

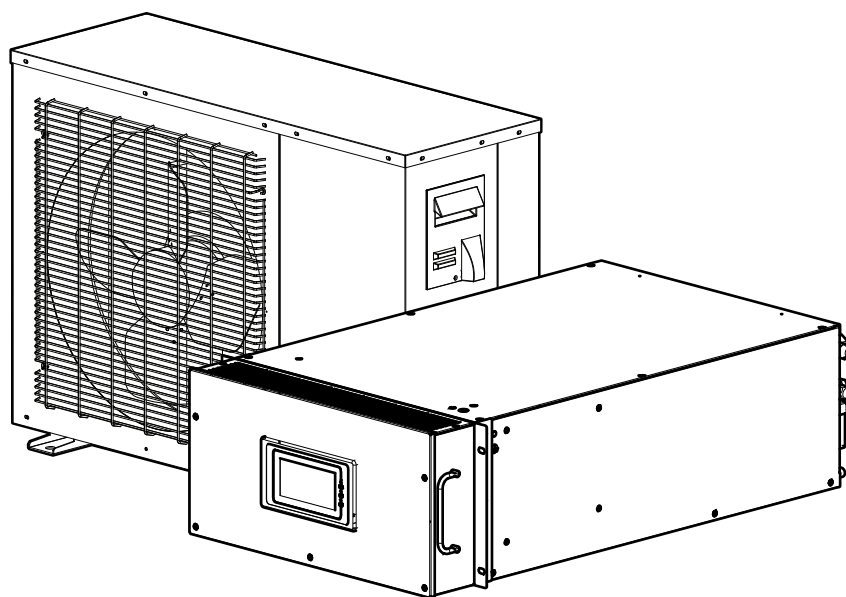
Uniflair™ RM

3.5-kW DX Split Air Conditioning Unit

User Manual

ACRMD4KT Series, 60 Hz, ETL Certified

990-6280-001
Release Date: 12/2019



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Safety

Important Safety Instructions — SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

Failure to follow these instructions will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

Failure to follow these instructions can result in equipment damage.

Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety During Installation and Operation

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must be installed and serviced by qualified personnel only.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Replace all devices, doors, and covers before turning on power to this equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- If the power supply cord is damaged, it must be replaced by an equivalent cord or assembly available from the manufacturer or its service agent.

Failure to follow these instructions will result in death or serious injury.

WARNING

- Application installation and electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

WARNING

HAZARD FROM MOVING PARTS

Keep hands, clothing, and jewelry away from moving parts. Check the equipment for foreign objects before closing the doors and starting the equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

WARNING

DAMAGE TO EQUIPMENT OR PERSONNEL

- The equipment is heavy. For safety purposes, adequate personnel must be present when moving this item.
- The load must always be solidly anchored to the bearing element of the lifting equipment and means of transport.
- No one should be near the suspended load, nor in the working area of the crane, forklift, truck, or any other lifting equipment or means of transport.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

▲ WARNING**HAZARD TO EQUIPMENT OR PERSONNEL**

This equipment is not to be operated or installed by persons with reduced physical, sensory, or mental capabilities, or persons lacking experience or knowledge unless they have been given supervision or instruction. Children are not to operate or play on or around this equipment.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

▲ CAUTION**HAZARD FROM UNPROTECTED OUTPUT**

Apply circuit protection to all outputs.

Failure to follow these instructions can result in injury or equipment damage.

▲ CAUTION**HAZARD TO EQUIPMENT OR PERSONNEL**

Do not operate your air conditioner in a wet room such as a bathroom or laundry room.

Failure to follow these instructions can result in injury or equipment damage.

▲ CAUTION**BODILY INJURY OR EQUIPMENT DAMAGE**

This equipment is not to be accessed by the general public.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE**STATIC ELECTRICITY HAZARD**

Circuit boards contained within this unit are sensitive to static electricity. Use one or more electrostatic-discharge devices while handling the board.

Failure to follow these instructions can result in equipment damage.

NOTICE**DAMAGE FROM EXPOSURE**

Leaving the equipment uncovered and exposed to possible damage from the environment will void the factory warranty.

Failure to follow these instructions can result in equipment damage.

NOTICE**DAMAGE TO REFRIGERATION CIRCUIT**

- Make sure the compressor has been pre-heated for at least 24 hours in the event the system is not in operation for an extended period of time.

Failure to follow these instructions can result in equipment damage.

NOTICE

DAMAGE TO EQUIPMENT

- If the power supply cord is damaged, it must be replaced by the manufacturer.
- An all-pole disconnection device that has at least 3-mm clearances in all poles and has a leakage current that may exceed 10 mA, the residual current device (RCD) having a rated residual operating current not exceeding 30 mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Type and rating of fuses: glass tube 250 V, 3.15 A

Failure to follow these instructions can result in equipment damage.

Intended Use

The cooling units provide air conditioning within the limits and methods described in this manual. This equipment must be installed and applied in accordance with the instructions provided. No modifications may be made to the units or their parts without explicit written consent from Schneider Electric. Any mechanical or electrical modification voids factory warranty.

General Information

Document Overview

Original Instructions

These are the original instructions provided by the manufacturer.

Save These Instructions

This manual contains important instructions that must be followed during installation, operation, and maintenance of the cooling unit.

Manual Updates

Schneider Electric™ policy is one of continuous technological innovation and the company reserves the right to amend any data herein without prior notice. The images shown in this manual are for descriptive purposes only and they may differ from specific models that are selected.

NOTE: Unit images and component identification information are examples only. The final configuration of the unit may change according to the different options.

Check for updates to this manual on the Schneider Electric Web site, www.schneider-electric.com/support. Select the **Download Documents and Software** link under the **Support** tab and enter the manual part number or SKU for your equipment in the search field. See the back cover of this manual for the part number.

Cross-Reference Symbol Used in This Manual



See another section of this document or another document for more information on this subject.

Abbreviations

The following abbreviations and terms are used in this manual:

- CFD: Computational fluid dynamics
- EXV: Electronic expansion valve
- PTC: Positive Temperature Coefficient

Equipment Disposal

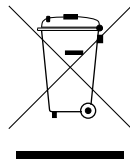
General Information

- This air-conditioning unit contains fluorinated greenhouse gases.
- Installation, servicing, maintenance, and repair of this unit must be performed by qualified personnel.
- Un-installation and recycling of the product must be performed by qualified personnel.
- When the unit is checked for leaks, proper record keeping of all checks is strongly recommended.

Please Recycle

The shipping materials are recyclable. Save them for later use, or dispose of them appropriately.

Waste Electrical and Electronic Equipment (WEEE) Disposal



Schneider Electric products comply with international directives on the Restriction of Hazardous Substances (RoHS) in electronic and electrical equipment and the disposal of Waste Electrical and Electronic Equipment (WEEE). Dispose of any waste electronic or electrical equipment with the appropriate recycling center. Contact Schneider Electric for assistance.

California Proposition 65—Warning Statement for California Residents



WARNING: This product can expose you to chemicals including lead and lead compounds, that are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Receiving and Inspecting the Unit

The cooling unit is packaged in a wooden crate or anchored to a pallet and covered with transparent film.

Upon delivery, check that the unit is intact and immediately notify the carrier in writing of any damage that can be attributed to careless or improper transportation. Check for any damage on the area upon which the display interface is mounted.

In case of shipping damage, do not operate the cooling unit. Keep all packaging for inspection by the shipping company and contact Schneider Electric Corporation.

Filing a Claim

If damage is identified on receipt of the equipment, note the damage on the bill of lading and file a damage claim with the shipping company. Contact Schneider Electric Worldwide Customer Support at one of the numbers listed on the Web page on the back page of this manual for information on how to file a claim with the shipping company. The shipping claim must be filed at the receiving end of the delivery.

NOTE: In case of shipping damage, do not operate the equipment. Keep all packaging for inspection by the shipping company and contact Schneider Electric.

Storing the Unit Before Installation

NOTICE

DAMAGE FROM EXPOSURE

Leaving the equipment uncovered and exposed to possible damage from the environment will void the factory warranty.

Failure to follow these instructions can result in equipment damage.

Item	Requirements
Storage environment	Indoor, clean (without dust)
Ambient humidity	15–85% RH (without condensation)
Ambient temperature	–20.0 to 52.0°C (–4.0 to 129.2°F)

Unpacking the Unit

Move the unit near its final position before unpacking it for inspection.

The unit is packed with corrugated paper. Remove all packing materials on site.

Moving the Unit

⚠ WARNING

DAMAGE TO EQUIPMENT OR PERSONNEL

- The equipment is heavy. For safety purposes, adequate personnel must be present when moving this item.
- The load must always be solidly anchored to the bearing element of the lifting equipment and means of transport.
- No one should be near the suspended load, nor in the working area of the crane, forklift, truck, or any other lifting equipment or means of transport.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Lifting and transporting the units must be carried out by qualified personnel as described in this manual.

Use all relevant safety standards to prevent any possible damage to people or objects.

Indoor Unit

The cooling unit is packaged in a carton. The recommended tools for moving and installing the equipment include the following:

Forklift



Pallet Jack



Outdoor Unit

The condensing unit is packaged in a carton. The recommended tools for moving and installing the equipment include the following:

Pallet Jack



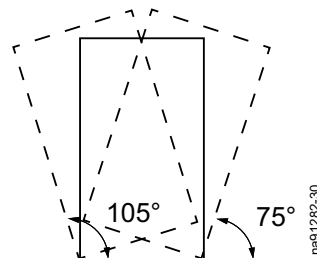
Forklift



Crane



Keep the inclination of the outdoor unit within 75–105 degrees.



Unit Overview

Introduction

This AC unit series, an air conditioning system of precision environmental control in a server cabinet, provides precise temperature control, safety and reliability, high energy efficiency design, and remote monitoring.

This series also features efficient refrigeration, high reliability, high sensible-heat factor, intelligent monitoring, rapid installation, convenient maintenance, and compact structure. R410A refrigerant is used as required internationally for environmental protection.

Precise Temperature Control

This series of air conditioners has a temperature control within $\pm 2.0^{\circ}\text{C}$ (3.6°F). Intelligent microprocessing control monitors any change in the server cabinet and responds with control processing in advance rather than reacting to the change of the environment at that time.

