DAIKIN

Catalog 625-3

Trailblazer®
Air-Cooled Chillers

Model AMZ-A
10 to 40 Tons (35 to 140 kW)
HFC-410A Refrigerant
60/50 Hz

Manufactured in an ISO 9001 & ISO 14001 certified facility

AHRI CERTIFIED® www.ahridirectory.org
Air-Cooled Water Chilling Packages
AHRI Standards 550/590 and 551/591

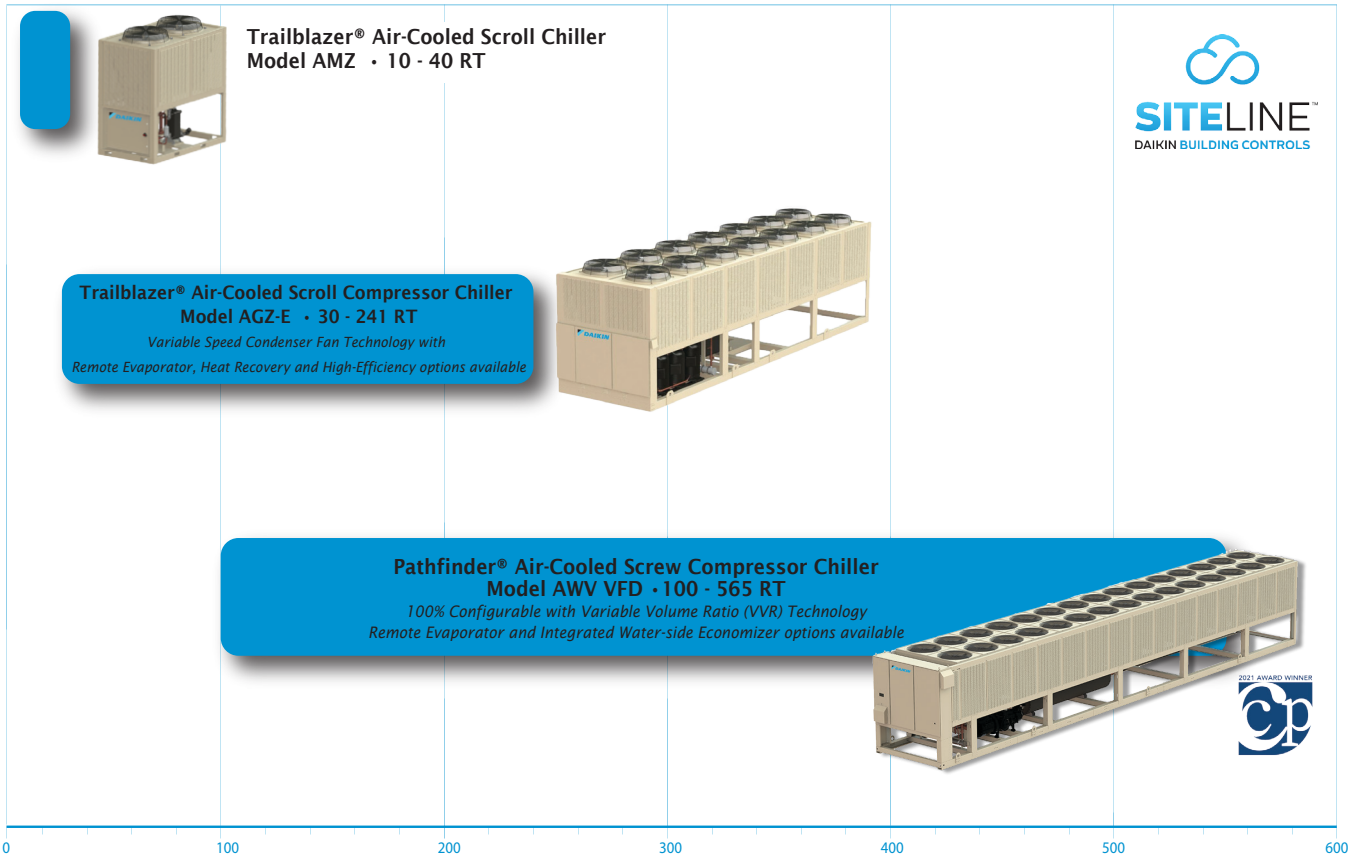
*50 Hz option outside the scope of AHRI ACCL Certification Program.

LONMARK 3.4

C ETL US LISTED Intertek

BACnet International

Air-Cooled Chiller Products

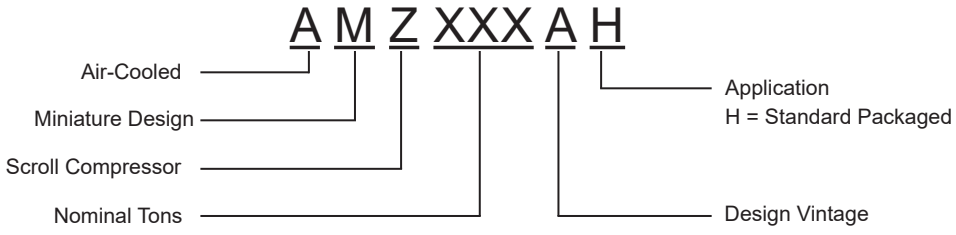


Daikin Trailblazer® AMZ air-cooled chillers are a new generation of scroll chillers, combining advanced and mature chiller technology with environment-friendly HFC-410A.

Within the global market, these chillers offer:

- Easy installation
- Compact physical footprint
- Low sound levels

CHILLER NOMENCLATURE



Features and Benefits

Environment-Friendly Refrigerant

Daikin is committed to protecting the environment by offering this chiller with HFC-410A refrigerant, which has no phase out date or ozone depletion level.

Easy Installation

The compact size of the Daikin AMZ is designed for an easy installation, with no need to connect copper piping or refill refrigerant.

Outstanding Performance

Daikin AMZ air-cooled scroll chillers have reliable scroll compressors that offer high full load and part load efficiency. These features provide reduced maintenance and operating costs over the life of the product.

Compact Size

Daikin AMZ air-cooled chillers have a very compact footprint that minimizes the amount of space needed for the unit.

Reliable Operation

Designed and manufactured in the USA, building on the proven track record of Daikin Applied's air-cooled scroll chiller products, the AMZ has been designed for years of reliable operation.

Low Sound Level

Sound levels can be as important as unit cost and efficiency. The inherently quiet scroll compressors used in AMZ chillers are coupled with precision engineering for competitive sound levels.

Condenser Design

Daikin AMZ air-cooled chillers use all aluminum microchannel condenser coils that reduces the amount of refrigerant charge and optimizes efficiency on the unit. Epoxy coatings are available as an option for coastal applications.

AHRI Certification

Performance on all 60Hz standard packaged models are certified per AHRI standard 550/590.

Compliance with ASHRAE Std. 90.1

ASHRAE Standard 90.1 was developed to help owners and designers make informed choices on building design, systems, and equipment selection. Model AMZ can exceed ASHRAE 90.1 minimum efficiency requirements.

LEED®

For building owners who wish to pursue Leadership in Energy and Environmental Design (LEED®) Green Building Certification, points earned for Optimize Energy Performance (formerly EA Credit 1) are awarded based on overall building efficiency. The efficiency of the AMZ can contribute to the total points earned for this credit. Trailblazer® chillers can also contribute to Enhanced Refrigerant Management (formerly EA Credit 4) qualification which is partially determined by tonnage and refrigerant quantity. Consult with your Daikin Applied sales representative for more information.

Factory Testing

All Daikin Applied air-cooled chillers (50 or 60 hertz) are factory-tested prior to shipment. Operating and safety controls are checked for correct settings and operation. This testing helps reduce field start-up issues and maintain critical construction schedules.

The Control Technology

MicroTech® III Unit Controller

Daikin AMZ series features the MicroTech® III advanced DDC chiller controller, surpassing all other microprocessor-based chiller control systems available today (see Figure 1). This powerful, user-friendly control system provides the flexibility and performance needed for either stand-alone unit operation or usage of the Daikin Open Choices® feature.

