A				2.1
090D	AK	200	383	407	500	—	—	—	—	—	—	1 ea.	94.2/73.7	565/428	340/250	8*	1.5	11.6	5.9
	AN	230	383	407	500	—	—	—	—	—	—		94.2/73.7	565/428	340/250				5.9
	AR	460	192	204	250	—	—	—	—	—	—		47.1/36.9	283/214	156/132				3.0
	AS	575	159	169	200	—	—	—	—	—	—		40.0/30.8	230/172	N/A				2.1
100D	AK	200	203	226	300	203	226	300	405	428	500	1 ea.	94.2/84.4	565/470	340/292	8*	1.5	11.6	5.9
	AN	230	203	226	300	203	226	300	405	428	500		94.2/84.4	565/470	340/292				5.9
	AR	460	203	215	250	—	—	—	—	—	—		47.1/42.2	283/235	156/141				3.0
	AS	575	160	169	200	—	—	—	—	—	—		35.9/35.3	230/200	N/A				2.1
102D	AK	200	236	263	350	236	263	350	472	498	600	2	106	565	340	8*	1.5	11.6	5.9
	AN	230	236	263	350	236	263	350	472	498	600		106	565	340				5.9
	AR	460	236	250	300	—	—	—	—	—	—		53	283	156				3.0
	AS	575	161	170	200	—	—	—	—	—	—		35.9	230	N/A				2.1
112D	AK	200	245	273	350	245	276	350	490	521	600	1 ea.	121.2/94.2	650/565	400/340	10*	1.5	14.5	5.9
	AN	230	226	264	350	226	264	350	452	500	600		112.2/94.2	594/565	340/340				5.9
	AR	460	243	258	300	—	—	—	—	—	—		59.2/47.1	297/283	195/156				3.0
	AS	575	176	186	225	—	—	—	—	—	—		41.3/35.9	245/230	N/A				2.1
120D	AK	200	276	307	400	276	307	400	551	582	700	2	123	650	400	10*	1.5	14.5	5.9
	AN	230	276	307	400	276	307	400	551	582	700		123	594	340				5.9
	AR	460	274	290	350	—	—	—	—	—	—		61	297	195				3.0
	AS	575	197	208	250	—	—	—	—	—	—		44	245	N/A				2.1
130D	AK	200	286	319	450	286	319	450	571	605	700	1 ea.	134.6/121.2	650/754	463/400	10*	1.5	14.5	5.9
	AN	230	271	303	400	271	303	400	542	574	700		129.0/112.2	594/594	340/340				5.9
	AR	460	276	292	350	—	—	—	—	—	—		63.5/59.2	297/297	195/195				3.0
	AS	575	200	212	250	—	—	—	—	—	—		48.0/41.3	245/245	N/A				2.1
140D	AK	200	314	349	450	314	349	450	627	662	800	2	139	754	463	12*	1.5	17.4	5.9
	AN	230	314	349	450	314	349	450	627	662	800		139	594	340				5.9
	AR	460	318	336	400	—	—	—	—	—	—		70.5	297	195				3.0
	AS	575	241	254	300	—	—	—	—	—	—		53.8	245	N/A				2.1

NOTES: RLA - Rated Load Amps at ARI Conditions of Service
MCA - Minimum Circuit Ampacity
MFS / HACR - Maximum fuse or HACR breaker size, protective device
LRA-XL - Locked Rotor Amps Standard Across the Line Starting
LRA-PW - Locked Rotor Amps Q Option Part Wind Starting

*Replace (2) 1.5 HP motors with (2) 1 HP motors on units with Low Ambient Option
N/A - Not Available

IMPORTANT: See additional notes on pages 88 and 89.

ELECTRICAL DATA: FIELD WIRING (60HZ/3PH)

AUDR-B Model		Nominal Voltage	Standard Field Wiring Data Wire Size Range and Quantity Single / Dual Point Power Source Standard Terminal Block Wire		Optional Unit Mtd. Disc. Swt. Wire		Optional Field Wiring Wire Size Range and Quantity Single Point Power Source Optional Terminal Block Wire		Optional Unit Mtd. Disc. Swt. Wire	
			Qty	Size Range	Qty	Size range	Qty	Size range	Qty	Size Range
062D	AK	200	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AN	230	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AR	460	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AS	575	1	#12 TO 2 / 0	1	#6 TO 350MCM		N/A		N/A
070D	AK	200	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AN	230	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AR	460	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AS	575	1	#12 TO 2 / 0	1	#6 TO 350MCM		N/A		N/A
075D	AK	200	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AN	230	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AR	460	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AS	575	1	#12 TO 2 / 0		#6 TO 350MCM		N/A		N/A
080D	AK	200	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AN	230	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AR	460	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AS	575	1	#6 TO 400MCM	1	#6 TO 350MCM		N/A		N/A
085D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AR	460	1	1 / 0 /TO 600MCM	1	#6 TO 350MCM		N/A		N/A
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		N/A		N/A
090D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM		N/A		N/A
	AR	460	1	1 / 0 /TO 600MCM	1	#6 TO 350MCM		N/A		N/A
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		N/A		N/A
100D	AK	200	1 1	#4 TO 500MCM #4 TO 500MCM	1 1	#6 TO 350MCM #6 TO 350MCM	2	1 / 0 /TO 600MCM	2	3/0 TO 500MCM
	AN	230	1 1	#4 TO 500MCM #4 TO 500MCM	1 1	#6 TO 350MCM #6 TO 350MCM	2	1 / 0 /TO 600MCM	2	3/0 TO 500MCM
	AR	460	2	1 / 0 /TO 600MCM	1	#6 TO 350MCM		1 / 0 /TO 600MCM		#6 TO 350MCM
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		#4 TO 500MCM		#6 TO 350MCM
102D	AK	200	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM	2	3/0 TO 500MCM
	AN	230	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM	2	3/0 TO 500MCM
	AR	460	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		1 / 0 /TO 600MCM		3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		#4 TO 500MCM		#6 TO 350MCM
112D	AK	200	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM	2	3/0 TO 500MCM
	AN	230	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM	2	3/0 TO 500MCM
	AR	460	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		1 / 0 /TO 600MCM		3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		#4 TO 500MCM		#6 TO 350MCM
120D	AK	200	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM	3	#1 TO 500MCM
	AN	230	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM	3	#1 TO 500MCM
	AR	460	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		1 / 0 /TO 600MCM		3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		#4 TO 500MCM		#6 TO 350MCM
130D	AK	200	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM		N/A N/A
	AN	230	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	1 / 0 /TO 600MCM		N/A N/A
	AR	460	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		1 / 0 /TO 600MCM		3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	1	#6 TO 350MCM		#4 TO 500MCM		#6 TO 350MCM
140D	AK	200	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	#4 TO 500MCM		N/A N/A
	AN	230	1 1	#4 TO 500MCM #4 TO 500MCM	2 2	3 / 0 TO 500MCM 3 / 0 TO 500MCM	2	#4 TO 500MCM		N/A N/A
	AR	460	2	1 / 0 /TO 600MCM	2	3 / 0 TO 500MCM		1 / 0 /TO 600MCM		3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	2	3 / 0 TO 500MCM		#4 TO 500MCM		3 / 0 TO 500MCM

N/A = Not Available

NOTE:
1. Single point power is standard for all voltages listed on AUDR-B 021-090.
2. Dual point power is standard for 200 and 230 volt AUDR-B 100-200.
3. Single point power is standard for 460 and 575 volt AUDR-B 021-200.