Safety and Reliability

Keep the unit running 24 hours a day to keep it reliable. The advanced microprocessing system of the units automatically adjusts machine operation and reduces faults. Automatic alarms and diagnostics aid in maintenance and servicing to help protect the unit and prolong the life of the unit.

High Energy Efficiency Design

The DC brushless, axial flow, centrifugal fan features minimal vibration, low noise, and high reliability. The high-efficiency, finned-tube heat exchanger greatly improves the heat exchange efficiency. The loop developed and verified to a specific model ensures each loop is uniformly distributed and the heat exchanger is fully used.

Remote Monitoring

Remote monitoring includes an RS485 interface and Modbus protocol.

- Telemetry Function: Remotely read the return and supply air temperature, humidity of return, and working state of the unit.
- Remote Function: Remotely read the open and close state, high or low temperature and return air humidity, and normal or failure fan state.

Cooling Control

- Temperature Control Function
 - Indoor temperature controls system
- Cooling Regulation Function
 - Variable-speed compressor
 - Cooling output range of 25–100% (16–90Hz)
- Temperature
 - Regulated temperature range of $19\text{--}30^{\circ}\text{C}$ ($66.2\text{--}86.0^{\circ}\text{F}$)
 - Adjustable temperature within $\pm 2.0^{\circ}\text{C}$ (3.6°F)

Equipment Guidelines

Working Conditions and Environmental Limits

Indoor Unit

Limit Working Conditions	
Power Supply	208 V~, 1 Ph, 60 Hz
Room Conditions	
Temperature	16–43°C (60.8–109.4°F)
Humidity	15%–65%RH (without condensation)
Maximum Altitude	1000 m (3281 ft), de-rated for more than 1000 m (3281 ft)
Storage Conditions	
Temperature	–20 to 52°C (–4.0 to 129.2°F)

Outdoor Unit

Limit Working Conditions	
Power Supply	208 V~, 1 Ph, 60 Hz
Ambient Conditions with Low Ambient Temperature Kit	
Temperature	–35.0 to 48.0°C (–31.0 to 118.4°F)
Maximum Altitude	1000 m (3281 ft), de-rated for more than 1000 m (3281 ft)
Ambient Conditions Without Low Ambient Temperature Kit	
Temperature	–20.0 to 48.0°C (–4.0 to 118.4°F)
Maximum Altitude	1000 m (3281 ft), de-rated for more than 1000 m (3281 ft)
Storage Conditions	
Temperature	–20 to 52°C (–4.0 to 129.2°F)

Standard Features and Options

Standard Features

Indoor Unit

Feature	Description
Evaporator	The finned tube heat exchanger with high-efficiency internal thread copper pipes, hydrophilic foil, CFD flow field analysis, and optimal matching improve the heat transfer efficiency.
EXV	The EXV improves the control precision and response speed for precision cooling while the system is stable to save energy.
Fan	The DC fan is continuously variable in speed and can quickly respond to heat loads. It features high airflow, high efficiency, long service life, and low noise.
Controller	The unit controller features power recovery and fault warning. It has a terminal block connection interface.
Filter	The aluminum air filter provides a clean air supply.
Upward Air Plenum	The plenum cascades cold air up the front of the rack. The plenum is removable for the stacking application.

Outdoor Unit

Feature	Description
Compressor	The inverter-driven compressor adjusts the refrigerating capacity. The frequency conversion control technology of the compressor and the air supply temperature control of the unit enable the unit to flexibly adjust the refrigerating capacity under different heat loads, to provide a constant supply of air temperature, and reduce air temperature fluctuations. The running frequency of the compressor may be minimized under low thermal load conditions to ensure that the supply air temperature of the unit does not drop too low, and the compressor can be prevented from frequent start and stop to improve the efficiency and reliability of the unit and avoid condensation resulting from too low supply air temperature.
Fan	An axial flow, low-noise fan blade features wide voltage range and high reliability. The fan has multi-level air flow control, which improves the operation stability of the unit.
Condenser	Efficient finned-tube heat exchanger with hydrophilic fins does not retain dust and is easy to clean and maintain.

Optional Features

Feature	Description
Tube	The copper tube includes threaded joints, bell nuts, and insulation material for the outer package. The tube is sturdy, does not corrode easily, and withstands high temperature and high pressure.
Condensate Drain Pump	The low noise DC brushless water pump has a lift that reaches 5 meters (16.4 ft).
Low Ambient Temperature Kit	The low ambient temperature kit provides the capability to operate in temperatures below -15°C (-5°F).
Sheathed Heating Element	The structure is compact and the heating is uniform. The sheathed heating element installed in the indoor unit is used for heat compensation when the IT load is low.
Colorized Display Interface	The display interface is not required for operation, but it enables local control of the unit for viewing and customizing operational setpoints and status information. The unit can start-up and operate without the display interface by running at default settings.

Technical Data

Indoor Unit

NOTE: Refer to Unicalc for information on capacity at different conditions.

Total Cooling Capacity	3.6 kW (12,300 BTU/hr)
Sensible Cooling Capacity*	3.25 kW (11,088 BTU/hr)
Rated Power Input	208 V~, 1 Ph, 60 Hz
Rated Air Volume	750 m ³ /h (441 SCFM)
Number of Fans	1
IDU Fan Input Power	0.2 kW
Size of Liquid Pipe/Air Pipe Connection	9.52/12.7 mm (0.37/0.50 in.)
SCOP	2.8
Sound Pressure Level	74.0 dB(A)
Heater Capacity	600 W

*Data at 35°C (95°F) RAT, 23%RH, outdoor air temperature 35°C (95°F).

NOTE: Sensible cooling capacity is approximately 3.0 kW @ 737 m³/h (434 SCFM) for stacked unit. Total sensible cooling capacity for a stacked application is 6.25 kW (21,300 BTU/hr).

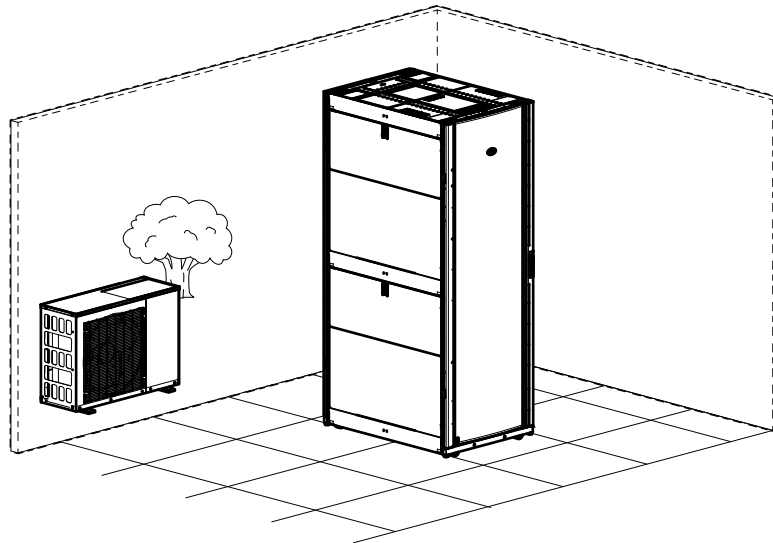
Outdoor Unit

Heat Exchange	6.3 kW
Rated Air Volume	1700 m ³ /h (1000 SCFM)
Input Power	0.95 kW
Number of Fans	1
Number of Compressors	1
Sound Pressure Level	57.8 dB(A)

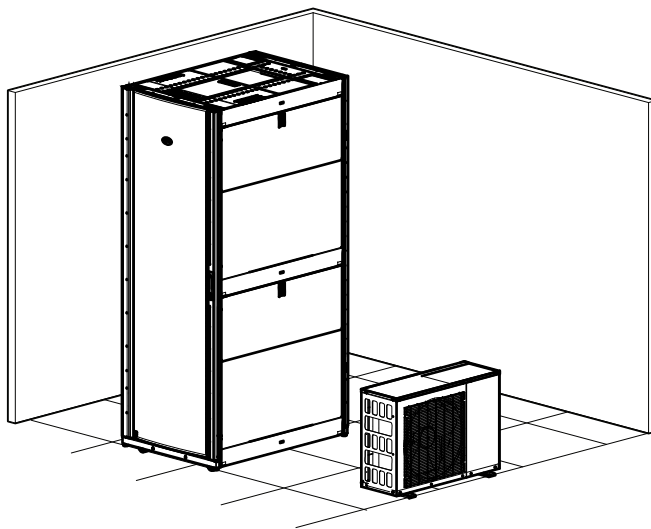
Refrigerant

Refrigerant Type	R410A
Refrigerant Charge	1.3 kg (45.9 oz)
CO ₂ Equivalent	2.714 tonnes (5983.0 lb)
GWP	2088