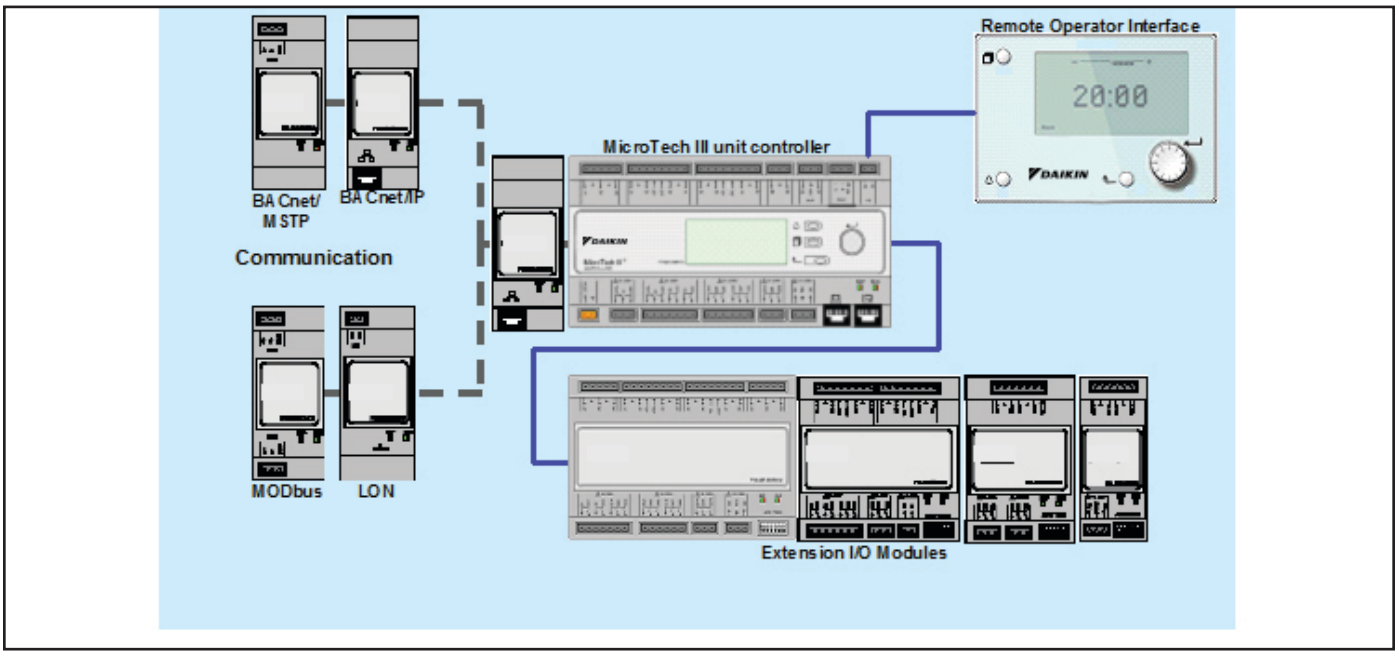
Open Choices™ BAS Flexibility

The exclusive Open Choices™ feature provides seamless integration and comprehensive monitoring, control, and two-way data exchange using industry standard protocols such as LonTalk®, BACnet® or Modbus®. Open Choices™ offers flexibility to use the Building Automation System (BAS) of your choice without an expensive gateway panel. Open Choices® benefits include:

- Easy to integrate into your BAS of choice
- Factory- or field-installed communications module
- Integrated control logic for factory options
- Easy-to-use local user interface
- Comprehensive data exchange

The MicroTech® III controller's design will not only permit the chiller to run more efficiently, but will also simplify troubleshooting if a system failure occurs. Every MicroTech® III controller is programmed and tested prior to shipment to help provide a trouble-free start-up.

Figure 1: MicroTech® III Controller



SITELINE™
DAIKIN BUILDING CONTROLS

SiteLine™ Building Controls

Daikin makes building automation simpler, more effective and easier to scale than any other controls solution on the market today.

Whether you're overseeing a complex HVAC ecosystem of equipment and buildings or monitoring standalone units, SiteLine Building Controls and Service Solutions will help you create comfortable and sustainable environments where tenants work and live.

Daikin's scalable, cloud-based building automation systems (BAS) instantly and easily optimize the performance of any HVAC ecosystem—including other makes and existing building systems. Plus, our real-time analytics provide effortless insight and enable optimization for energy, indoor air quality (IAQ) and sustainability.

Benefits

- Easy installation with out-of-the box functionality for both new and retrofit applications.
- Simple operation that brings insight to system performance and is intuitive to manage.
- Low upfront costs that enable you to work with other equipment systems
- Scalable solutions for both standalone equipment and building systems.
- Advanced security that protects customer data.

Unit Dimensions

Figure 2: Unit Dimensional Drawing

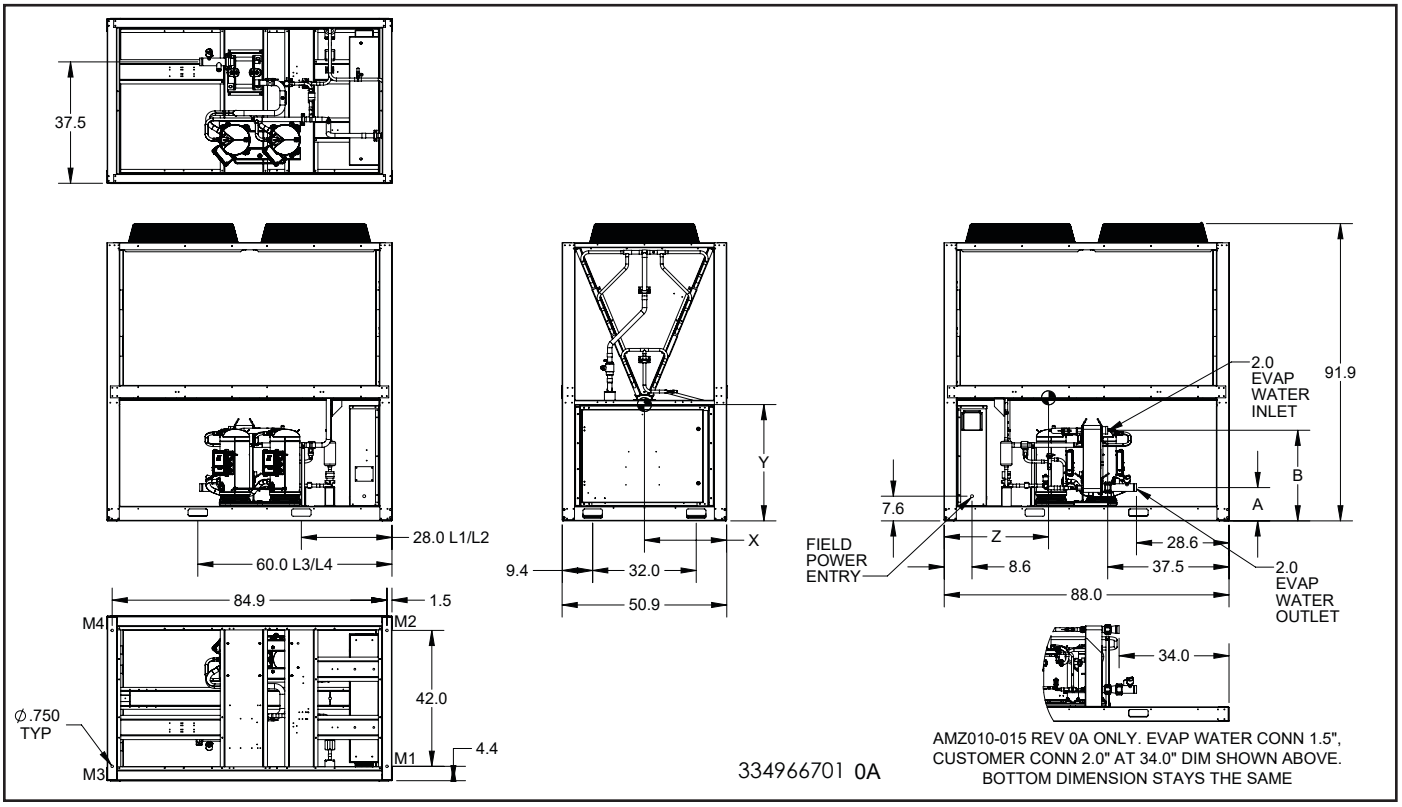


Table 1: Unit Dimensional Information

UNIT MODEL	EVAP. DIMENSIONS, IN (MM)		CG LOCATION, IN (MM)		
	A	B	X	Y	Z
AMZ010	9.9 (251)	28.4 (721)	26.2 (665)	37.1 (942)	35.8 (909)
AMZ015			26.9 (683)	36.8 (935)	35.7 (907)
AMZ020	10.3 (262)	28 (711)	26.4 (671)	37 (940)	35.7 (907)
AMZ025			27 (686)	36.5 (927)	35.9 (912)
AMZ030			27 (686)	36.3 (922)	36 (914)
AMZ035			28.4 (721)	33.9 (861)	34.2 (869)
AMZ040			28.4 (721)	30.8 (782)	35.9 (912)

NOTE:

1. Drawings, dimensional values, and other information may change depending on options or configurations selected. Refer to the as-built submittal drawings provided by a Daikin Applied sales representative for configuration-specific details.
2. Minimum clearances are required for unit operation and service. Refer to the AMZ Installation and Operating Manual for installation requirements.
3. 3.0-inch diameter lifting holes are provided. See lifting instructions in the current version of the installation, operation, and maintenance manual, available at www.DaikinApplied.com.
4. The unit is shipped with a full operating charge of refrigerant.