ELECTRICAL DATA: (60Hz/3PH)

AUDR-B Model	Nom. Volts	Unit Circ. #1 RLA	Circ. #1 MCA	Circ. #1 MFS/HACR	Circ. #2 RLA	Circ. #2 MCA	Circ. #2 MFS/HACR	Unit Option Single Point Power RLA	Single Point Power MCS	Single Point Power MFS/HACR	Each Compressor Qty/Circ.	Each Compressor RLA	Each Compressor LRA-XL	Each Compressor LRA-PW	Condenser Fan Motors Qty	Condenser Fan Motors HP	Condenser Fan Motors Total kW	Condenser Fan Motors FLA Each
155D	AK	200	332	373	500	332	373	500	664	705	800	1 ea.	134.6/162	754/1070	463/654	12*	1.5	17.4	5.9
	AN	230	325	365	500	325	365	500	649	690	800		126.9/162	594/1070	340/654				5.9
	AR	460	341	364	450	—	—	—	—	—	—		63.5/89	297/535	195/330				3.0
	AS	575	264	281	350	—	—	—	—	—	—		48.0/71	245/405	NA				2.1
170D	AK	200	392	436	600	392	436	600	783	828	1000	2	178	1070	654	12*	1.5	17.4	5.9
	AN	230	392	436	600	392	436	600	783	828	1000		178	1070	654				5.9
	AR	460	392	415	500	—	—	—	—	—	—		89	535	330				3.0
	AS	575	314	332	400	—	—	—	—	—	—		72	405	NA				2.1
180D	AK	200	405	455	600	405	455	600	809	859	1000	1 ea.	162/201	1070/1070	654/654	14*	1.5	20.3	5.9
	AN	230	405	455	600	405	455	600	809	859	1000		162/201	1070/1070	654/654				5.9
	AR	460	460	488	600	—	—	—	—	—	—		97/112	535/535	330/330				3.0
	AS	575	310	328	400	—	—	—	—	—	—		67/73	405/405	NA				2.1
185D	AK	200	405	455	600	405	455	600	809	859	1000	1 ea.	162/201	1070/1070	654/654	14*	1.5	20.3	5.9
	AN	230	405	455	600	405	455	600	809	859	1000		162/201	1070/1070	654/654				5.9
	AR	460	460	488	600	—	—	—	—	—	—		97/112	535/535	330/330				3.0
	AS	575	310	328	400	—	—	—	—	—	—		67/73	405/405	N/A				2.1
190D	AK	200	470	523	700	470	523	700	939	993	1200	2	214	1070	654	14*	1.5	20.3	5.9
	AN	230	470	523	700	470	523	700	939	993	1200		214	1070	654				5.9
	AR	460	482	510	600	—	—	—	—	—	—		110	535	330				3.0
	AS	575	318	336	400	—	—	—	—	—	—		72	405	N/A				2.1
200D	AK	200	470	523	700	470	523	700	939	993	1200	2	214	1070	654	14*	1.5	20.3	5.9
	AN	230	470	523	700	470	523	700	939	993	1200		214	1070	654				5.9
	AR	460	482	510	600	—	—	—	—	—	—		110	535	330				3.0
	AS	575	318	510	600	—	—	—	—	—	—		72	405	N/A				2.1

NOTES: RLA - Rated Load Amps at ARI Conditions of Service
MCA - Minimum Circuit Ampacity
MFS / HACR - Maximum fuse or HACR breaker size, protective device
LRA-XL - Locked Rotor Amps Standard Across the Line Starting
LRA-PW - Locked Rotor Amps Q Option Part Wind Starting

*Replace (2) 1.5 HP motors with (2) 1 HP motors on units with Low Ambient Option

N/A - Not Available

General Electrical Notes

1. Main power must be supplied from a single or dual power source field-supplied fused disconnect(s) using dual element time delay fuses. Unit models 100D thru 200D using 200 or 230 volt power require two separate power sources (dual power sources). Power supply is three phase unless otherwise shown.

2. The maximum incoming wire size is 500 mcm. On units having a MCA greater than 500 mcm wire, the factory- supplied field power terminal block will accept two parallel field wires per pole.

3. Compressor starting is XL or PWS only.

4. Control circuit power (115VAC) must be field-supplied from a separate field-mounted fused disconnect (15 amp max. fuse size) unless the factory-mounted and wired control transformer option is ordered.

ELECTRICAL DATA: FIELD WIRING (60HZ/3PH)

AUDR-B Model		Nominal Voltage	Standard Field Wiring Data Wire Size Range and Quantity Single / Dual Point Power Source				Optional Field Wiring Wire Size Range and Quantity Single Point Power Source			
			Standard Terminal Block Wire		Optional Unit Mtd. Disc. Swt. Wire		Optional Terminal Block Wire		Optional Unit Mtd. Disc. Swt. Wire	
			Qty	Size Range	Qty	Size range	Qty	Size range	Qty	Size Range
155D	AK	200	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	#4 TO 500MCM		N/A
			1	#4 TO 500MCM	2	3 / 0 TO 500MCM				N/A
	AN	230	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	#4 TO 500MCM		N/A
			1	#4 TO 500MCM	2	3 / 0 TO 500MCM				N/A
	AR	460	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM	2	3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM	2	3 / 0 TO 500MCM
170D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AR	460	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM	2	3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM	2	3 / 0 TO 500MCM
180D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AR	460	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	#4 TO 500MCM	2	3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM		3 / 0 TO 500MCM	1	#4 TO 500MCM	2	3 / 0 TO 500MCM
185D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AR	460	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	#4 TO 500MCM	2	3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM	2	3 / 0 TO 500MCM
190D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AR	460	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	#4 TO 500MCM	2	3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM	2	3 / 0 TO 500MCM
200D	AK	200	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AN	230	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	1 / 0 TO 600MCM		N/A
			2	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM		N/A
	AR	460	2	#4 TO 500MCM	2	3 / 0 TO 500MCM	2	#4 TO 500MCM	2	3 / 0 TO 500MCM
	AS	575	1	#4 TO 500MCM	2	3 / 0 TO 500MCM	1	#4 TO 500MCM	2	3 / 0 TO 500MCM

N/A = Not Available

NOTE: 1. Dual point power is standard for 200 and 230 volt AUDR-B 100-200.
2. Single point power is standard for 460 and 575 volt AUDR-B 021-200.

5. Crankcase heaters are wired in the control circuit. On units with field-supplied control circuit power, the 15 amp fused disconnect switch must be closed (on) at all times for heater operation. **On units ordered with the control transformer option, the main unit power field fused disconnect (and local safety switch if used) must be closed (on) at all times for heater operation.**
6. The compressor crankcase heaters must be energized for 24 hours before the unit is initially started or after a prolonged open disconnect.
7. All field wiring must be in accordance with all applicable local and national codes.
8. Minimum and maximum unit supply voltages are shown in the following tabulated data.