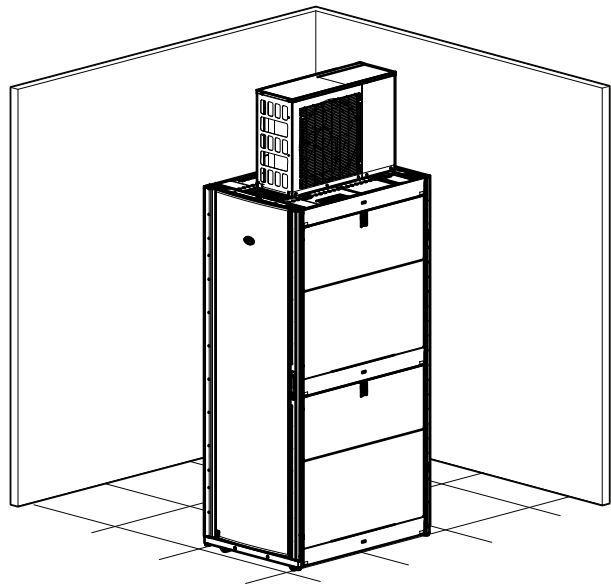
Installation Configurations



CONDENSING (OUTDOOR) UNIT INSTALLED OUTSIDE



CONDENSING (OUTDOOR) UNIT INSTALLED NEAR THE RACK*



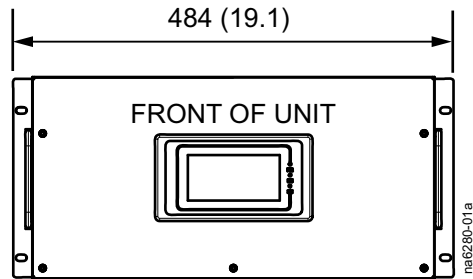
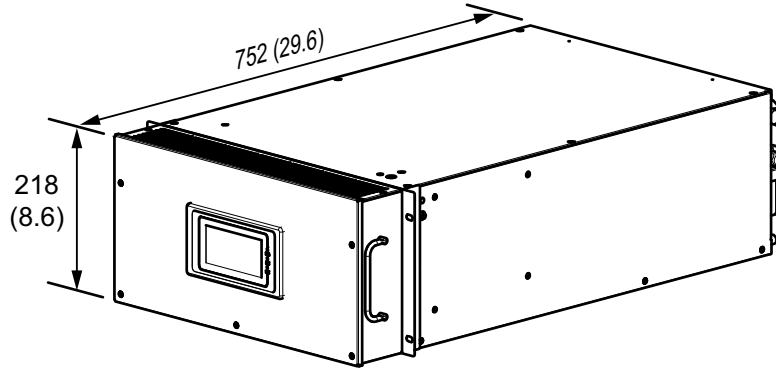
CONDENSING (OUTDOOR) UNIT INSTALLED ON TOP OF THE RACK*

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NOTE: *Installing the condensing unit outside is the typical room neutral installation application. Consult with Schneider Electric for use in these custom installation configurations

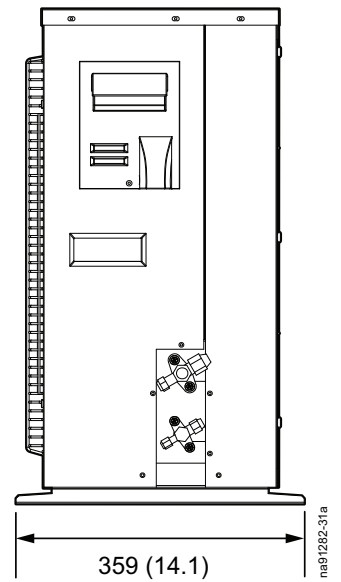
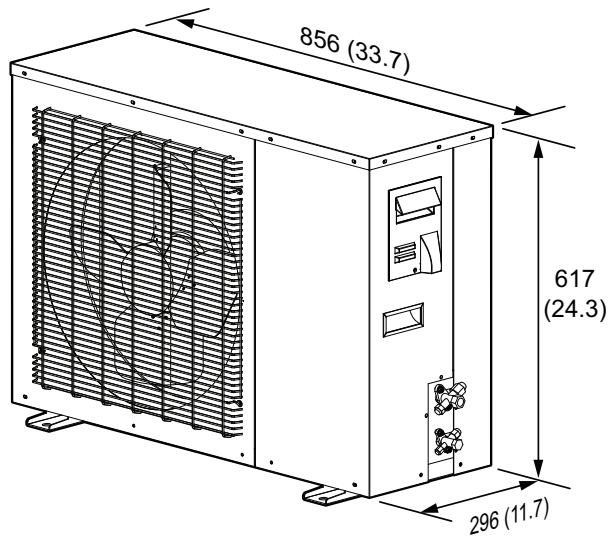
Dimensions and Weights

Indoor Unit



NOTE: Display interface is optional.

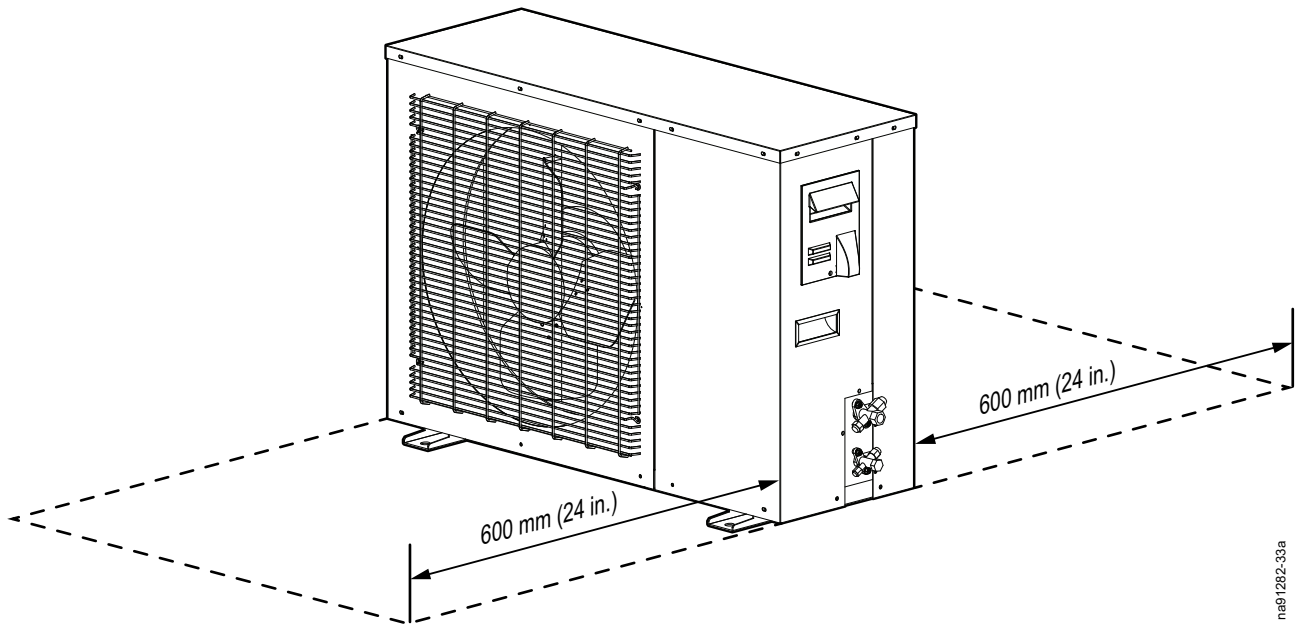
Outdoor Units



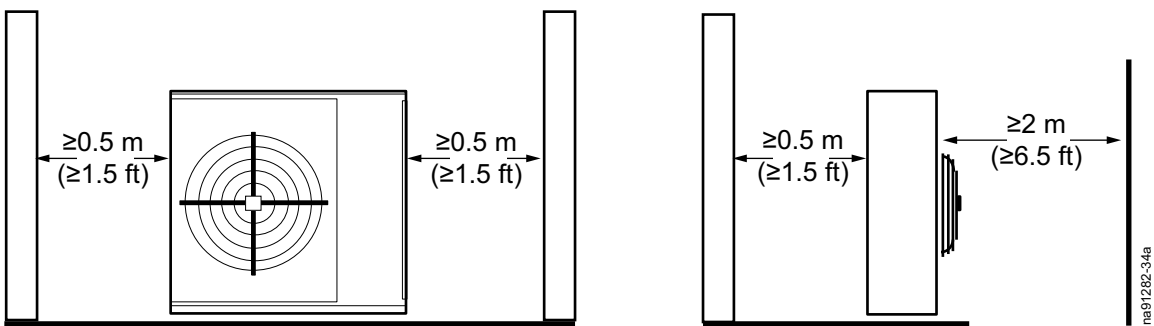
Weight

Unit	Operating Weight – kg (lb)
Indoor unit	26 kg (57.3 lb)
Outdoor unit	48 kg (105.8 lb)

Service Clearance

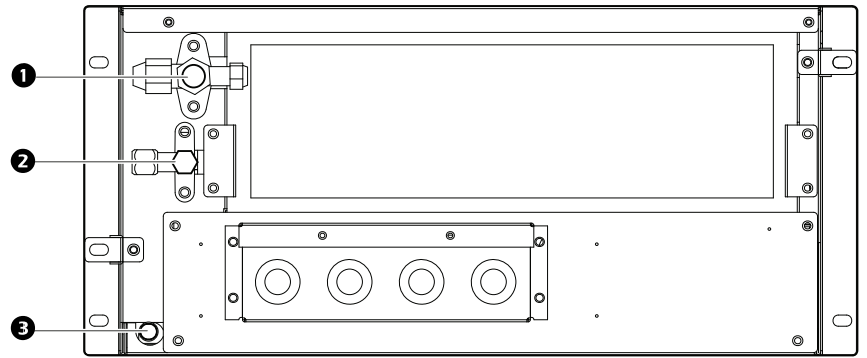
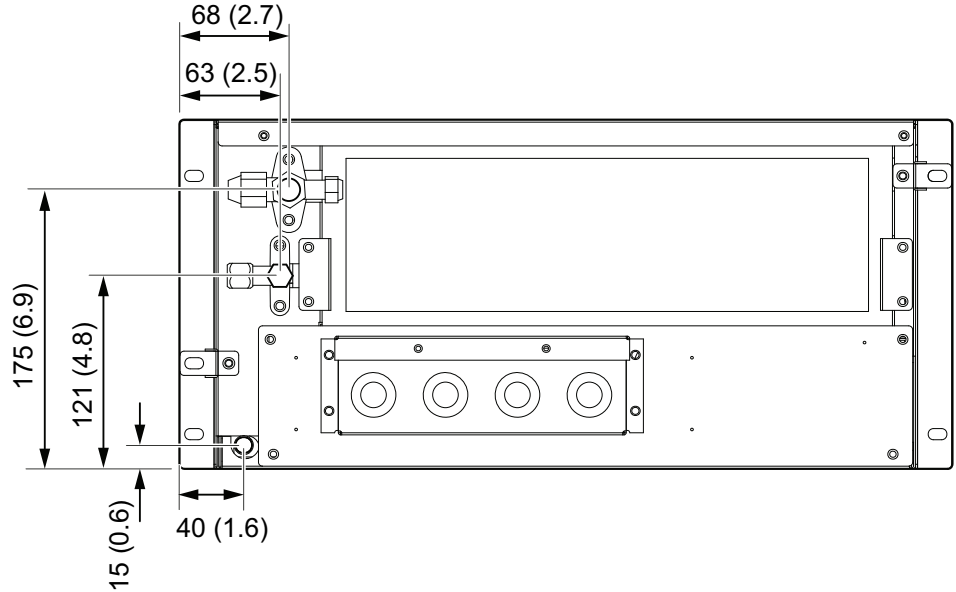