Electrical Control Center

Operating and equipment protection controls and motor starting components are separately housed in a centrally located, weather resistant control panel with hinged and tool-locked doors. The following components are housed in the panel:

- Power terminal block or optional disconnect switch (through-the-door handle)
- Power connection for single-point standard
- Control, input, and output terminal block
- Control transformer
- Compressor motor inherent thermal and overload protection is standard
- Optional phase voltage monitor with under/over voltage and phase reversal protection
- Fan contactors with short circuit protective devices.
- Optional ground fault protection
- FanTrol™ fan staging head pressure control system

The unit controller basic settings and functionsar outline below:

Basic Operating Mode

- Cooling

Parameter Setting

- Real time setting
- Weekly timing on/off (one on/off per day)
- Cooling water inlet temperature

Parameter Display

- Running status display
- Setted inlet water temperature
- Cooling water inlet temperature

Fault Alarm and Protection

- More than 13 protection and fault alarm functions
- Indoor controller lock

Memory Function

- Backup battery for realtime clock
- Customized parameters preservation after power failure

Other Functions

- Error log inquiry
- Average compressor worn time
- Remote on/off
- Water system two-way valve control

⚠ DANGER

Qualified, licensed electricians must perform wiring. Electrical shock hazard exists that can cause severe injury or death.

⚠ DANGER

LOCKOUT/TAGOUT all power sources prior to starting, pressurizing, de-pressuring, or powering down the Chiller. Failure to follow this warning exactly can result in serious injury or death. Disconnect electrical power before servicing the equipment. More than one disconnect may be required to denergize the unit. Be sure to read and understand the installation, operation, and service instructions within product manual.

Electrical Connections

Wiring within the unit is sized in accordance with the U.S.A. National Electrical Code (NEC). All field wiring must be done in accordance with applicable local and national codes. Field-supplied disconnect switches are required if not factory-supplied with the unit.

Disconnecting means are addressed by Article 440 of the U.S.A. National Electrical Code (NEC), which requires “disconnecting means capable of disconnecting air conditioning and refrigerating equipment including motor-compressors, and controllers from the circuit feeder.” Select and locate the disconnect switch per the NEC guidelines.

Control panels are rated for the amount of current that can be passed through it and still contain the damage within the enclosure; this value is known as the short circuit panel rating. This option may be required to meet electrical code. Consult with a licensed electrical engineer to determine if your electrical system will require this rating.

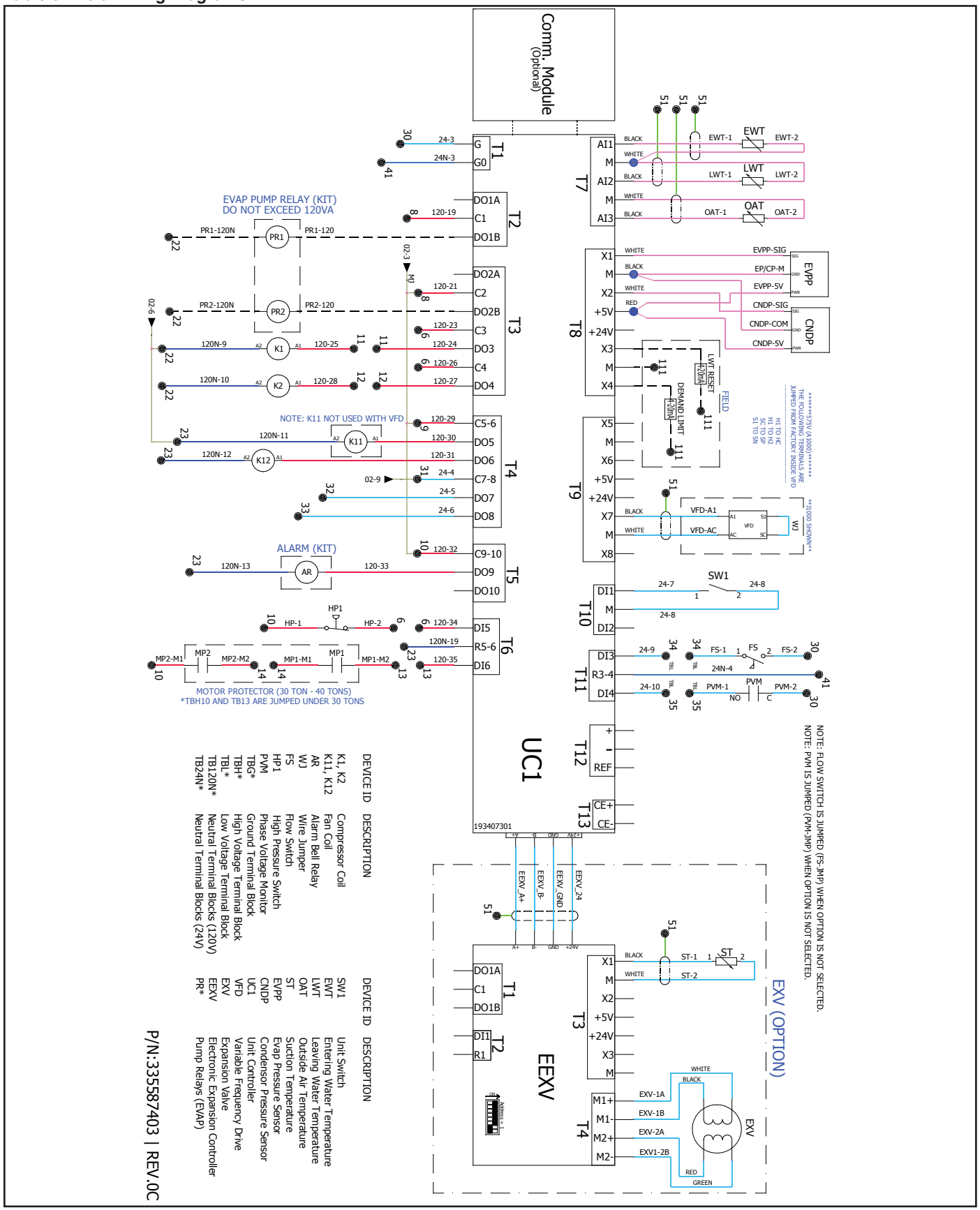
Table 2: Standard Short Circuit Panel Rating

Panel Type	208V / 230V	380V / 400V / 460V	575V
Standard	5kA	5kA	5kA

Electrical Data Notes

1. Power wiring connections to the chiller may be done with either copper or aluminum wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing shown in the Electrical Data tables starting on page 8. All field wire lug range values given in the Electrical Data tables apply to 75°C rated wire per NEC.
2. The control transformer is furnished and no separate 115V power is required. The control transformer is in circuit #1 with control power wired from there to circuit #2. Terminals are provided in a unit control panel for optional field hookup of the control circuit to a separate fused 115-volt power supply in lieu of the standard factory installed control transformer. Wire sizing amps is 15 amps if a separate 115V power supply is used for the control circuit.
3. Must be electrically grounded according to national and local electrical codes.

Table 3: Field Wiring Diagrams



DEVICE ID	DESCRIPTION
K1, K2	Compressor Coil
K11, K12	Fan Coil
AR	Alarm Bell Relay
WJ	Wire Jumper
FS	Flow Switch
HP1	High Pressure Switch
PVM	Phase Voltage Monitor
TBG*	Ground Terminal Block
TBH*	High Voltage Terminal Block
TBL*	Low Voltage Terminal Block
TB120N*	Neutral Terminal Blocks (120V)
TB24N*	Neutral Terminal Blocks (24V)

DEVICE ID	DESCRIPTION
SW1	Unit Switch
EWT	Entering Water Temperature
LWT	Leaving Water Temperature
OAT	Outside Air Temperature
ST	Suction Temperature
EVPP	Evap Pressure Sensor
CNDP	Condensor Pressure Sensor
UC1	Unit Controller
VFD	Variable Frequency Drive
EXV	Expansion Valve
EEXV	Electronic Expansion Controller
PR*	Pump Relays (EVAP)

Unit Options

Epoxy Fin Coating

A flexible dip and baked epoxy protective coating with 10,000+ hour salt spray resistance (ASTM B117-90) is available on the microchannel condenser coils. Provides protection against adverse environments such as salt air as found on seacoast applications and many chemical environments. Consult the local Daikin Applied sales office for complete specification and chemical resistance chart.

Protective Base Guards

Optional factory installed wire mesh lower base guards provide protection for ground level installations.

Louvers (Wind and Hail Protection)

Coil-Only Louvers

Wind may reduce the ability of the chiller to start, especially when combined with low ambient temperatures. Wind may raise the minimum ambient temperature in which the chiller can operate.

Hail can also have a damaging effect on the performance of an air-cooled condenser. While the louver design inherently gives some hail protection, it is important to keep the outer finned area from becoming flattened against the coil, thus allowing the air to flow freely.

Coil louvers are available as a factory-installed (or as a field-installed kit) option, and allow the chiller to operate effectively down to the ambient temperature for which it was designed.

Figure 3: Coil-Only Louvers

Coil and Base Louvers

The coil louvers can also be supplied with base louvers, which when combined, enclose the entire side and end of the unit. The base louvers are primarily for limiting access to only authorized personnel as well as enhancing unit appearance. This option is available as a field-installed kit.

Vibration Isolators

Spring or rubber-in-shear vibration isolators are available for field installation under the unit base frame on sound sensitive applications.

Sound Attenuation

The model AMZ chiller includes low noise construction as standard. Should additional sound attenuation be required, there are factory installed sound reduction options available.

Evaporator Inlet Strainer

Evaporator inlet water strainer kit consisting of Y-type strainer with 304 stainless steel perforated basket, blowdown valve, matching pipe extension with two Schrader fittings and two Victaulic couplings; all for field or factory installation.