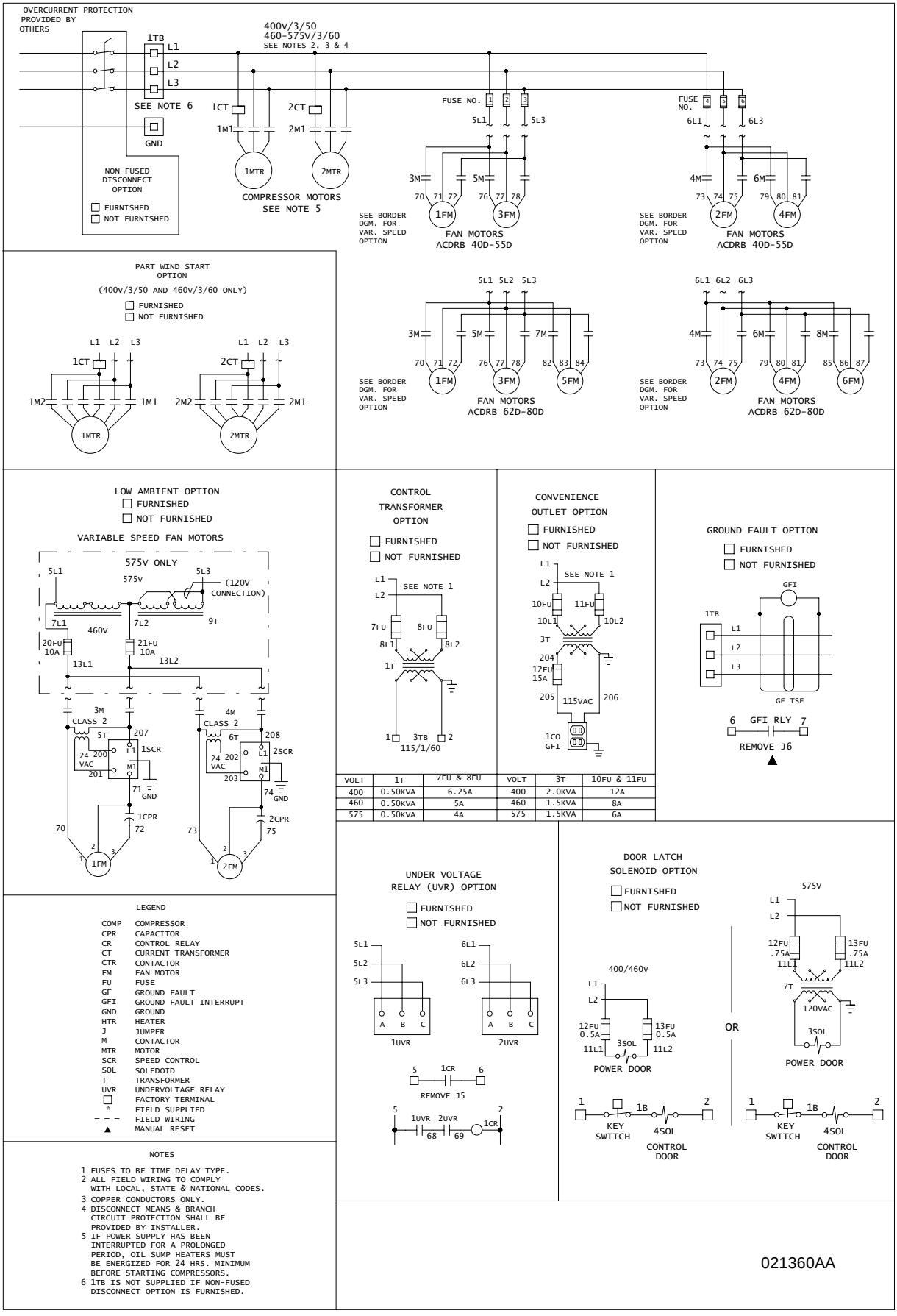
TABLE 89A CRANKCASE HEATER

UNIT MODELS	Qty.	Watts	FLA Each
021S, 024S, 027S, 030S	1	100	.8
035S	1	200	1.6
030D, 035D, 040D, 045D, 050D, 052D, 055D, 062D	2	100	.8
070D, 075D, 080D	2	200	1.6
085D, 090D, 100D, 102D, 112D, 120D	4	100	.8
130D	2	100	.8
	2	200	1.6
140D, 155D, 170D, 180D, 185D, 190D, 195D, 200D	4	200	1.6

Supply Voltage

Nominal	Minimum	Maximum
200V	**187V**	**220V**
230V	**207V**	**253V**
460V	**414V**	**506V**
575V	**518V**	**632V**

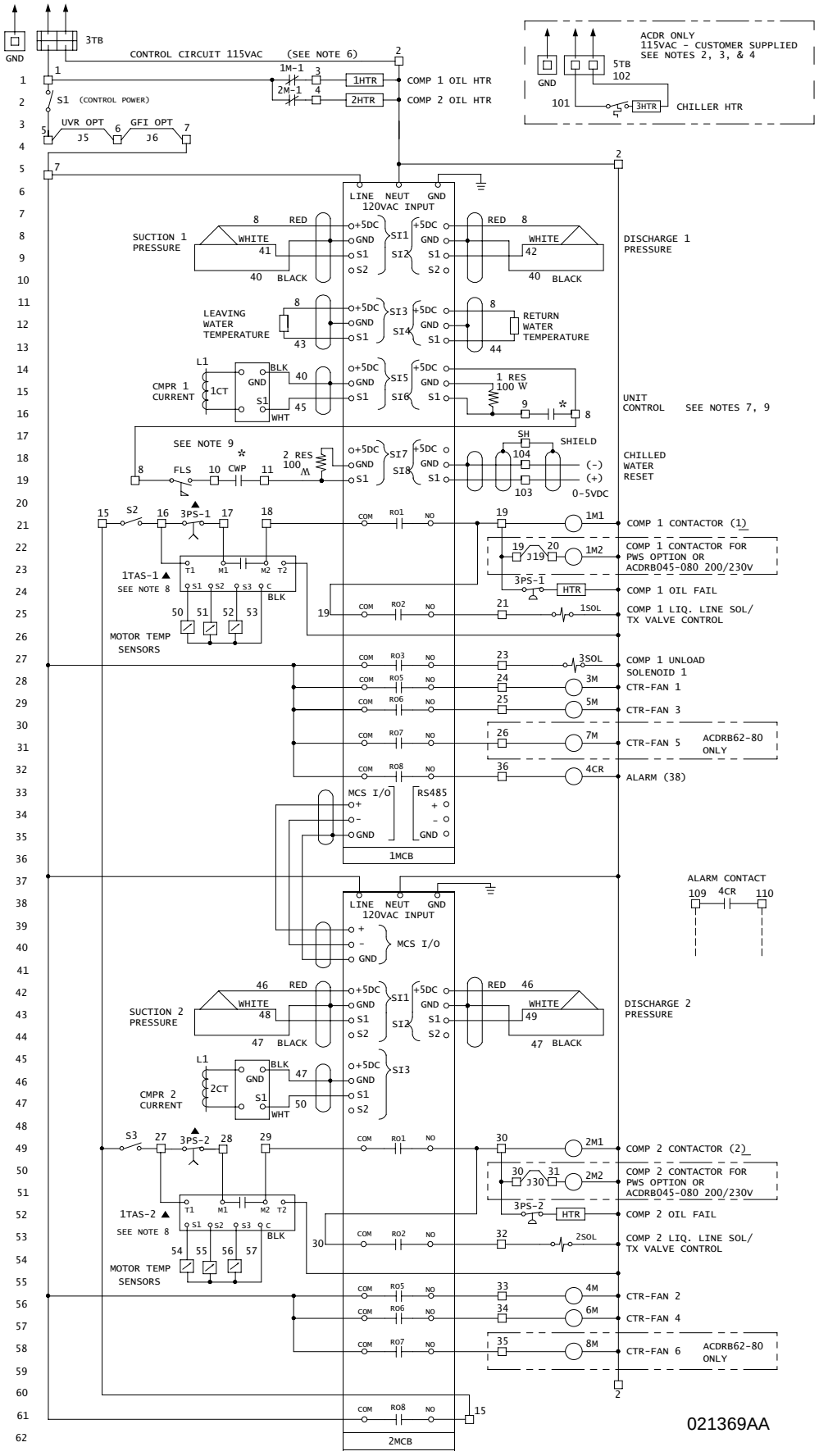
TYPICAL POWER WIRING DIAGRAM (TWO COMPRESSOR MODEL)