Airflow Clearance



Access Locations

Indoor Unit

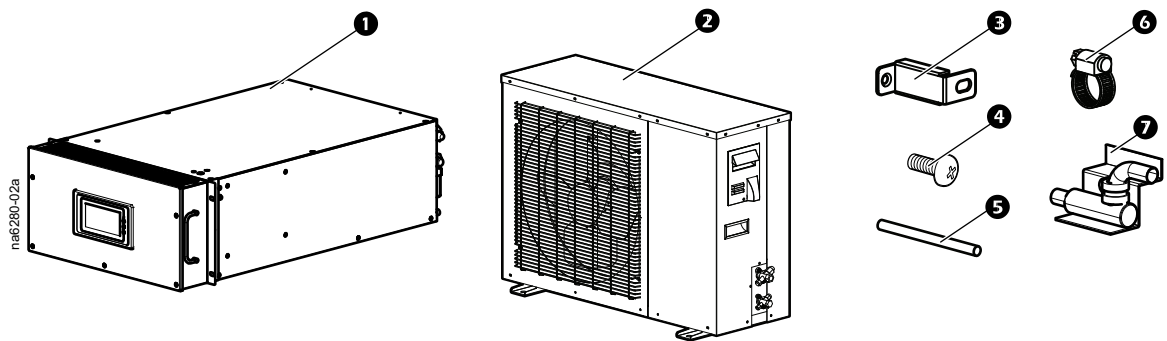


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Item	Description
❶	Suction line valve
❷	Liquid line valve
❸	Condensate drain line

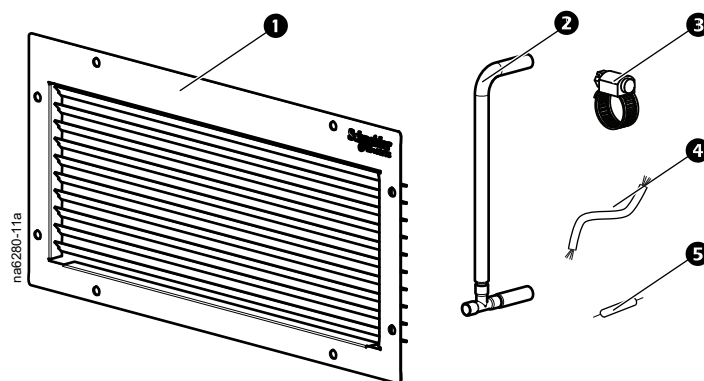
Component Identification

Inventory



Item	Description	Quantity
1	Indoor unit	1
2	Outdoor unit	1
3	Mounting bracket	2
4	M4x12 screw	2
5	Condensate drain hose	1
6	Hose clamp	3
7	Copper condensate drain adapter	1

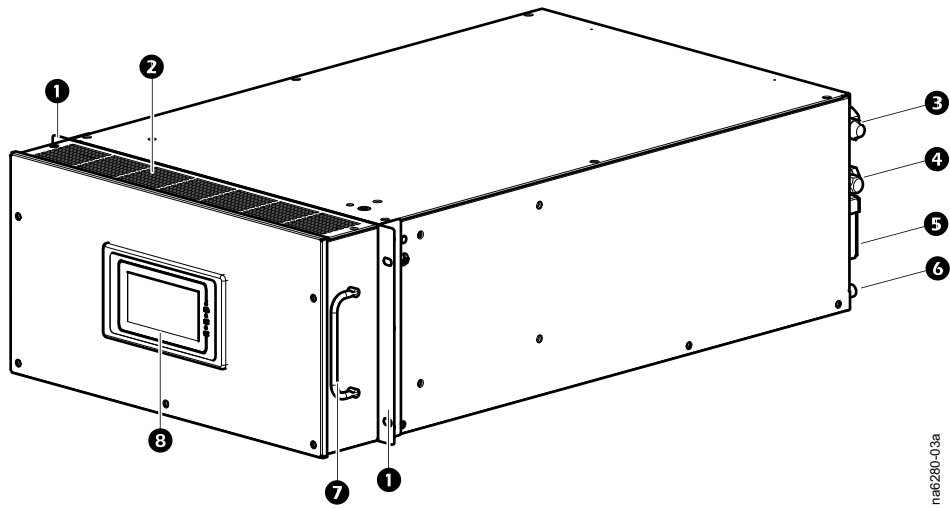
Stacking Kit—ACAC10048



Item	Description	Quantity
1	Grille	1
2	Drain connection copper pipe	1
3	Hose clamp	4
4	Communication wire (A6, B6) connection between units	1
5	Stacking application wire (D1, D2)	1

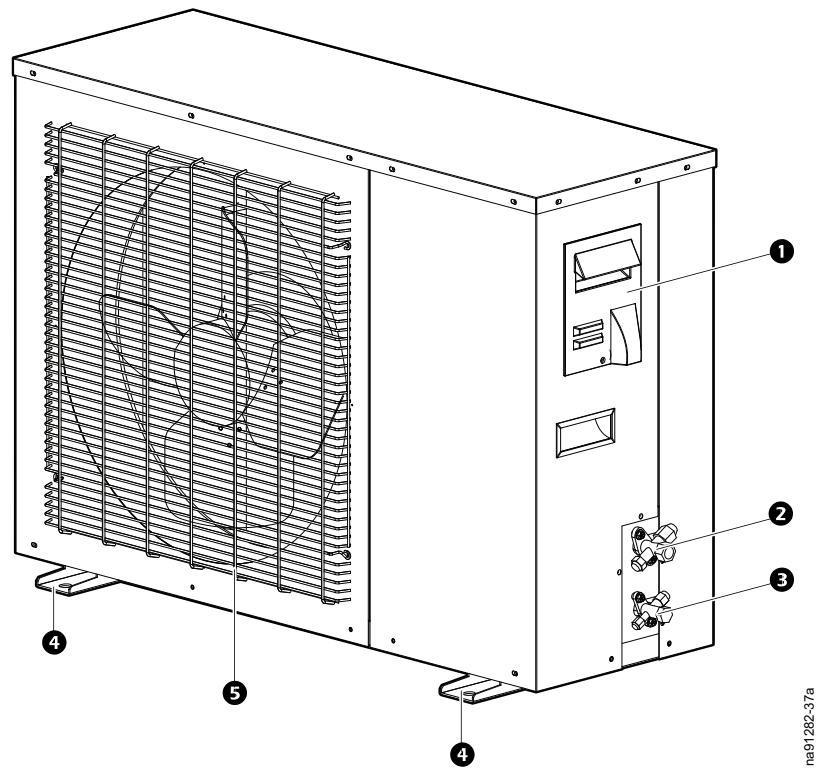
External Components

Indoor Unit



Item	Description	Item	Description
1	Mounting flange	5	Mounting bracket (field installed)
2	Grille	6	Condensate drain line
3	Suction line valve	7	Handle
4	Liquid line valve	8	Display interface (optional)

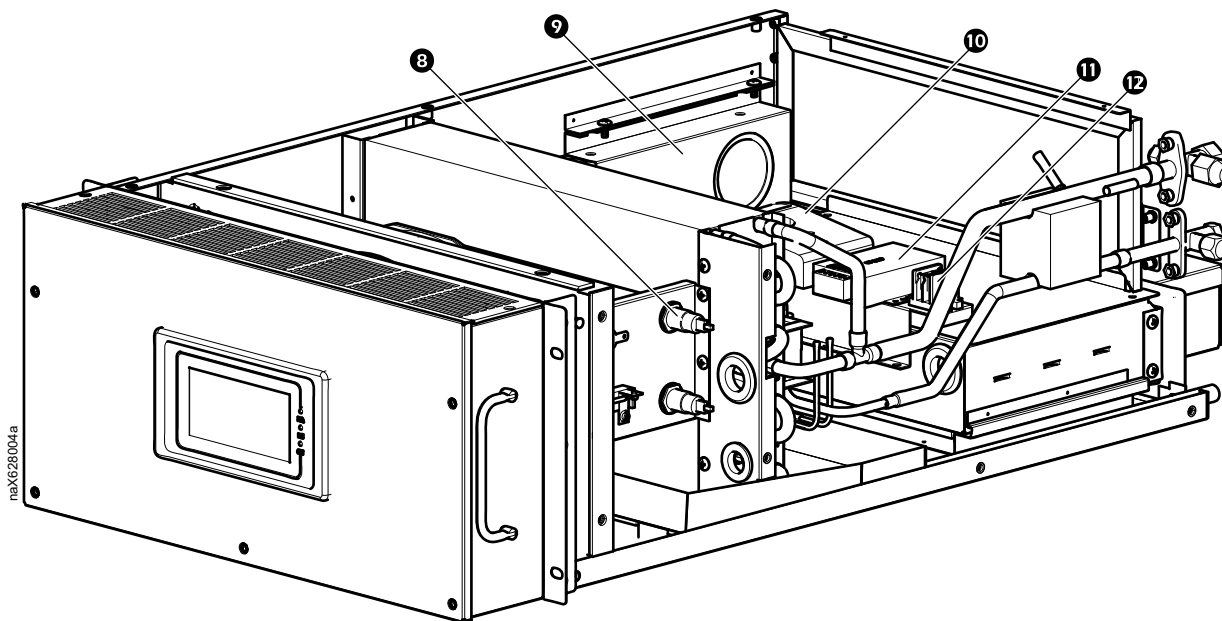
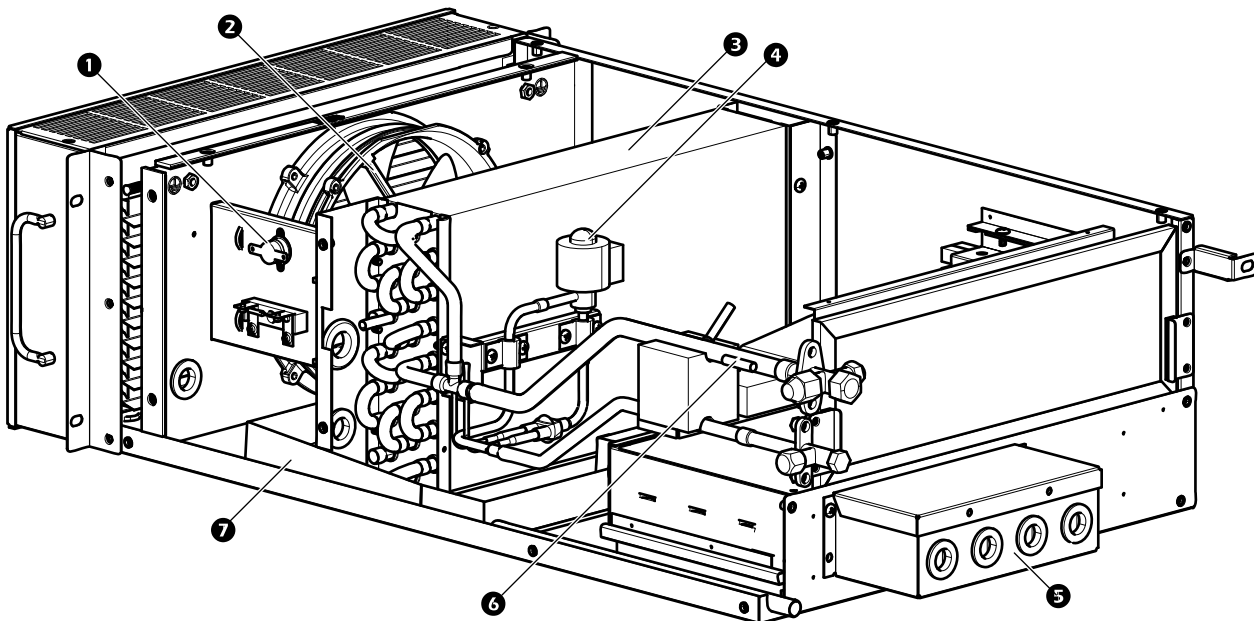
Outdoor Unit