Evaporator Insulation

Double insulation thickness on evaporator and suction piping is available and recommended for high humidity areas or low fluid temperatures.

Electronic Expansion Valve

An electronic expansion valve is optional and allows for tighter temperature control; a thermal expansion valve is standard.

Controls Options

Flow Switch

A thermal dispersion flow switch is factory-supplied as an installed component or a ship-with item for **field installation** in the chilled water piping to protect against evaporator freeze-up under low, or no flow conditions. Terminals are provided in the unit control center for field connection of the water flow detection switch. A flow detection device of some type is required for the chiller, see page 11 for details.

BAS Modules

A factory-installed communication module allows communications with BAS standard protocols such as BACnet® w/ MSTP, BACnet® w/ Ethernet, LonMark® or Modbus®. The module can also be retrofitted after shipment.

Remote User Interface

A remote control panel that mimics operation of the controller located on the unit. It provides HMI (Human Machine Interface) within a building, without going outdoors to the unit. The remote interface is shipped with the unit for field installation. The remote panel is powered from the unit and no additional power supply is required.

Low Ambient Operation

Factory mounting of a variable frequency drive (VFD) for fan motor allow chillers to start down to operate as low as -10°F (-23.3°C).

SiteLine™ Building Controls

SiteLine from Daikin Applied is a secure, scalable, cloud-based controls solution that can optimize the performance of equipment and building systems. SiteLine provides real-time analytics for energy management, indoor air quality (IAQ) and sustainability. BAS installation is easy with out-of-the box functionality for both new and retrofit applications.

Electrical Options

Power Connections

The standard power connection is single point. See page 7 for ratings of standard and optional electrical panels.

Single-Point Power with Disconnect Switch

Single power supply to a factory-mounted, molded case, disconnect switch. The circuit is factory-wired from the disconnect switch.

Single-Point Connection to Power Block

Single -point connection to a power block.

Phase and Voltage Protection

Phase loss with under/over voltage protection and multiple LED indication of fault type is available as a factory-installed option to guard against compressor motor burnout.

Unit Placement

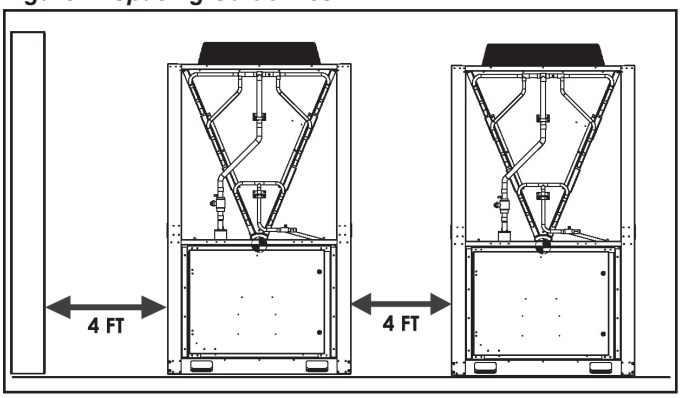
For roof-mounted applications, the unit must be installed on a steel channel or I-beam frame to support the unit above the roof. Vibration isolators are recommended for all roof-mounted installations or wherever vibration transmission is a consideration. Isolator loads and kit numbers can be found in the current installation and operation manual at www.DaikinApplied.com.

For ground level applications, the unit must be installed on a substantial base that will not settle. Daikin Applied recommends a one-piece concrete slab with footings extended below the frost line, and the installation engineer should determine its necessity. The foundation must be level within 13 mm (1/2 inch) over its length and width and strong enough to support the unit's operating weight as listed in the as-built unit submittal documents. The addition of neoprene waffle pads (supplied by customer) under the frame allows water to drain from inside the frame, which can act as a dam.

On ground level applications, protection against vandalism is recommended; either by the optional factory-installed lower wire mesh guards or louvers, or by a field installed screening fence. Note that the fence must allow free flow of air to the condenser coil for proper unit operation.

Clearance Requirements

Figure 4: Spacing Guidelines



NOTE: 1. There must be no obstruction above the fan deck to interfere with fan discharge.

2. Electrical conduit and field installed electrical devices must not block service access to any chiller components.

3. Such factors as prevailing winds, additional equipment within the space, design outdoor air temperature, and numerous other factors may require more clearance than what is shown.

Sufficient clearance must be maintained between the unit and adjacent walls or other units to allow the required unit air flow to reach the coils. Failure to do so will result in a capacity reduction and an increase in power consumption. No obstructions are allowed above the unit at any height. Clearances for each scenario apply only to chillers with no other restrictions and do not apply when multiple restrictions are combined.

The current version of the AMZ installation, operation and maintenance manual for packaged units gives the minimum clearance for different types of installations and also capacity and power adjustments if closer spacing is used.

Chilled Water Systems

Water Piping

Start-up procedures should confirm that the chilled water piping system had been properly flushed out before being connected to the chiller vessel.

⚠ CAUTION

To prevent damage to the evaporator and potential chiller failure, a supply strainer is required in the inlet water piping which connects to this evaporator. This strainer must be installed prior to operation of the chilled liquid pumps.

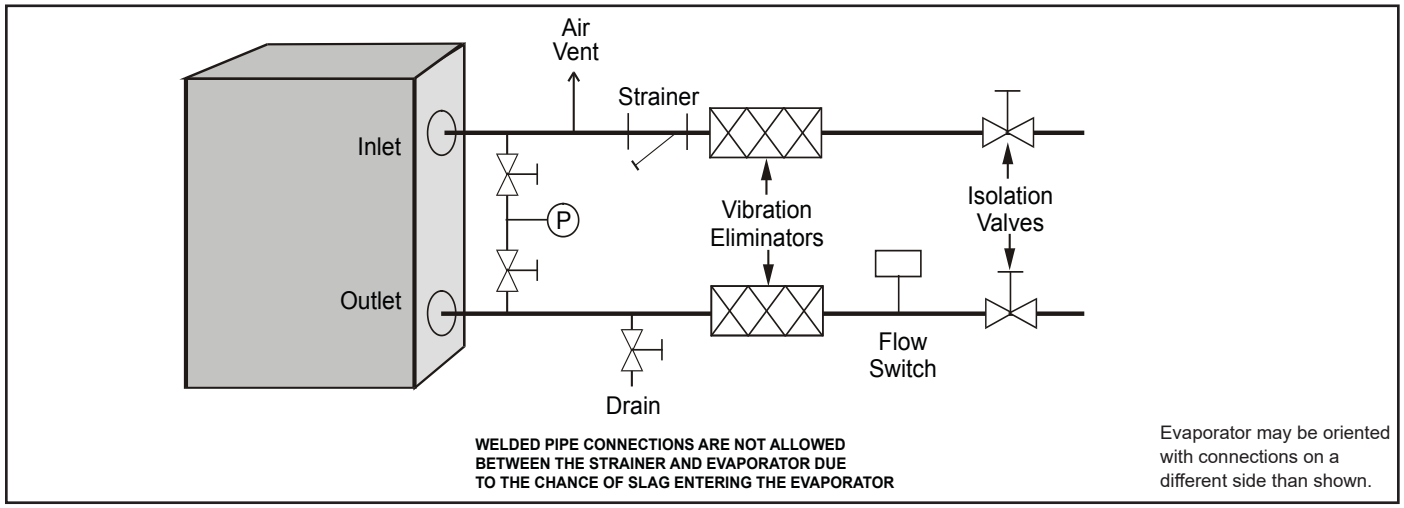
Field installed water piping to the chiller **must** include:

- A cleanable strainer installed at the water inlet to the evaporator to remove debris and impurities before they reach the evaporator, causing damage. See the Inlet Strainer Guidelines on page 12 and the current version of the product installation, operation and maintenance manual on www.DaikinApplied.com for additional details.
- A water flow switch must be installed in the horizontal piping of the supply (evaporator outlet) water line to avoid evaporator freeze-up under low or no flow conditions. A flow switch proves that there is adequate water flow to the evaporator before the unit can start or to shut down the unit if water flow is interrupted. The flow switch is supplied by the factory as an installed component or a field-installed kit shipped along with the unit.
- Piping for units with brazed-plate evaporators must have a drain and vent connection provided in the bottom of the lower connection pipe and to the top of the upper connection pipe respectively, see Figure 5. These evaporators do not have drain or vent connections due to their construction. Purge air from the water system before unit start-up to provide adequate flow through the evaporator with an air vent located at high point of piping.
- Adequate piping support, independent from the unit, to eliminate weight/strain on the fittings and connections.

It is **recommended** that the field installed water piping to the chiller include:

- Thermometers at inlet/outlet connections of evaporator.
- Water pressure gauge connection taps and gauges at the inlet and outlet connections of the evaporator for measuring water pressure drop.
- An expansion tank or regulating valve to maintain adequate water pressure
- Vibration eliminators in both the supply and return water lines to reduce transmissions to the building.
- Regular water analysis and chemical water treatment for the evaporator loop is recommended immediately at equipment start-up.