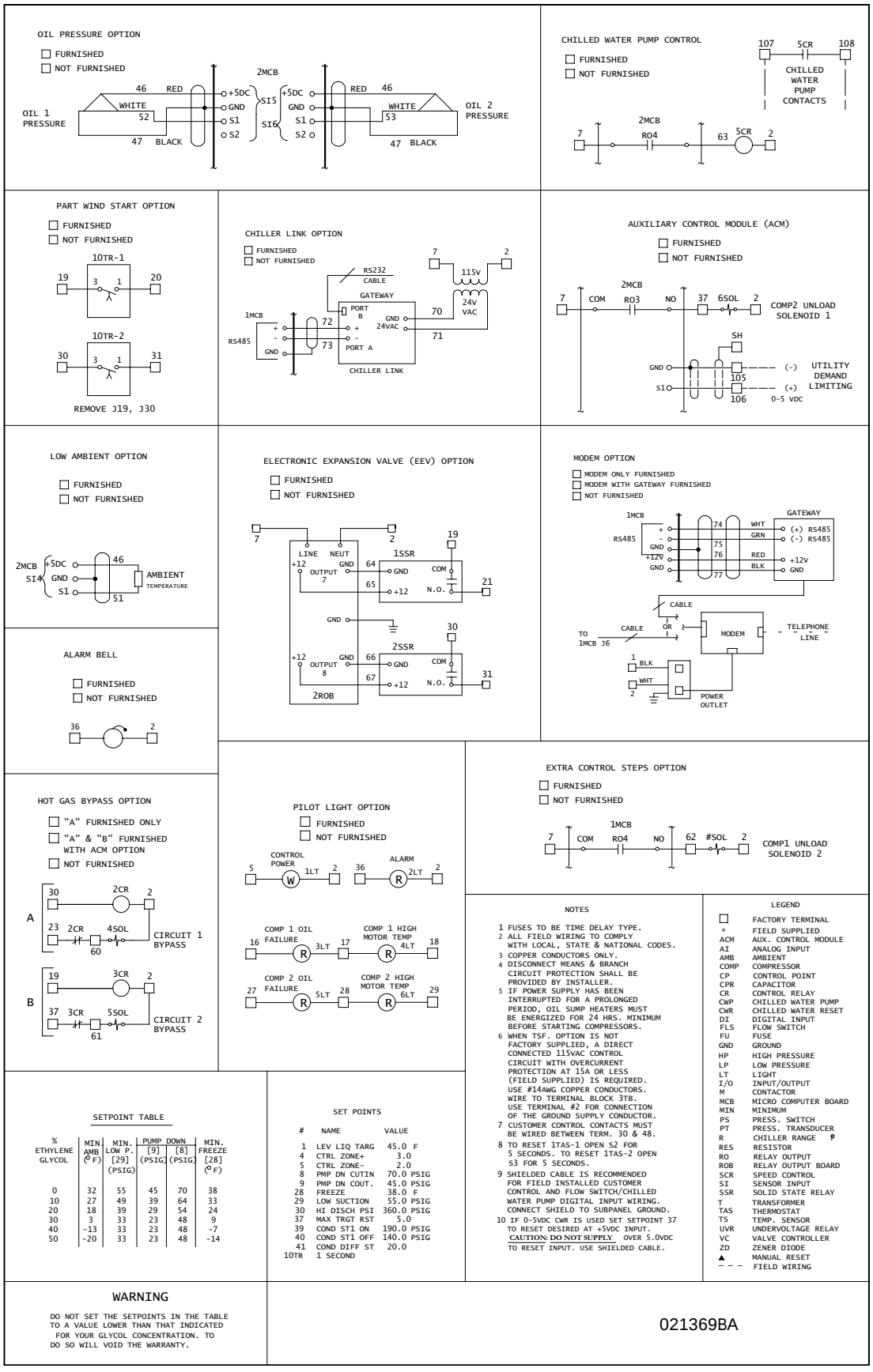
VOLT	1T	7FU & 8FU
400	0.50KVA	6.25A
460	0.50KVA	5A
575	0.50KVA	4A

VOLT	3T	10FU & 11FU
400	2.0KVA	12A
460	1.5KVA	8A
575	1.5KVA	6A

TYPICAL CONTROL WIRING DIAGRAM (TWO COMPRESSOR MODEL) • • • •



TYPICAL CONTROL WIRING DIAGRAM (TWO COMPRESSOR MODEL) • • • •



PRODUCT SPECIFICATION

Part 1: General

1.01 Work Included

A. Provide complete Air Cooled Condensing Units utilizing reciprocating compressors suitable for outdoor installation and a Full Function Microcomputer Controller with Windows® based PC interface. Contractor shall furnish and install Condensing Units coupled with remote DX Air Handlers or Remote Cooler Modules for Split-System Chillers as shown and scheduled on the drawings. Units shall be installed in accordance with this specification.

B. (Condensing Units used as Split-System Chillers coupled with (Optional) Remote Cooler Modules shall be selected for use with water / (% ethylene or propylene glycol)).

C. (Condensing Units used with DX Air Handlers shall be selected for use as
(Return Air Temperature Control Constant Volume systems)
(Leaving Air Temperature Control Constant or Variable Volume systems)
(Leaving Air Temperature Control with Fresh Air Economizer for Constant or Variable Volume Systems with Entering Air Enthalpy override)
(Entering Air Control for 100% Outside Air Systems with Hot Gas Bypass supplied on all circuits for Constant Air Volume only)
(Multiple Evaporator Systems with Suction Pressure Control)

1.02 Quality Assurance

A. Unit construction shall be designed to conform to ANSI / ASHRAE 15 latest version safety standards, NEC (USA), and ASME Section VIII (USA) applicable codes.