Item	Description
①	Electrical panel access cover
②	Suction line valve
③	Liquid line valve
④	Mounting support
⑤	Fan protection grille

Internal Components

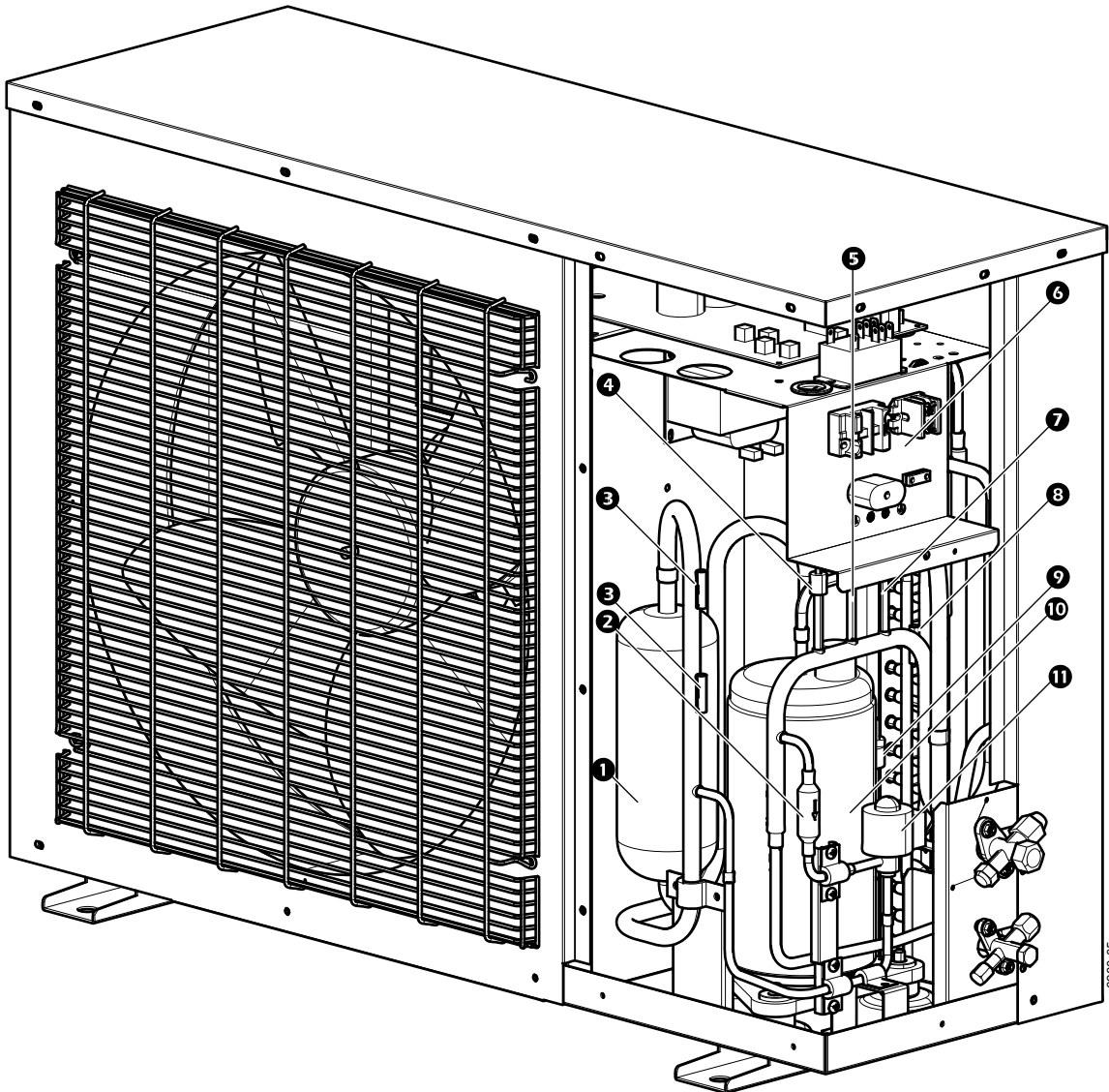
Indoor Unit



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Item	Description	Item	Description
1	Heater temperature protector	7	Condensate drain pan
2	Axial fan	8	Electric heater
3	Evaporative coil	9	Power supply unit
4	Electronic expansion valve (EXV)	10	Temperature and humidity sensor
5	Connection access box	11	Isolated data repeater
6	Suction line temperature sensor	12	Terminal board

Outdoor Unit

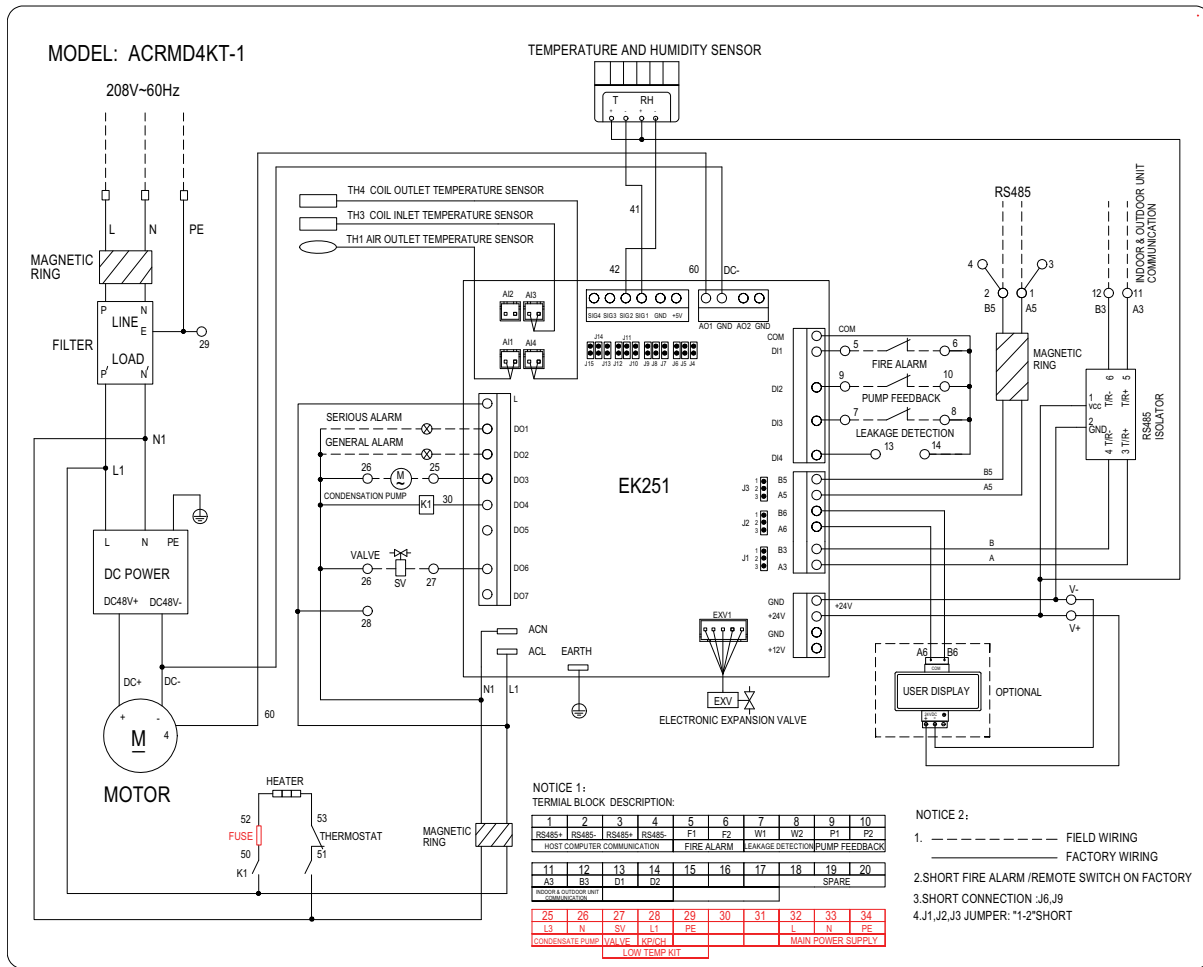


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Item	Description	Item	Description
①	Accumulator	⑦	High pressure sensor
②	Filter	⑧	Discharge temperature sensor
③	Suction temperature sensor	⑨	Low pressure sensor
④	Service port	⑩	Compressor
⑤	High pressure switch	⑪	Electronic expansion valve (EXV)
⑥	Electrical panel		