Figure 5: Typical Chilled Water Piping



Inlet Strainer Guidelines

An inlet water strainer kit must be installed in the chilled water piping before the evaporator inlet. Several paths are available to meet this requirement:

1. A factory installed option.
2. A field-installed kit shipped-loose with the unit consisting:
   - Y-type area strainer with 304 stainless steel perforated basket, Victaulic pipe connections and strainer cap, a strainer with perforations no larger than 0.0625" diameter.
   - Extension pipe with two Schrader fittings that can be used for a pressure gauge and flow switch. The pipe provides sufficient clearance from the evaporator for strainer basket removal.
   - ½-inch blowdown valve
   - Two grooved clamps

   Connection sizes are listed on installation specific drawings available from a Daikin Applied sales representative.
3. A field-supplied strainer that meets specification and installation requirements of the current product installation, operation and maintenance manual on www.DaikinApplied.com.

Water Volume

All chilled water systems need adequate time to recognize a load change to avoid short cycling of the compressors or loss of control. The potential for short cycling usually exists when the building load falls below the minimum chiller plant capacity or on close-coupled systems with very small water volumes.

Some of the things the designer should consider when looking at water volume are the minimum cooling load, the minimum chiller plant capacity during the low load period and the desired cycle time for the compressors.

Assuming that there are no sudden load changes and that the chiller plant has reasonable turndown, a rule of thumb of "gallons of water volume equal to two to three times the chilled water gpm flow rate" is often used.

A properly designed storage tank should be added if the system components do not provide sufficient water volume.

Variable Fluid Flow Rates and Tube Velocities

Many chiller system control and energy optimization strategies require significant changes in evaporator water flow rates.

Both excessively high and excessively low fluid flow rates should be avoided. Excessively high fluid flow rates and correspondingly high tube velocities will result in high fluid pressure drops, high pumping power, and potentially tube erosion or damage. Excessively low fluid flow rates and correspondingly low velocities should also be avoided as they will result in poor heat transfer, high compressor power, sedimentation and tube fouling.

Reducing Evaporator Fluid Flow

Several chiller plant control practices — including variable primary flow systems — advocate reducing the evaporator fluid flow rate as the chiller capacity is reduced. This practice can significantly reduce the evaporator pumping power while having little effect on chiller energy consumption.

If it is decided to vary the evaporator water flow rate, the rate of change should not exceed the minimum or maximum velocity limits. Additionally, the rate of change should not exceed 10% of the design flow per minute.

Chilled Water Pump

It is important that the chilled water pumps be wired to, and controlled by, the chiller controller. The controller has the capability to selectively send the signal to a pump relay (by others) to start pump A or B or automatically alternate

pump selection and also has standby operation capability. The controller will energize the pump whenever at least one circuit on the chiller is enabled to run, whether there is a call for cooling or not. This helps ensure proper unit start-up sequence. The pump will also be turned on when the water temperature goes below the Freeze Setpoint for longer than a specified time to help prevent evaporator freeze-up.

⚠ CAUTION

Adding glycol or draining the system is the recommended method of freeze protection. If the chiller does not have the ability to control the pumps and the water system is not drained in temperatures below freezing, catastrophic evaporator failure may occur.

Failure to allow pump control by the chiller may cause the following problems:

1. If any device other than the chiller attempts to start the chiller without first starting the pump, the chiller will lock out on the No Flow alarm and require manual reset.
2. If the evaporator water temperature drops below the "Freeze setpoint" the chiller will attempt to start the water pumps to avoid evaporator freeze. If the chiller does not have the ability to start the pumps, the chiller will alarm due to lack of water flow.
3. If the chiller does not have the ability to control the pumps and the water system is not to be drained in temperatures below freezing, the chiller may be subject to catastrophic evaporator failure due to freezing. The freeze rating of the evaporator is based on the electric heater plate and pump operation. The electric heater plate itself may not be able to properly protect the evaporator from freezing without circulation of water.

Evaporator Freeze Protection

Evaporator freeze-up can be a concern in the application of air-cooled water chillers in areas experiencing below freezing temperatures. To protect against freeze-up, insulation and an electric immersion heater are furnished with the evaporator. This helps protect the evaporator down to -20°F (-29°C) ambient air temperature. Although the evaporator is equipped with freeze protection, it does not protect water piping external to the unit or the evaporator itself if there is a power failure or heater burnout, or if the chiller is unable to control the chilled water pumps. Use one of the following recommendations for additional protection:

- If the unit will not be operated during the winter, drain evaporator and chilled water piping and flush with glycol. Drain and vent connections are provided on the evaporator for this purpose.
- Add a year-round glycol solution to the chilled water system to provide freeze protection. Freeze point should be approximately 10°F(5.6°C) below minimum design ambient temperature or 10°F below the lowest design leaving water temperature, whichever is lower. The use of glycol anti-freeze is generally considered the safest protection against freeze-up, however, it will reduce the performance of the unit, depending the concentration. Take this into consideration during initial system design and selection. On glycol applications, a minimum fluid concentration should be based on Burst Protection limits.
- The field addition of thermostatically controlled heat tracing and insulation to exposed piping. Factory insulation will have to be removed and replaced after installation of the tracing. (Dependent on power availability)
- Continuous circulation of water through the chilled water piping and evaporator. (Dependent on power availability).
- The evaporator immersion heater is factory wired to the 115-volt circuit in the control box. This power can be supplied from a separate source, or it can be supplied from the control circuit. Operation of the heater cable is automatic through the fluid sensing thermostat that energizes the evaporator heater cable for protection against freeze-up. Unless the evaporator is drained in the winter, the disconnect switch to the evaporator heater must be closed. Conversely, do not apply heat to the evaporator if it is drained.
- An expansion water tank must be installed to accommodate water volume variations due to thermal expansion and contraction.
- A bypass must be installed for the water circuit. The water system must be fully cleaned before water infusion and system startup.
- Replace the attached water filter after cleaning the system and pilot run.
- It is recommended that customers check the water system twice a month.

Ice Mode

Ice making chillers will run very cold fluid during off hours when energy is least expensive to build a tank of ice. The stored ice melts during peak electrical hours to provide as much cooling as possible but there is often a window on warmer days where the chiller will also run to meet the cooling load.

Optional double evaporator insulation is recommended for ice mode operation. The standard controller software will require "ice" setpoint changes and a digital signal into the controller is required to change to the ice mode and back to standard cooling. In ice building mode, the unit will operate at full load until the shutoff temperature setpoint is reached.

Optimizing Efficiency

The optimum plant design must take into account all of the interactions between chillers and pumps. The Daikin Energy Analyzer™ II program is an excellent tool to investigate the entire system efficiency, quickly and accurately. It is especially good at comparing different system types and operating parameters. Contact your local Daikin Applied sales office for assistance on your particular application.