B. Unit shall have ETL (USA) and cETL (Canadian) approval (60Hz)

C. The unit shall comply with all local codes.

D. Unit efficiency shall meet or exceed ASHRAE Standard 90.1 (1989)

1.03 Design Base

A. The construction drawings indicate a system based on a selected manufacturer of equipment and the design data available to the Engineer during construction document preparation. Electrical services, size, configuration and space allocations are consistent with that manufacturer's recommendations and requirements.

B. Other listed or approved manufacturers are encouraged to provide equipment on this project; however, it shall be the Contractor and/or Supplier's responsibility to assure the equipment is consistent with the design base. No compensation will be approved for revisions required by the design base or other manufacturers for any different services, space, clearances, etc.

1.04 Related Work Specified Elsewhere

A. General Provisions: Section 15XXX

B. General Completion and Startup: Section 15XXX

C. Equipment & Pipe Identification: Section 15XXX

D. Tests: Section 15XXX

E. Vibration Isolation: Section 15XXX

F. (Optional Split-System Chiller with Remote Cooler Module): Section 15XXX

1.05 Submittals

A. Submit shop drawings on each piece of equipment specified in accordance with Specifications Section 51010, General Provisions.

B. Furnish three (3) sets of Operations and Maintenance Data.

C. Furnish one (1) copy of submittal for each chiller unit to the Temperature Control Contractor.

1.06 Delivery and Handling

A. The unit shall be delivered to the job site completely assembled and charged with compressor oil and a positive charge of dry nitrogen to ensure clean dry refrigerant circuits by the unit manufacturer. The refrigerant shall be supplied by the contractor.

B. Delivery and handling shall comply with the manufacturer's instruction for rigging and handling.

C. The unit controls shall be capable of withstanding 150°F (66°C) - storage temperature in the control panel for an indefinite period of time.

1.07 Start-up

A. The contractor shall provide labor to accomplish the check, test and startup procedure as recommended by the unit manufacturer.

B. The startup serviceman shall provide and complete the manufacturer's check, test and start forms. One copy shall be sent to the engineer and one copy to the manufacturer's factory.

C. (The unit manufacturer shall provide a factory-trained serviceman to supervise the original startup of the units for final operation.)

1.08 Warranty

A. The equipment supplier shall provide a warranty on the equipment supplied by them exclusive of inter-connecting piping and refrigerant for a period of one (1) year from date of start-up or 18 months from date of shipment, whichever occurs first.
B. The start-up date shall be certified by the Mechanical Contractor, and provided to the Manufacturer, Engineer and Owner.
C. (Provide an optional extended (4) four-year warranty on the compressors only, 5 years total).
D. (During the warranty period, the equipment supplier shall furnish the services of an authorized service agency for all labor associated with parts replacement or repair, and start-up of the refrigeration equipment at the beginning of each cooling season. The equipment supplier shall also furnish the services of an authorized service agent for one maintenance visit during winter months of operation, such times shall be designated by the Owner.)

1.09 Maintenance

Maintenance of the equipment shall be the responsibility of the owner and performed in accordance with the manufacturer's instructions.

Part 2: Products

2.01 Reciprocating Air Cooled Condensing Units

2.02 Acceptable Manufacturers

A. Dunham-Bush, Inc.
B. (Approved equal)

2.03 General

A. Furnish and install as shown on the plans, air-cooled reciprocating compressor condensing units. Units shall be Dunham-Bush Model AUDR-B or equal.
B. The units are to be completely factory assembled and wired in a single unit complete with reciprocating compressor, condenser, starting control with safety and operating controls. The unit is to be given a complete factory electrical and control functional sequence test.
C. The units shall be built in accordance with all applicable national and local codes including the ANSI safety code; the National Electrical Code and applicable ASME Code for Unfired Pressure Vessels for (Optional Remote Cooler Module) if supplied.

2.04 Performance

The units shall be furnished as shown on capacity schedules and drawings.

2.05 Construction

The unit will be designed for maximum corrosion protection being of heavy gauge, G90 approved galvanized steel construction. The base and legs shall be manufactured of 10 gauge galvanized steel formed channel. Frame members are constructed of 12 gauge, galvanized steel. The Unit Control Center, end enclosure panels, and fan decking shall be constructed of 16 gauge galvanized steel and be finished with a baked powder high grade outdoor quality coating system which exceeds 500 hour salt spray requirements when tested in accordance with the ASTM-B-117 specifications.

2.06 Evaporator And Condensing Unit Control Functions

A. Split-System Chiller Operation

(Optional Remote Cooler Module shall consist of an insulated cooler mounted on a support frame for floor, shelf or suspended installation. The Remote Cooler Module shall include expansion valves, sight glasses, moisture indicators, liquid line solenoid valves, replaceable core filter/dryers, liquid line shut off valves charging and gauge connections. All operating controls including freeze protection entering and leaving water temperature sensors shall be wired to a junction box for field connection back to the condensing unit. The refrigerant shall be supplied by the contractor. The cooler shall be direct expansion, shell and tube type. The shell shall be fabricated from carbon steel, with enhanced inner fin construction inside seamless copper tubes. The tube sheets shall be heavy gauge copper or heavy carbon plate steel. The tubes shall be roller-expanded or brazed into the tubesheets. Water control baffles shall be copper or cold-rolled steel. The heads shall be constructed of carbon steel. Evaporators shall be designed, constructed and inspected to comply with latest edition ASME code for unfired pressure vessels. Shell side (water) design working pressure shall be minimum 200 PSIG and tube side (refrigerant) design working pressure shall be minimum 300 PSIG for removable head vessels and 300 PSIG).

B. DX Air Handler Operation
Refrigeration specialties such as expansion valves, sight glasses, moisture indicators, liquid line solenoid valves, replaceable core filter/dryers, liquid line shut off valves charging and gauge connections shall be supplied by the contractor.
The refrigerant shall be supplied by the contractor.
(The DX Air Handler shall be supplied by Dunham-Bush Inc. or equal.)
(Duct sensors shall be supplied by the condensing unit manufacturer, for field wiring to the condensing unit.)
(Enthalpy sensors shall be supplied by the condensing unit manufacturer, for Air Handler applications with Economizer Control.)
(Enthalpy sensors shall be supplied by the condensing unit manufacturer, for Air Handler applications requiring 100% Outside Air control.)

2.07 Condenser

The condenser coil is to be constructed of copper tubes and die formed aluminum fins having self-spacing collars. Fins shall be mechanically bonded to the tubes. An integral sub-cooling loop shall be incorporated into the coil. Condenser divider baffles shall fully separate each condenser fan section to control the airflow to maintain proper head pressure control.

2.08 Fans

The fans shall be heavy duty, aluminum blade, direct drive propeller type. Motors shall be three phase with internal overloads and are to be permanently lubricated.