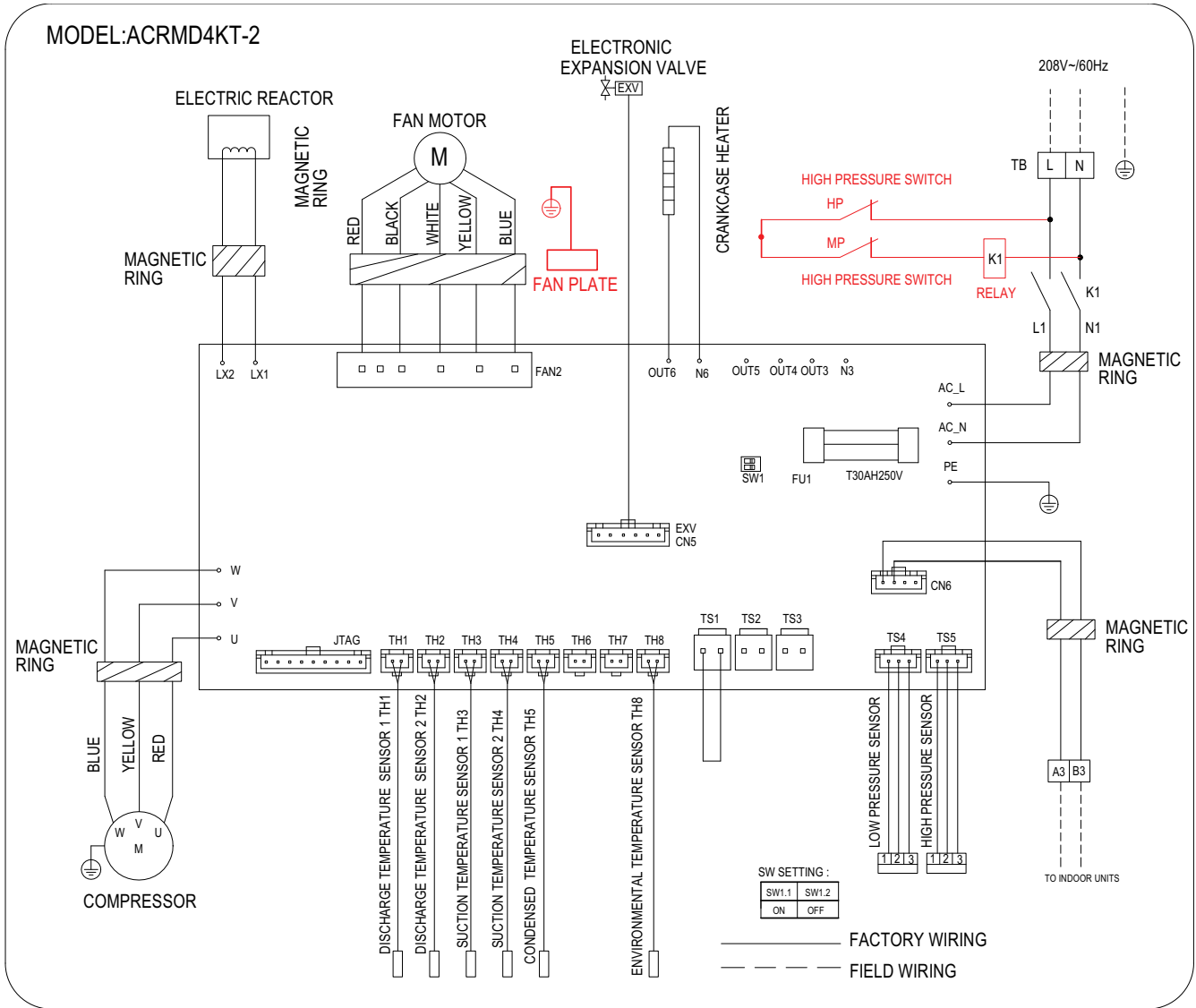
Diagrams

Wiring Diagram—ACRMD4KT-1 (Indoor Unit)



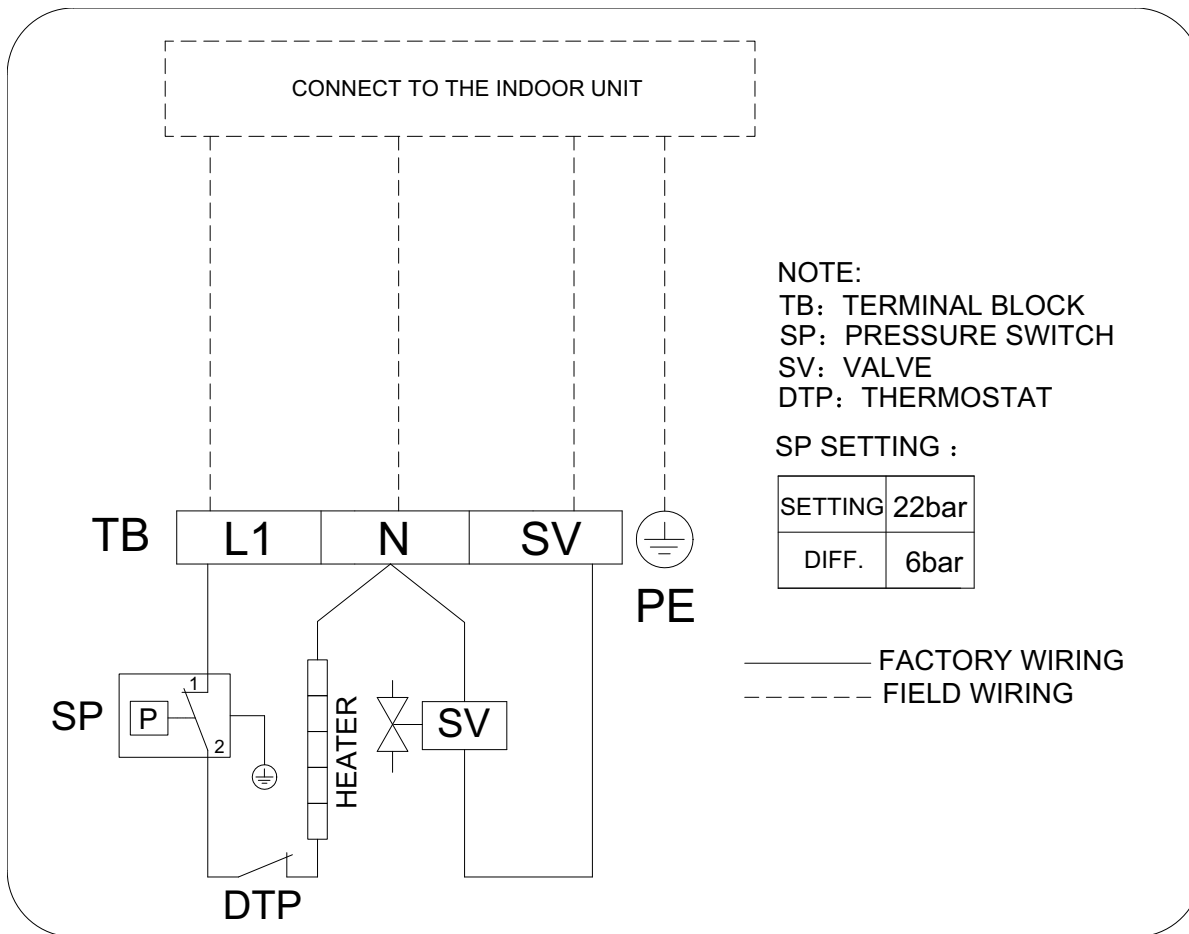
na6280-46a

Wiring Diagram—ACRMD4KT-2 (Outdoor Unit)



na6280-14sa

Wiring Diagram—ACAC10047 (Optional Low Temperature Kit)



na6280-47a

Installation

Site Preparation

Follow these guidelines to prepare the site for installation.

- Moisture proof and insulate the room to ensure the normal functioning of the environmental control system inside the room.
- Use polyethylene film for the moisture barrier on the ceilings and walls.
- Use moisture-proof paints on the concrete walls and floor.
- Minimize the entry of the outdoor air into the IT space as outdoor air may increase heating, cooling, and humidification and dehumidification loads of the system. Maintain intake of outdoor air below 5% of the circulating air.
- Fully enclose all doors and windows with minimized gaps.

Incoming Power Supply Requirements

WARNING

- Application installation and electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

- The main power requirement is 208 V/60 Hz.
- Ensure the electrical connection of the unit allows for the total load of the unit and its optional components. The difference between external static pressure of the unit and that of a standard unit may lead to changes in its input power and current. For the total input power and the total current, see the nameplate.
- The incoming power wire must have a circuit breaker of enough capacity with a contact opening distance of at least 3 mm (0.11 in.).
- Provide each unit with an independent power supply with power supply cut-off and over-current protection devices.
- Before wiring, ensure the power supply conforms to the specified value on the nameplate.
- Keep the wires away from the cooling line and the moving parts of the compressor, fan, and motor.

Before You Start

The outdoor unit has been charged with refrigerant in the factory, and the indoor unit has been filled with a nitrogen holding charge. If you need to check the gas, do the following:

1. Open the shutoff valve.
2. Press the needle valve side of the service valve and check for gas ejection.
3. Connect a pressure gauge to get an accurate reading.

Positioning Units

Outdoor Unit

⚠ CAUTION

HAZARD FROM SHARP EDGES

Many metal parts have sharp edges. Be careful and wear protective gloves and clothing when working around and inside the equipment.

Failure to follow these instructions can result in injury or equipment damage.