Figure 6: Piping Diagram

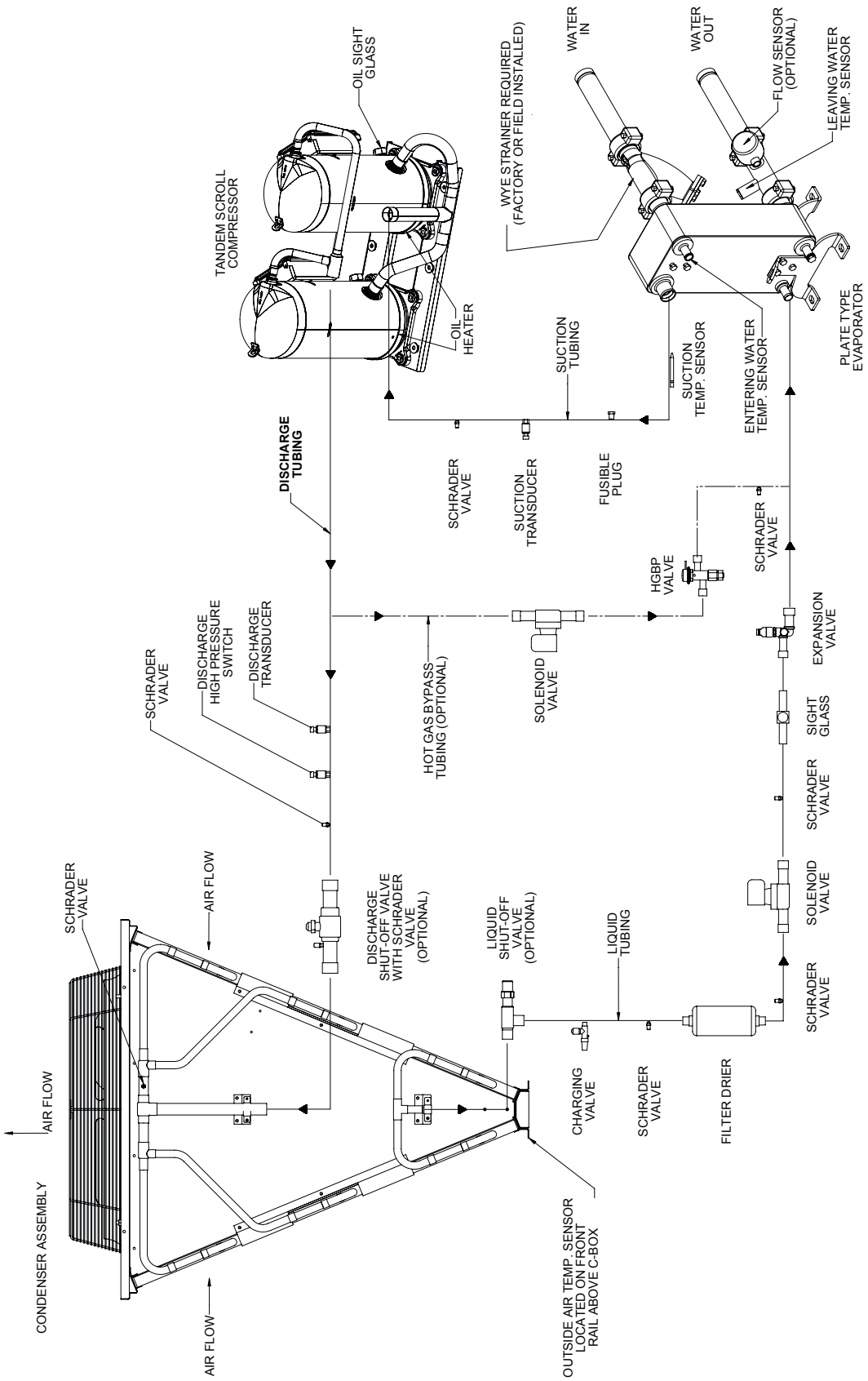


Table 4: 60 Hz Sound Power without Sound Insulation

60Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	88	88	85	84	79	75	70	65	83	80
AMZ015A	89	88	85	84	80	75	70	65	85	82
AMZ020A	89	88	87	85	81	76	71	66	86	83
AMZ025A	90	90	88	86	82	76	71	66	87	84
AMZ030A	91	90	91	86	83	78	73	68	88	85
AMZ035A	92	92	91	86	84	78	73	68	89	87
AMZ040A	94	94	94	90	90	83	77	71	90	87

Table 5: 60 Hz Sound Power with Sound Insulation

60Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	85	85	82	81	76	72	67	62	80	77
AMZ015A	86	85	82	81	77	72	67	62	81	78
AMZ020A	86	85	84	82	78	73	68	63	81	78
AMZ025A	87	87	85	83	79	73	68	63	82	79
AMZ030A	88	87	88	83	80	75	70	65	83	80
AMZ035A	89	89	88	83	81	75	70	65	84	81
AMZ040A	90	90	90	86	85	78	72	68	85	82

Table 6: 60 Hz Sound Pressure without Sound Insulation

60Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	61	61	58	57	52	48	43	38	56	53
AMZ015A	62	61	58	57	53	48	43	38	58	55
AMZ020A	62	61	60	58	54	49	44	39	59	56
AMZ025A	63	63	61	59	55	49	44	39	60	57
AMZ030A	64	63	64	59	56	51	46	41	61	58
AMZ035A	65	65	64	59	57	51	46	41	62	60
AMZ040A	67	67	67	63	63	56	50	44	63	60

Table 7: 60 Hz Sound Pressure with Sound Insulation

60Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	58	58	55	54	49	45	40	35	53	50
AMZ015A	59	58	55	54	50	45	40	35	54	51
AMZ020A	59	58	57	55	51	46	41	36	54	51
AMZ025A	60	60	58	56	52	46	41	36	55	52
AMZ030A	61	60	61	56	53	48	43	38	56	53
AMZ035A	62	62	61	56	54	48	43	38	57	54
AMZ040A	63	63	63	59	58	51	45	41	58	55

Table 8: 50 Hz Sound Power without Sound Insulation

50Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	85	85	82	81	76	72	66	62	80	77
AMZ015A	86	85	82	81	77	72	67	62	82	79
AMZ020A	86	85	83	81	77	72	67	62	82	79
AMZ025A	87	86	85	83	79	73	68	63	84	81
AMZ030A	87	87	87	83	80	75	70	65	85	82
AMZ035A	89	88	88	83	81	75	70	65	86	84
AMZ040A	91	91	91	87	87	80	75	68	87	84

Table 9: 50 Hz Sound Power with Sound Insulation

50Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	82	82	79	78	73	69	63	59	77	74
AMZ015A	83	82	79	78	74	69	64	59	78	75
AMZ020A	83	82	80	78	74	69	64	59	78	75
AMZ025A	84	83	82	80	76	70	65	60	79	76
AMZ030A	84	84	84	80	77	72	67	62	79	76
AMZ035A	86	85	85	80	78	72	67	62	81	78
AMZ040A	88	88	88	84	84	77	72	65	84	81

Table 10: 50 Hz Sound Pressure without Sound Insulation

50Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	58	58	55	54	49	45	39	35	53	50
AMZ015A	59	58	55	54	50	45	40	35	55	52
AMZ020A	59	58	56	54	50	45	40	35	55	52
AMZ025A	60	59	58	56	52	46	41	36	57	54
AMZ030A	60	60	60	56	53	48	43	38	58	55
AMZ035A	62	61	61	56	54	48	43	38	59	57
AMZ040A	64	64	64	60	60	53	48	41	60	57

Table 11: 50 Hz Sound Power with Sound Insulation

50Hz	Non "A-Weighted"								"A-Weighted"	
Model	Octave Band & Center Frequency								Overall A-Weighted	50% Load A-Wtd
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
AMZ010A	55	55	52	51	46	42	36	32	50	47
AMZ015A	56	55	52	51	47	42	37	32	51	48
AMZ020A	56	55	53	51	47	42	37	32	51	48
AMZ025A	57	56	55	53	49	43	38	33	52	49
AMZ030A	57	57	57	53	50	45	40	35	52	49
AMZ035A	59	58	58	53	51	45	40	35	53	50
AMZ040A	61	61	61	57	57	50	45	38	57	54

Figure 7: Pressure Drop Curves - Unit Evaporator (Reference Table 12 below)