2.09 Compressor

A. The reciprocating compressors shall be of the serviceable semi-hermetic type. All compressors shall be 1750 RPM direct drive with an integral four-pole hermetic squirrel cage motor. A dust-proof terminal box, located in an accessible location on the compressor, shall contain all connection terminals.
B. The compressors shall be fitted with a crankcase heater, large suction filter, oil sight glass, oil strainer and magnetic crankcase plug. The lubrication system shall include a forced feed, positive displacement, reversible oil pump with internal oil equalization.

2.10 Capacity Control

A combination of cylinder unloading and/or compressor cycling shall be utilized to match the demand requirement of the system.
A Pro-active Full Function Microcomputer Controller with Windows® based interface shall unload or cycle compressors in response to leaving water temperature for Split-System Chillers and maintain water temperature within 1.3°F of setpoint. This system is to provide precise and stable control of supply water temperature over the complete range of operating conditions. It shall be capable of a system capacity range from 100% to % at specified conditions without hot gas bypass.
A Pro-active Full Function Microcomputer Controller with Windows® based interface shall unload or cycle compressors in response to return air temperature sensing, leaving air temperature sensing or suction pressure control for Condensing Units used with DX Air Handlers.

2.11 Refrigerant Circuit

A. (Single compressor) (Multiple compressors) shall be used with a direct expansion evaporator.
B. The condensing unit shall have independent refrigerant circuits up through 80 nominal tons.
C. Over 80 tons the condensing units shall have no more than two compressors per refrigerant circuit.
D. The condensing unit shall use HCFC-22 refrigerant, a positive pressure refrigerant that will not require a purge system.
E. The condensing unit shall have a high pressure relief valve in each circuit.
F. (Optional Remote Cooler Modules) and other cold surfaces shall be insulated as required by the contractor to prevent condensation at ambient conditions of 75% humidity of 90°F wet bulb with no air movement. Each refrigerant circuit shall include high pressure relief valve, expansion valve, sight glass, moisture indicator, solenoid valve, replaceable core filter-drier, liquid line shut off valves, charging and gauge connections.

2.12 Control Center

A. Control Center shall be fully enclosed in a steel, baked powder high grade outdoor quality coating system tested to maintain integrity under the ASTM-B-117 specifications, control panel with hinged access doors. Dual compartments, separating safety and operating controls from the power controls, are to be provided. Controls shall include:
   1. Compressor, solid state, thermal sensing overloads, manual reset
   2. High refrigerant discharge pressure, manual reset
   3. Separate power terminal blocks for main power, 115vAC control power
   4. Compressor starter including current sensing overload protection

5. Pro-active Full Function PC Windows® Based Microcomputer Controller with factory installed sensors including integral anti-recycle protection
6. Complete labeling of all control components
7. Numbered terminal strips and labeled components for easier wire tracing
8. Condenser pressure sensing fan cycling control for start-up and operation down to 30°F.
9. (Under voltage and phase failure protection against low voltage, or phase reversal).
10. (Over and under voltage protection relay protects against high and low incoming voltage conditions as well as single phasing, phase reversal and phase imbalance.)
11. (Operating and safety lights visible from unit exterior including:)
    a. Power on
    b. Individual compressor operation
    c. Safety failure for each refrigerant circuit
12. (Control panel solenoid door latch to prevent door opening before turning off power to the unit).
13. (Electronic expansion valves which shall be controlled by the microcomputer.)

B. **Control Center's** individual Microcomputer Controller with Full Function PC Windows® based interface shall provide compressor staging based on (Select only one of the following)

(Leaving Water Temperature control for Split-System Chillers)
(Return Air Temperature Control for Constant Volume DX Air Handler Systems)
(Leaving Air Temperature Control for Constant or Variable Volume DX Air Handler Systems)
(Leaving Air Temperature Control for Fresh Air Economizer with Entering Air Enthalpy override for Constant or Variable Volume DX Air Handler Systems)
(Entering Air Enthalpy Control for 100% Outside Fresh Air DX Air Handler Systems with Hot Gas Bypass active on all circuits)
(Suction Pressure Control for Multiple Evaporator DX Air Handler Systems)

It shall have two lines of 16 large characters each Alpha-Numeric Liquid Crystal display, and the inputs shall be through a 16 single function keypad through the Windows® based, menu driven prompts. The displayed data shall be updated once per second and the microcomputer shall have a Non-Volatile memory used for all control information. The microcomputer shall have an extended operating range of -20°F to +158°F (-29 to +70°C). (It shall be proactive in control and accommodate system anomalies such as high condenser temperature and high entering water temperature by controlling loading and refrigerant flow to keep the machine on line but at reduced capacity until the condition is corrected.)

C. **Microcomputer** individual unit controller shall provide as a minimum the following features and options.

1. Microcomputer - Unit Control shall provide the following capabilities:
    a. Power control relay with start-up control sequence
    b. Staging of compressors, hot gas bypass and unloader(s) to achieve precise control of Split-System functions
    c. Activating fans of the air-cooled condensing unit to control head pressure
    d. Seven day time clock with schedules for machine control
    e. Automatic pump down with pro-active cycle detection to eliminate excessive compressor cycling
    f. Pro-Active control of unloader and /or hot gas bypass to help prevent high pressure or low pressure trips
    g. Pro-Active control providing safeties for high and low refrigerant pressures, (freeze protection for the cooler on Split-System Chillers), to eliminate nuisance trips
    h. Pro-Active loading & unloading to eliminate overloading during start-up to reduce compressor cycling
    i. Continuous evaluation of sensors
    j. (Control of Hot Gas bypass circuit)
2. **Microcomputer - Unit Protection** shall provide the following:
    a. Low pressure cutout with adjustable time parameters & Pro-Active safety
    b. High pressure cutout with adjustable time parameters & Pro-Active safety
    c. Automatic re-start from power outage with event posting
    d. Battery backed-up real time clock and memory with over 10 years life and automatic recharge of lithium ion battery that requires no service.
    e. Safeties for temporary shutdown as well as lockout protection that requires manual reset
    f. (Freeze protection on leaving chilled water temperature for optional Remote Cooler Split-System Chiller operation)
    g. Anti-recycle timing
    h. Sensor error
    i. Pump down failure
    j. (Pro-active Oil Pressure Safety for compressor protection with time and pressure parameters)

k. (Chilled water pump control system with both safety or lockout ability for optional Remote Cooler Split-System Chiller operation)