⚠ CAUTION

DAMAGE TO EQUIPMENT OR PERSONNEL

Use concrete or a supporting frame to build a base for the unit. Allow for the floor strength, drainage treatment, duct, and wiring. Insufficient strength may cause the unit to drop resulting in injury or equipment damage.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

EQUIPMENT DAMAGE RISK

Install the unit in an area that is protected from adverse conditions such as an oil source (including engine oil), salt (in a marine region), and sulfide gases (near a hot spring or refinery).

Failure to follow these instructions can result in equipment damage.

Select a location for the installation that adheres to the following guidelines:

- Does not take in hot air from the unit or another unit.
- Allows enough clearance space for maintenance.
- Has no obstacles in the air exhaust and draft ducts of the outdoor unit to stop airflow.
- Provides good ventilation to help the unit exchange heat.
- Has sufficient strength to bear the weight of the unit and its vibration during operation.
- Does not have dirt, oil, salt, or sulfide gases.
- Is able to drain rainwater and defrost water.
- Is not susceptible to flammable gas. If any flammable gas leaks and accumulates around the unit, an explosion may occur.
- Is not subject to direct blow of a strong breeze or typhoon. Install rainproof, snowproof, and sunproof equipment if possible.

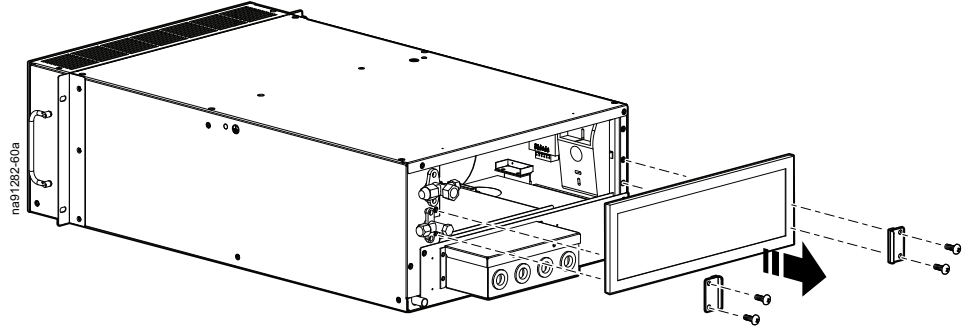
The floor and wall may cause vibration and noises depending on the installation conditions. Adopt anti-vibration measures such as anti-vibration pad or bumper bracket.

Panel Removal

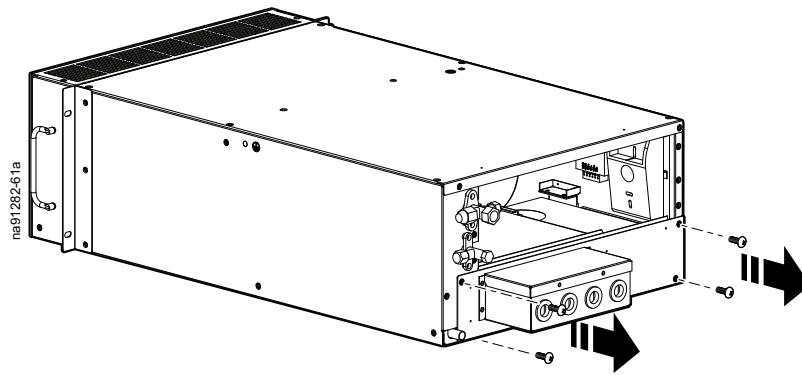
Indoor Unit

Electrical Box Access

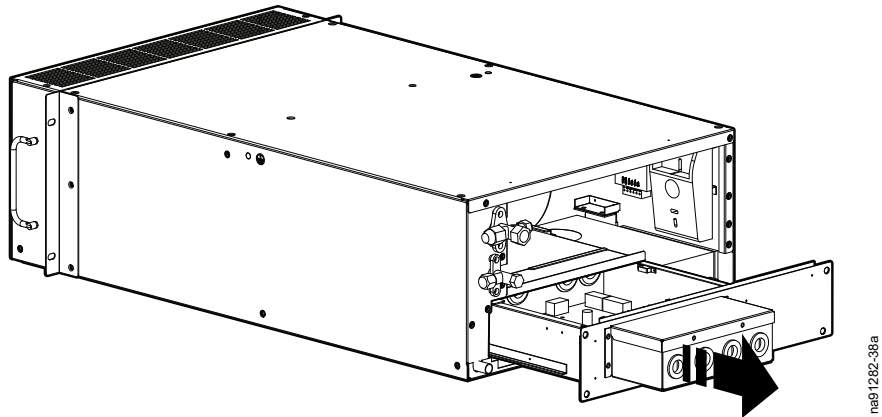
1. Remove the filter.



2. Remove the electrical panel screws.

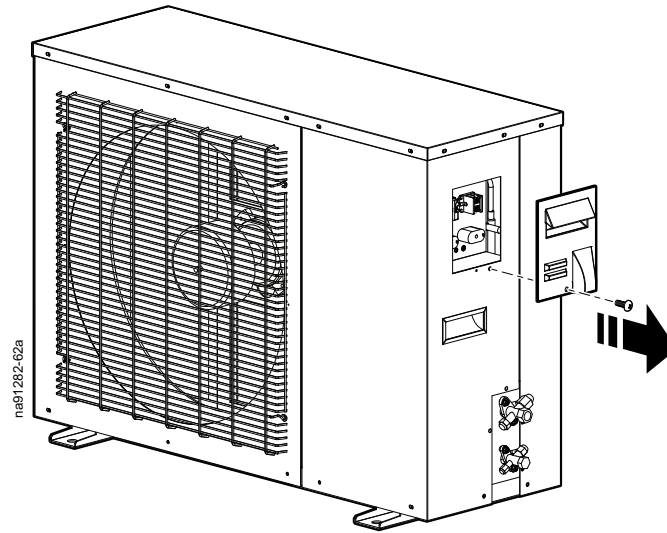


3. Slide the electrical box out of the unit.

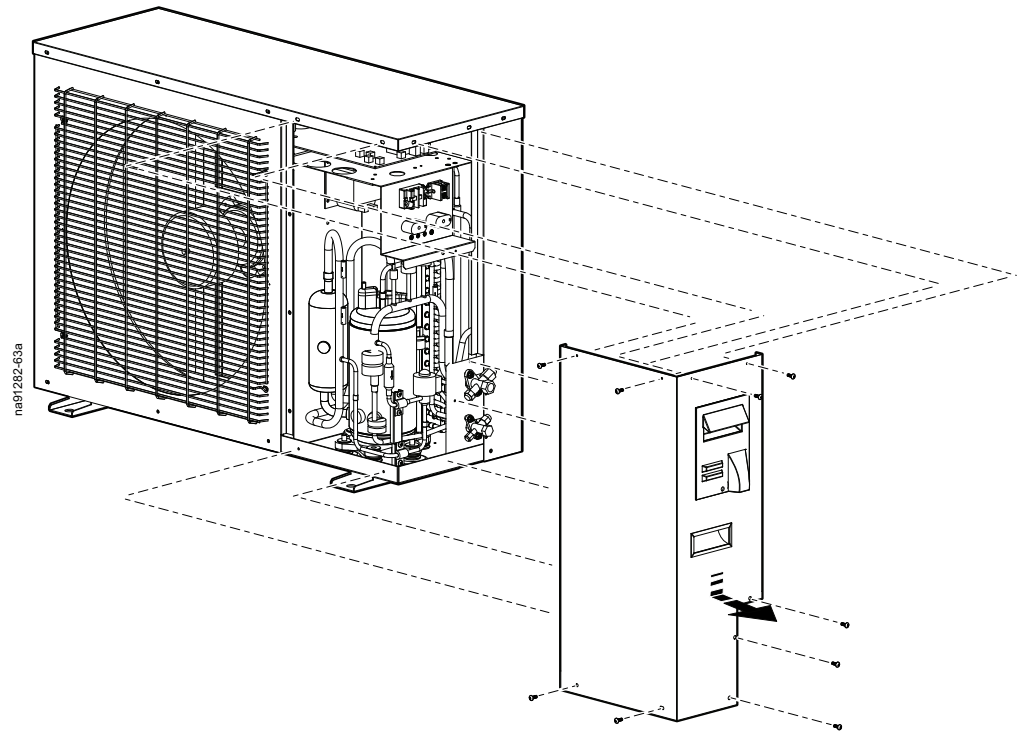


Outdoor Unit

Electrical Panel Access



External Panel



Mechanical Connections

Installing the Indoor Unit in the Rack

The air conditioner is a cabinet refrigeration product that is installed in the standard cabinet of a machine room.

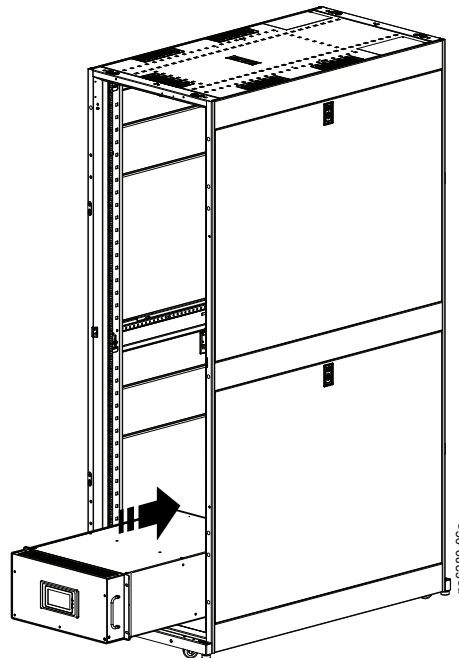
NOTE: Some components not shown for easier viewing.

1. Install the optional rail kit in the cabinet where the unit is to be installed.



See the installation instructions in the rail kit.

2. Slide the cooling unit (for a single unit application or the bottom unit for the stacking application) into the rack on the rails.



3. Attach the front mounting flanges to the vertical mounting rails in the rack with the cage nuts and washers provided with the rack.
4. Attach the rear of the unit to the vertical mounting rails with the supplied mounting brackets and the cage nuts and washers provided with the rack.