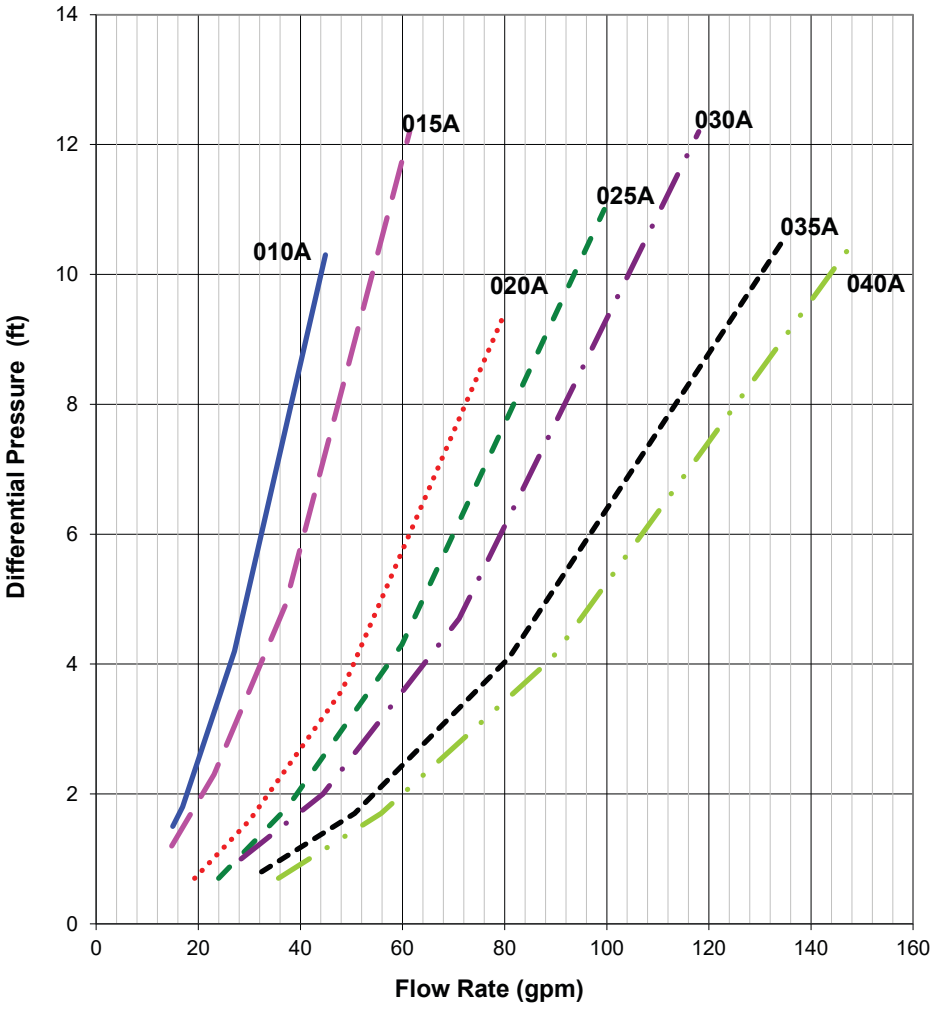


Table 12: Pressure Drop Data - Unit Evaporator

Model	Part Load Flow System Only Minimum Flow Rate[2]				Full Load Flow System Only Minimum Flow Rate[1]				Fixed and Variable Flow Systems							
									Nominal Flow Rate				Maximum Flow Rate			
	IP		SI		IP		SI		IP		SI		IP		SI	
	GPM	DP ft.	lps	DP kpa	GPM	DP ft.	lps	DP kpa	GPM	DP ft.	lps	DP kpa	GPM	DP ft.	lps	DP kpa
010A	15.0	1.5	0.9	4.4	16.9	1.8	1.1	5.4	27.1	4.2	1.7	12.5	44.9	10.3	2.8	30.7
015A	14.8	1.2	0.9	3.7	23.1	2.3	1.5	6.9	37.0	4.9	2.3	14.8	61.4	12.2	3.9	36.5
020A	19.3	0.7	1.2	2.1	30.1	1.6	1.9	4.7	48.2	3.6	3.0	10.9	80.0	9.4	5.0	28.0
025A	24.0	0.7	1.5	2.1	37.5	1.8	2.4	5.4	59.9	4.3	3.8	13.0	99.5	11.0	6.3	33.0
030A	28.4	1.0	1.8	2.9	44.4	2.0	2.8	6.0	71.1	4.7	4.5	14.0	118.0	12.2	7.4	36.4
035A	32.4	0.8	2.0	2.3	50.6	1.7	3.2	5.2	80.9	4.1	5.1	12.3	134.3	10.5	8.5	31.4
040A	35.7	0.7	2.3	2.2	55.8	1.7	3.5	5.2	89.4	4.1	5.6	12.3	148.3	10.5	9.4	31.4

NOTE: 1. Full load flow minimum is the minimum allowable flow at full load conditions, and/or for a constant flow system.

2. Part load flow minimum is the minimum allowable flow for a partially loaded unit, which is only applicable in a variable flow system. Flow may only be reduced proportionally to load, i.e. a flow reduction of 25% from the design flow rate is only alloable if the chiller load is reduced by 25%.

3. Pressure drop data shown for 60 Hz models only

Table 13: Physical Data, 60 Hz models

Data	AMZ010A	AMZ015A	AMZ020A	AMZ025A	AMZ030A	AMZ035A	AMZ040A
BASIC DATA							
Unit Operating Charge lbs	18	18	18	29	29	29	29
Unit Dimensions L x W x H, in.	88.0 x 50.9 x 91.9	88.0 x 50.9 x 91.9	88.0 x 50.9 x 91.9	88.0 x 50.9 x 91.9	88.0 x 50.9 x 91.9	88.0 x 50.9 x 91.9	88.0 x 50.9 x 91.9
COMPRESSORS, SCROLL, HERMETIC							
Nominal HP	5 / 5	7.5 / 7.5	10.0 / 10.0	13.0 / 13.0	15.0 / 15.0	15.0 /20.0	20.0 / 20.0
Oil charge per Compressor , oz (g)	56 (1588)	85 (2410)	85 (2410)	110 (3119)	110 (3119)	110 (3119) / 152 (4495)	152 (4495)
Staging, 2 Stages (If Circuit is in Lead)	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100
CONDENSERS, HIGH EFFICIENCY MICROCHANNEL TYPE							
Coil Inlet Face Area, sq. ft. (sq. m.)	26.5 (2.46)	26.5 (2.46)	26.5 (2.46)	53 (4.92)	53 (4.92)	53 (4.92)	53 (4.92)
Rows Deep/Fins Per Inch	1 / 21	1 / 21	1 / 21	1 / 21	1 / 21	1 / 21	1 / 21
CONDENSER FANS, DIRECT DRIVE PROPELLER TYPE							
# of Fans per Circuit - Fan Diameter in (mm)	2 - 30 (762)	2 - 30 (762)	2 - 30 (762)	2 - 30 (762)	2 - 30 (762)	2 - 30 (762)	2 - 30 (762)
Fan Motor, hp (kW)	1.5 (1.1)	1.5 (1.1)	1.5 (1.1)	1.5 (1.1)	1.5 (1.1)	2.0 (1.5)	2.0 (1.5)
Fan & Motor RPM	1140	1140	1140	1140	1140	1140	1140
Fan Tip Speed, fpm (m/s)	8950 (45)	8950 (45)	8950 (45)	8950 (45)	8950 (45)	8950 (45)	8950 (45)
Airflow, cfm (l/s)	17,000 (8023)	17,000 (8023)	17,000 (8023)	20,200 (9533)	20,200 (9533)	24,000 (11327)	24,000 (11327)
EVAPORATOR, DIRECT EXPANSION PLATE TO PLATE							
Evaporator, Model (1 Evaporator / 1 Circuits)	F85x70	F85x90	F200x48	F200x56	F200x64	F200x76	F200x88
Dry Weight lbs (kg)	27.6 (12.5)	34.2 (15.5)	65.8 (29.9)	72.7 (33.0)	80.1 (36.3)	91.3 (41.4)	102.3 (46.4)
Water Volume, gallons (liters)	0.8 (3.0)	1.1 (4.2)	1.4 (5.4)	1.7 (6.5)	1.9 (7.4)	2.4 (8.9)	2.7 (10.4)
Victaulic inlet/outlet conn. in. (mm)	1.5 (38.1)	1.5 (38.1)	2 (50.8)	2 (50.8)	2 (50.8)	2 (50.8)	2 (50.8)
Max. Water Pressure, psi (kPa)	650 (4482)	650 (4482)	650 (4482)	650 (4482)	650 (4482)	650 (4482)	650 (4482)
Max. Refrigerant Press., psi (kPa)	650 (4482)	650 (4482)	650 (4482)	650 (4482)	650 (4482)	650 (4482)	650 (4482)

AIR-COOLED SCROLL CHILLERS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes design, performance criteria, refrigerants, controls, and installation requirements for air-cooled scroll compressor chillers.

1.02 REFERENCES

A. Comply with applicable Standards/Codes of AHRI 550/590, ANSI/ASHRAE 15, ETL, cETL, NEC, and OSHA as adopted by the State.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with the specifications.

B. Submittals shall include the following:

1. Dimensioned plan and elevation view drawings, required clearances, and location of all field connections.
2. Single-line schematic drawing of the power field hookup requirements, indicating all items that are furnished.
3. Schematic diagram of control system indicating points for field interface/connection.
4. Diagram shall fully delineate field and factory wiring.
5. Certification of factory-run test of chiller unit signed by company officer.
6. Installation manuals.

1.04 QUALITY ASSURANCE

A. Qualifications: Equipment manufacturer must specialize in the manufacture of the products specified and have five years experience with the type of equipment and refrigerant offered.

B. Regulatory Requirements: Comply with the codes and standards specified.

C. Chiller manufacturer's plant must be ISO registered.

1.05 DELIVERY AND HANDLING

A. Packaged Chillers Only: Chiller shall be delivered to the job site completely assembled and charged with refrigerant and oil by the manufacturer.

B. Comply with the manufacturer's instructions for rigging and handling equipment.

1.06 WARRANTY

A. The refrigeration equipment manufacturer's guarantee shall be for a period of one year from date of equipment start-up but not more than 18 months from shipment. The guarantee shall provide for repair or replacement due to failure by material and workmanship that prove defective within the above period, excluding refrigerant.

1.07 MAINTENANCE

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

PART 2--PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Daikin Applied

B. (Approved Equal)

2.02 UNIT DESCRIPTION

A. Provide and install as shown on the plans factory-assembled, factory-charged, air-cooled scroll compressor packaged chillers in the quantity specified. Each chiller shall consist of two hermetic scroll compressors in total (attached in tandem), brazed plate evaporator, air-cooled microchannel condenser section, microprocessor-based control system and all components necessary for controlled unit operation.

B. Each chiller shall be factory run-tested to verify operation.

2.03 DESIGN REQUIREMENTS

A. General:[Packaged Chillers: Provide a complete scroll compressor packaged chiller as specified herein and as shown on the drawings. The unit shall be in accordance with the standards referenced in section 1.02 and any local codes in effect.]

B. Performance: Refer to the schedule of performance on the drawings. The chiller shall be capable of stable operation to a minimum percentage of full load (without hot gas bypass) of 50%. Performance shall be in accordance with AHRI Standard 550/590.

C. Flow Range: The chiller shall have the ability to support variable flow range down to 40% of nominal design (based on AHRI conditions).

D. Operating Range: The chiller shall have the ability to control leaving chilled fluid temperature from 15°F to 65°F.

E. Acoustics: Sound pressure levels for the unit shall not exceed the following specified levels. The manufacturer shall provide the necessary sound treatment to meet these levels if required. Sound data shall be provided with the quotation. Test shall be in accordance with AHRI Standard 370.

Sound Pressure (at 30 feet)											
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	**Overall dBA**	75% Load dBA	50% Load dBA	25% Load dBA

Sound Power											
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	**Overall dBA**	75% Load dBA	50% Load dBA	25% Load dBA

2.04 CHILLER COMPONENTS

A. Compressors

1. The compressors shall be sealed hermetic, scroll type with crankcase oil heater and suction strainer. The compressor motor shall be refrigerant gas cooled, high torque, hermetic induction type, two-pole, with inherent thermal protection on all three phases and shall be mounted on RIS vibration isolator pads. The compressors shall be equipped with an internal module providing compressor protection and communication capability.