3. **Microcomputer - Readouts** shall provide the following:
   a. Sensor inputs
   b. (Leaving liquid temperature for optional Remote Cooler Split-System Chiller operation)
   c. (Entering liquid temperature for optional Remote Cooler Split-System Chiller operation)
   d. Compressor ampere draw
   e. Suction pressure each circuit
   f. Discharge pressure each compressor
   g. Unit control contacts
   h. (Water flow switch for optional Remote Cooler Split-System Chiller operation)
   i. (Chilled air or liquid reset temperature)
   j. Digital Outputs
   k. Compressor control status
   l. Unloader control status
   m. Liquid line solenoid control status
   n. Condenser fan control status
   o. Alarm control status
   p. Control power status
   q. (Compressor oil pressure safety each compressor)
   r. (Low ambient temperature)
   s. (Utility demand limit)
   t. (Chilled water pump control for optional Remote Cooler Split-System Chiller operation)
   u. (Electronic expansion valve)
4. **Microcomputer - Setpoints** shall provide the following:
   a. High discharge pressure
   b. Low suction pressure
   c. (Freeze protection temperature for Split-System Chiller operation)
   d. Leaving liquid temperature
   e. Control zone settings
   f. Fan condenser control
   g. Pump down settings
   h. High & low compressor amperes
   i. Low suction unload
   j. High discharge unload
   k. Anti-recycle delay setting
   l. (Compressor oil safety settings)
5. **Microcomputer - Alarm History** shall provide the following:
   a. The 32 most recent alarms can be displayed
   b. Low suction pressure of all circuits
   c. High discharge pressure of all circuits
   d. Freeze protection cutout
   e. Pump down failure of all circuits
   f. External shutdown of each compressor
   g. Communication failure
   h. Battery failure
   i. Time/date invalid
   j. Memory failure
   k. Power failure
   l. (Low compressor oil differential pressure)
6. **Microcomputer Remote Monitoring Capabilities** - shall include a complete Full Function Windows® based communication system through the following means:
   a. **PC Connection** - shall provide communications to a 3.1 or higher level Windows® based Personal Computer, or BMS (Building Automation System) to provide, as a minimum, the following:
      1. Dynamic system data update of all outputs, inputs, control states, and alarms
      2. Complete History Storage of all data needed for both Static and Dynamic graphing
      3. Multiple Authorization Code Levels based on operator or full service authorization for modification of setpoints and manual status
      4. Capability of up to 20 Chiller Packages networked together via RS485 (up to 6000 feet)
   b. **(Remote Mounted-Stand Alone Control Panel** - shall communicate and control a single unit, or network of up to twenty (20) units in a network, from a remote location up to 6000 feet away. The RS485 communications port shall be wired with a 3 wire shielded cable for up to 6000 feet away from the chiller, or 100 feet away through the RS232 communication system via a (4) wire shielded cable).

1. This option utilizes a duplicate display and keypad Control Terminal, similar to the one that shall be installed in the packaged chiller, or chiller network, and shall provide a full function operating terminal as well as a remote alarm function.
2. This remote Control Terminal must be in addition to the unit mounted controller, so the unit can be fully serviced locally, without using the Remote Control Terminal that may be as much as 6000 feet away.
3. The remote communications shall be accomplished through the RS485 high speed communications system up to 6000 feet away, or the RS232 communication system up to 100 feet away.

c. **(Telephone Modem** - for extended distance communications to a remote BMS System, a remote PC Computer or a Remote Mounted Stand Alone Control Terminal through the telephone system.)
   1. (Option 1. A 14400 baud modem shall be connected directly to the RS232 port on the microcomputer.)
   2. (Option 2. The Modem Option shall be capable of operating a network of up to 20 units in the network, connected via the RS485 port high speed communication system and a GATEWAY card, then connected through the modem for extended network communications via the telephone system.)

d. **(Communications to a Building Management System (BMS)** - shall be connected to the condensing unit (or condensing unit network system) as follows for remote communication:
   1. (A modem shall be connected to the RS232 communication port for long distance communication through the telephone system, and a translator must be provided for communication with the Building Management System.)
   2. (The RS232 communication system shall be used for connection up to 100 feet away from the chiller (or chiller network) when connected by a 4 wire shielded cable, and a translator must be supplied for communication with the Building Management System.)
   3. (The RS485 high speed communication system shall be connected up to 6000 feet away from the packaged chiller (or chiller network) when connected with a 3 wire shielded cable, and a translator must be supplied for communication with the Building Management System.)

e. (Chiller*LINK* - shall be supplied for communication from the condensing unit (or condensing unit Network) to the BMS (Building Management System) through BACnet or MODBUS communicating systems)

2.13 Starting Equipment

A. Unit mounted contactors with compressor motor module protection for each compressor.
B. Five (5) minute anti-recycle timer
C. (Non-fused disconnect switch with through-the-door interlocking handle.)
D. (Unit mounted power transformer to provide 115 Vac control power.)
E. (Part Wind Start or multiple small horsepower compressors for reduced inrush starting.)
F. (Ground fault interrupter.)

2.14 Additional Equipment

A. (Copper Fin/Copper Tube condenser coil.)
B. (Silicone polyester Poly-Coat condenser fin coating per ASTM B117 specification for maximum salt spray and corrosion resistance.)
C. Evaporator – Control Modes of Operation (Select only one of the eight control options following)
   (Remote Cooler Module for 44°F Chilled Water Temperature)
   (Remote Cooler Module for 42°F Chilled Water Temperature)
   (Remote Cooler Module for 40°F Chilled Water Temperature)
   (Remote Air Handler – Return Air – Constant Air Volume Control)
   (Remote Air Handler – Leaving Air – Constant or Variable Air Volume Control)
   (Remote Air Handler with Economizer – Leaving Air – Constant or Variable Air Volume Control)
   (Remote Air Handler – 100% Outside Air – Constant Air Volume Control – Only)
   (Remote Multiple Air Handlers – Suction Pressure Control)
D. (Convenience Outlet 115 volt AC powered dual 3 prong ground fault receptacle powered by dedicated transformer and fused for 15 amps.)
E. (Hot gas bypass valve to permit operation down to 50% of the last step of unit mechanical unloading capability.)
F. (Low ambient control to 0°F (-17.8°C) minimum starting ambient.)
G. (Extra low ambient control to -20°C) minimum starting ambient.)
H. (Low ambient lock-out control requiring a field setpoint.)

I. (Oil pressure reading through the microcomputer.)
J. (Gauges include suction, discharge and oil pressure for each refrigerant circuit in addition to the readings through the microcomputer.)
K. (Steel Painted Louvers for complete unit enclosure for general mechanical security and unit aesthetics.)
L. (Aluminum Painted Grills similar to louvers except manufactured of aluminum with 3/8" x 3 1/2" slots instead of louvers for hail damage protection and unit aesthetics.)
M. (Fin Guards Top only (1" x 4" wire mesh) for vertical side condenser coil protection.)
N. (Fin Guards Bottom only (1" x 4" wire mesh) for general unit mechanical security for the lower portion of the unit.)
O. (Under voltage and phase failure protection relay against low voltage, or phase reversal.)
P. (Over and under voltage protection relay protects against high and low incoming voltage conditions as well as single phasing, phase reversal and phase imbalance.)
Q. (Circuit Breakers to provide branch circuit protection.)
R. (Weatherproof Alarm Bell mounted and wired to indicate a common alarm fault.)
S. (Fully Painted Unit meets the requirements for outdoor unit application of 500 Hour Salt Spray Paint tested in accordance with ASTM-B-117.)
T. (Chilled Water Pump Control providing a contact closure for pump starting prior to starting the chiller.)
U. (Water Flow Switch for Optional Remote Cooler Split-Systems Chiller operation to be field mounted and wired.)
V. (Auxiliary Control Module providing auto circuit to circuit lead-lag where applicable, utility demand limiting (requires an external 0 to 5 volt DC signal), load limiting by compressor over current protection, high pressure limiting, low pressure limiting and extra steps of capacity control.)

Part 3: Execution

3.01 Installation Work By Mechanical Contractor

A. Install on a flat surface level within 1/8 inch and of sufficient strength to support concentrated loading. Place vibration isolators under the unit.
B. Assemble and install all components furnished loose by manufacturer as recommended by the manufacturer's literature.
C. Complete all refrigerant piping per ASHRAE Standards for refrigerant piping and electrical connections per all local, state and National Electrical codes.
D. (Provide and install valves in water piping upstream and downstream of the Optional Remote Cooler Module water connections to provide means of isolating the cooler for maintenance and to balance the water flow and trim the system.)
E. (Provide soft sound and vibration eliminator connections to the cooler water inlet and outlet as well as electrical connections to the unit.)
F. (Chilled water pump control interlocked through the chilled water flow switch, mounted in the chilled water line, to ensure water flow for proper split-system chiller operation.)
G. (Furnish and install taps for thermometers and pressure gauges in water piping adjacent to inlet and outlet connections of the evaporator.)
H. (Provide and install drain valves with capped hose ends to each cooler shell.)
I. (Install vent cocks to each cooler shell.)

3.02 Work By Temperature Control Contractor

A. Furnish interlock wiring per manufacturer's recommendations and install loose control components furnished by condensing unit manufacturer.

3.03 Work By Electrical Contractor

A. Furnish power wiring to the condensing unit control panel and obtain required code approval.
B. Install duct sensors provided by the condensing unit manufacturer for DX Air Handler applications.
C. Install Enthalpy sensors provided by the condensing unit manufacturer for DX Air Handler applications requiring Enthalpy Control.
D. Furnish inter-connecting control wiring between the condensing unit and the remote evaporator.
E. (Furnish and install approved disconnect switch.)
F. (Furnish and install approved water flow switch.)

END OF SECTION

Specifications subject to change without notice

INSTALLATION CLEARANCE

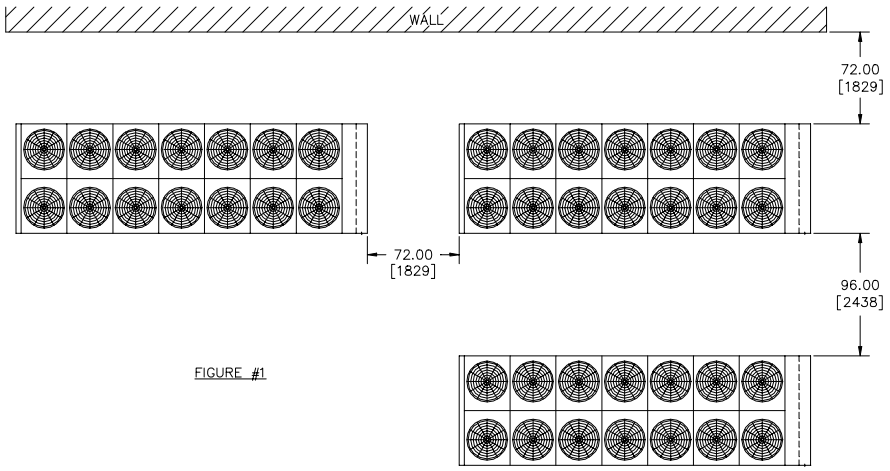


FIGURE #1

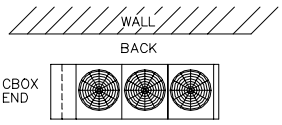


FIGURE #5
ACDRB021S–035S
LEVEL SURFACE – BACK TO WALL

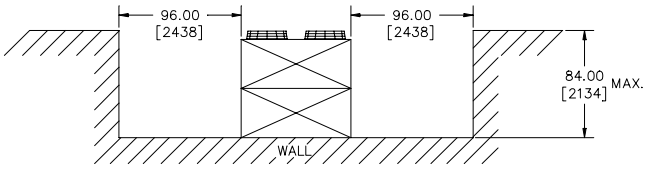


FIGURE #2
SINGLE PIT
(SEE NOTE 3)

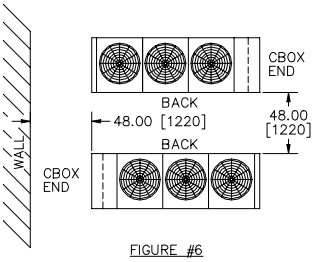


FIGURE #6
ACDRB021S–035S
LEVEL SURFACE – BACK TO WALL

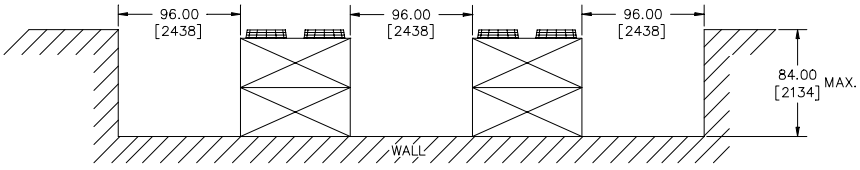


FIGURE #3
DOUBLE PIT
(SEE NOTE 3)

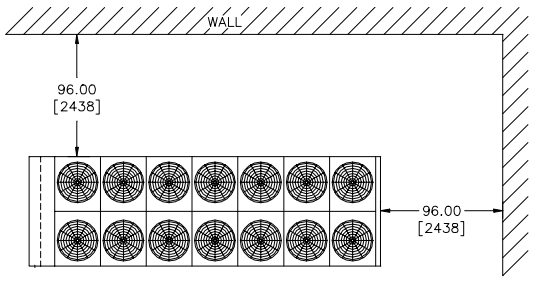


FIGURE #4
CORNER WALL

NOTE:
1) SCALE: 1/2" = 1" (INCHES) – 12.7MM = 25.4MM (MILLIMETERS)
2) ALL DIMENSIONS ARE MINIMAL, UNLESS OTHERWISE NOTED.
3) PIT INSTALLATIONS ARE NOT RECOMMENDED. RE–CIRCULATION OF HOT CONDENSER AIR IN COMBINATION WITH SURFACE AIR TURBULENCE CANNOT BE PREDICTED. HOT AIR RE–CIRCULATION WILL SEVERELY AFFECT UNIT EFFICIENCY (EER) AND CAN CAUSE HIGH PRESSURE TRIPS OR FAN MOTOR TEMPERATURE TRIPS. DUNHAM–BUSH WILL NOT BE REPSONSIBLE FOR DUCTING FANS TO A HIGHER LEVEL TO ALLEVIATE THE ABOVE MENTIONED CONDITIONS.
4) REFERENCE DIMENSIONAL DRAWING 021681A0.

DUNHAM-BUSH®
101 Burgess Road, Harrisonburg, VA 22801
Phone: 540-434-0711 FAX: 540-432-6690
www.dunham-bush.com