B. Evaporators

1. The evaporator shall be a compact, high efficiency, single circuit, brazed plate-to-plate type heat exchanger consisting of parallel stainless steel plates.
2. The evaporator shall be protected with an external, electric resistance heater plate. The evaporator shall be insulated with 3/4" (19 mm) thick CFC and HCFC-free closed-cell flexible elastomeric foam insulation material with 100% adhesive coverage. The insulation shall have an additional outer protective layer of 3mm thick PE embossed film to provide superior damage resistance. Insulation without the protective outer film shall not be acceptable. UV resistance level shall meet or exceed a rating of 'Good' in accordance with the UNI ISO 4892 - 2/94 testing method. This combination of a heater plate and insulation shall provide freeze protection down to -20°F (-29°C) ambient air temperature.
3. The water-side working pressure shall be a minimum of 650 psig (4482 kPa). Vent and drain connections shall be provided in the inlet and outlet chilled water piping by the installing contractor. Evaporators shall be designed and constructed according to, and listed by, Underwriters Laboratories (UL).

[OPTIONAL] The evaporator shall be protected with an external, electric resistance heater plate. The evaporator shall be insulated with 1.5" (38mm) thick CFC and HCFC-free closed-cell flexible elastomeric foam insulation material with 100% adhesive coverage.

C. Condenser

1. Condenser fans shall be propeller type arranged for vertical air discharge and individually driven by direct-drive fan motors. The fans shall be equipped with a heavy-gauge vinyl-coated fan guard. Fan motors shall be TEAO type with permanently lubricated ball bearings, inherent overload protection, three-phase, direct-drive, 1140 rpm. Each fan section shall be partitioned to avoid cross circulation.
2. Coil Options
   a. [Standard Microchannel] Coil shall be all aluminum alloy microchannel design and shall have a series of flat tubes containing multiple, parallel flow microchannels layered between the refrigerant manifolds. Tubes shall be 9153 aluminum alloy. Tubes made of 3102 alloy or other alloys of lower corrosion resistance shall not be accepted. Coils shall consist of a two-pass arrangement. Each condenser coil shall be factory leak tested with high-pressure air under water. Coils shall withstand 1000+ hour acidified synthetic sea water fog (SWAAT) test (ASTM G85-02) at 120°F (49°C) with 0% fin loss and develop no leaks.
      - [Standard Micro-Channel Coil] Coils shall withstand 1000+ hour acidified synthetic sea water fog (SWAAT) test (ASTM G85-02) at 120°F (49°C) with 0% fin loss and develop no leaks.
      - [Epoxy coated Micro-Channel Option] Condenser coils shall include baked epoxy coating providing 10,000+ hour salt spray resistance (ASTM B117-90).

C. Refrigerant Circuit

1. The refrigerant circuit shall include a refrigerant filter-drier, sight glass with moisture indicator, liquid line solenoid valve (no exceptions), expansion valve, and insulated suction line with option for shut-off valves.

E. Construction

1. Unit formed sheet metal components shall be painted using a corrosion resistant paint system, for aesthetics and long-term durability. Paint system will include a base primer with a high-quality polyester resin topcoat. Painted galvanized parts shall be G60 or greater and finished, unabraded panel surfaces shall be capable to be exposed to an ASTM B117 salt spray environment and exhibit no visible red rust at a minimum of 3,000 hours exposure. Finished, abraded surfaces shall be tested per ASTM D1654, having a

mean scribe creepage not exceeding 1/16" at 1,000 hours minimum exposure to an ASTM B117 salt spray environment

2. OPTIONS
   a. Painted steel wraps enclosing the coil end sections and piping
   b. Protective, 12 GA, PVC-coated, wire coil guards for the vertical upper coil section of the unit
   c. Protective, 12 GA, PVC-coated, wire base guards for the lower section of the unit
   d. Protective and decorative louvers for upper section of the unit, covering the coils and unit end
   e. Protective and decorative louvers for lower section of the unit

F. Control System
   1. A centrally located weatherproof control panel shall contain the field power connection points, control interlock terminals, and control system. Box shall be designed in accordance with NEMA 3R rating. Power and starting components shall include factory circuit breaker for fan motors and control circuit, individual contactors for each fan motor, solid-state compressor three-phase motor overload protection, inherent fan motor overload protection and one power block for connection to remote, contractor supplied disconnect switches. Hinged access doors shall be lockable. Barrier panels or separate enclosures are required to protect against accidental contact with line voltage when accessing the control system.
   2. OPTIONS
      a. [Shall include single-point power connection to power block (Customer-supplied disconnect required).]
      b. [Shall include single-point connection to a non-fused disconnect switch with through-the-door handle.]

G. An advanced DDC microprocessor unit controller with a 5-line by 22-character liquid crystal display provides the operating and protection functions. The controller shall take preemptive limiting action in case of high discharge pressure or low evaporator pressure. The controller shall contain the following features as a minimum:
   1. Equipment Protection
      a. The unit shall be protected in two ways: (1) by alarms that shut the unit down and require manual reset to restore unit operation and (2) by limit alarms that reduce unit operation in response to some out-of-limit condition. Shut down alarms shall activate an alarm signal.
      b. Shutdown Alarms
         - No evaporator water flow
         - Sensor failures
         - Low evaporator pressure
         - Evaporator freeze protection
         - High condenser pressure
         - Outside ambient temperature (auto-restart)
         - Motor protection system
         - Phase voltage protection (Optional)
      c. Limit Alarms
         - Condenser pressure stage down, unloads unit at high discharge pressures
         - Low ambient lockout, shuts off unit at low ambient temperatures
         - Low evaporator pressure hold, holds stage #1 until pressure rises
         - Low evaporator pressure unload, shuts off one compressor
      d. Unit Enable Selection
         - Enables unit operation from either local keypad, digital input, or BAS
      e. Unit Mode Selection
         - Selects standard cooling, ice, glycol, or test operation mode
      f. Analog Inputs
         - Reset of leaving water temperature, 4-20 mA
         - Current Limit
      g. Digital Inputs
         - Unit off switch
         - Remote start/stop
         - Flow switch
         - Ice mode switch, converts operation and setpoints for ice production
         - Motor protection
      h. Digital Outputs
         - Shutdown alarm; field wired, activates on an alarm condition, off when alarm is cleared
         - Evaporator pump; field wired, starts pump when unit is set to start
      i. Condenser Fan Control
         - The unit controller shall provide control of condenser fans based on compressor discharge pressure.
      j. Building Automation System (BAS) Interface
         - Factory mounted DDC controller(s) shall support operation on a BACnet®, Modbus® or LonMark® network via one of the data link / physical layers listed below as specified by the successful Building Automation System (BAS) supplier.
           – BACnet® MS/TP master (Clause 9)

  - BACnet® IP, (Annex J)
  - BACnet® ISO 8802-3, (Ethernet)
  - LonMark® FTT-10A. The unit controller shall be LonMark® certified.
- The information communicated between the BAS and the factory mounted unit controllers shall include the reading and writing of data to allow unit monitoring, control and alarm notification as specified in the unit sequence of operation and the unit points list.
- For chillers communicating over a LonMark® network, the corresponding LonMark® External Interface File (XIF) shall be provided with the chiller submittal data.
- All communication from the chiller unit controller as specified in the points list shall be via standard BACnet® objects. Proprietary BACnet® objects shall not be allowed. BACnet® communications shall conform to the BACnet® protocol (ANSI/ASHRAE135-2001). A BACnet® Protocol Implementation Conformance Statement (PICS) shall be provided along with the unit submittal.

2.05 OPTIONS AND ACCESSORIES

A. The following optional items shall be furnished:

1. Hot Gas Bypass: allows unit operation to 25 percent of full load; includes factory-mounted hot gas bypass valve and solenoid valve. Stock units shall be equipped with discharge line and liquid line shut-off valves and ready for hot gas bypass field piping according to manufacturer instructions.
2. Low Ambient Control: Fan VFD allows unit operation down to -10°F (-23°C).
3. High ambient control box for operation in ambient temperatures from 105°F (40°C) to 125°F (52°C).
4. Phase loss with under/over voltage protection and with LED indication of the fault type to guard against compressor motor burnout.
5. Chilled water flow switch (factory mounted or field installed)
6. Evaporator inlet strainer, 0.063” perforations with extension pipe and grooved couplings (factory mounted or field installed)
7. Spring vibration isolators (field installed)
8. Rubber-in-shear vibration isolators (field installed)
9. Compressor sound reduction package
10. Remote operator interface panel (field-wired)
11. BAS interface module, factory mounted

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in strict accordance with manufacturer’s requirements, shop drawings, and contract documents.

B. Adjust and level chiller in alignment on supports.

C. Coordinate electrical installation with electrical contractor.

D. Coordinate controls with control contractor.

E. Install a field-supplied or optional manufacturer-supplied strainer in the chilled water return line at the evaporator inlet that meets manufacturer perforation size specifications.

3.02 START-UP

A. Provide testing and starting of machine, and instruct the Owner in its proper operation and maintenance.

Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin Applied equipment, its care should be a high priority. For training information on all Daikin Applied HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

Warranty

All Daikin Applied equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

Aftermarket Services

To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

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