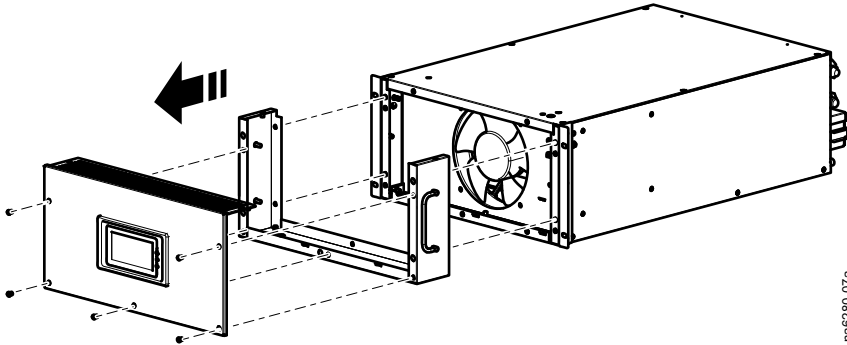
NOTE: These may not be necessary to support the unit if the rail kit is installed.

Installing the Stacked Unit in the Rack

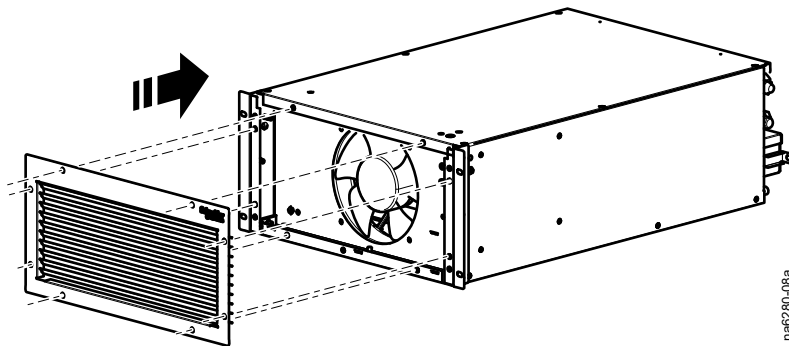
A second unit can be stacked on top of the first rackmount unit to increase the cooling capacity within the rack.

NOTE: Some components not shown for easier viewing.

1. Remove the front plenum and display from the second unit.



2. Attach the front grille from the stacking kit ACAC10048 to the front of the unit.

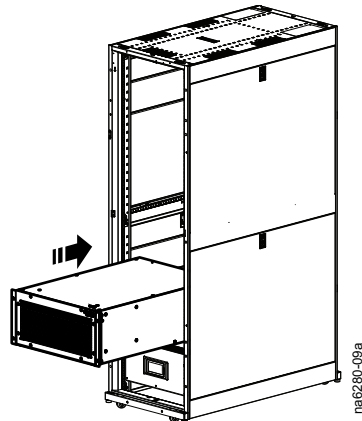


3. Install the optional rail kit in the cabinet where the unit is to be installed.



See the installation instructions in the rail kit.

4. Slide the cooling unit into the rack on the rails.



5. Attach the front mounting flanges to the vertical mounting rails in the rack with the cage nuts and washers provided with the rack.
6. Attach the rear of the unit to the vertical mounting rails with the supplied mounting brackets and the cage nuts and washers provided with the rack.

NOTE: These may not be necessary to support the unit if the rail kit is installed.

Installing the Outdoor Unit

⚠ CAUTION

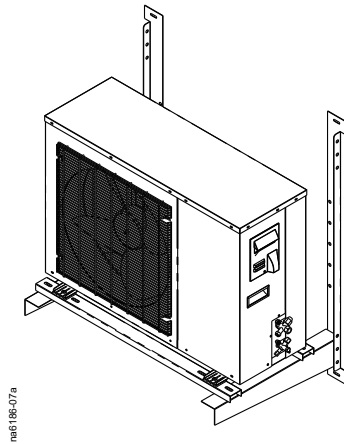
SHARP EDGES

Do not touch the fins of the heat exchanger with bare hands.

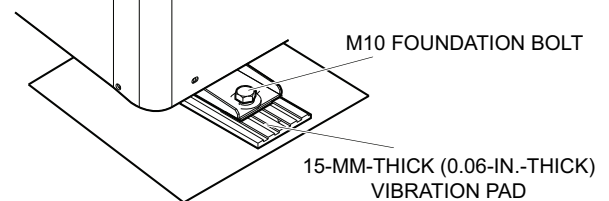
Failure to follow these instructions can result in injury or equipment damage.

When installing the outdoor unit, follow these guidelines:

- Concrete or a supporting frame should be used to build a base for the unit. When building the base, allow for the floor strength, drainage treatment (drainage water will outflow from the unit when it is in operation), and duct and wiring. Insufficient strength may cause the unit to fall.
- The outdoor unit should be attached to the frame with M10 bolts at each corner of the mounting base of the outdoor unit.
- Vibrations and noise from the unit may be transmitted to the structure when it is in operation. Use anti-vibration pads or a similar measure to prevent transmission of vibrations and noise.



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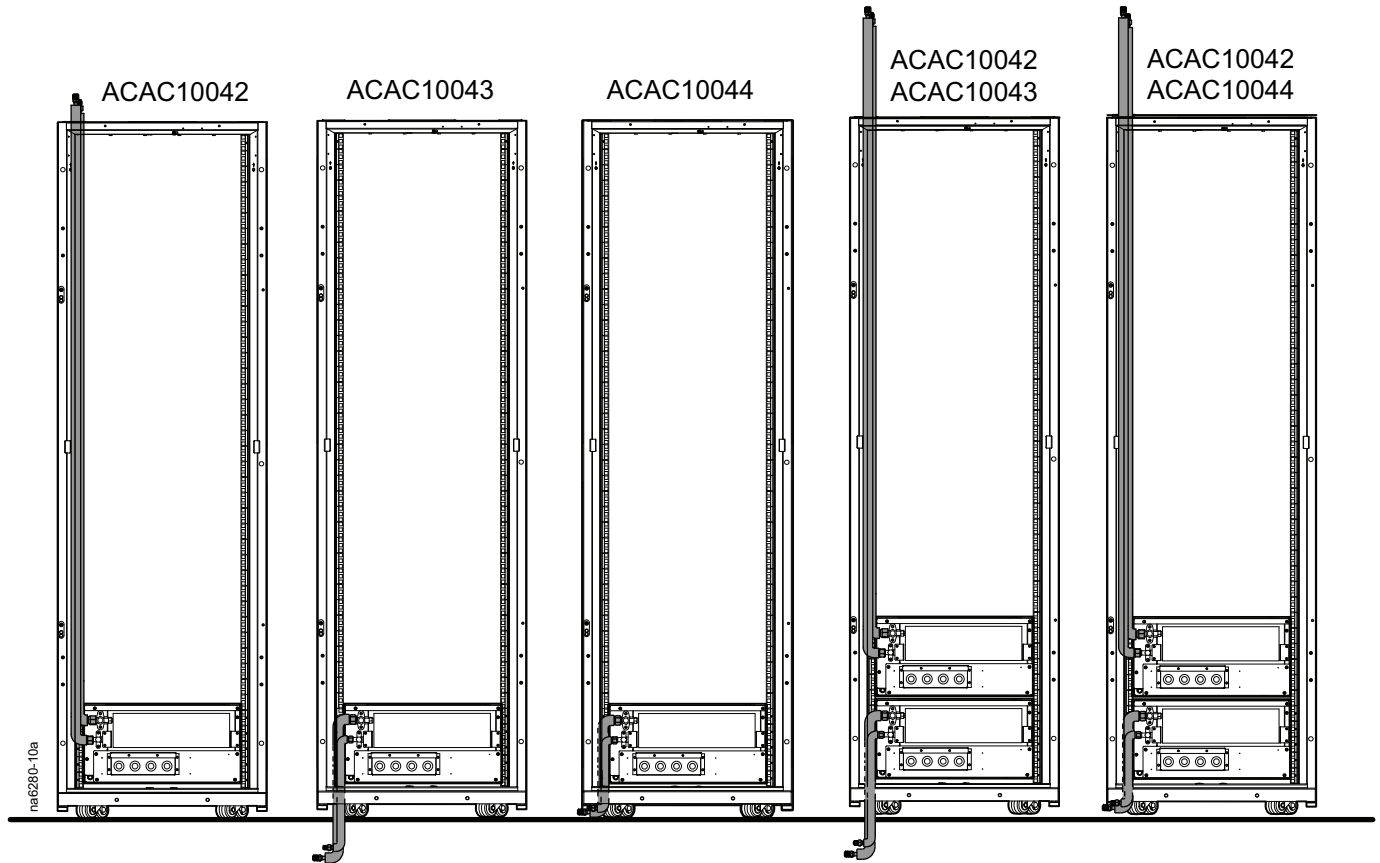


Piping Kit Application

Three piping kits are available as options for use with a single cooling unit installation:

- ACAC10042: Top piping
- ACAC10043: Bottom piping under the raised floor
- ACAC10044: Bottom piping under the rack

Use piping kit ACAC10042 with the top unit in a stacked application, and use either ACAC10043 or ACAC10044 with the bottom unit.



Refrigerant Piping

Piping Connection

The minimum equivalent piping length between the indoor and outdoor units is 5 m (16.4 ft). The maximum equivalent piping length between the indoor and outdoor units is 20 m (65.6 ft). The maximum vertical difference for the outdoor unit above or below the indoor unit is 5 m (16.4 ft). The table below outlines pipe sizes for field piping.

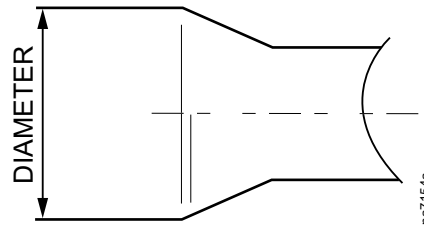
Tube	Size
Liquid line	Ø9.52 mm (3/8 in.)
Gas line	Ø12.7 mm (1/2 in.)
Refrigerant R410A piping (minimum thickness)	0.8 mm (0.03 in.)

The minimum thickness of the piping specified in the instructions is based on a pipe of copper and copper alloys in accordance with ASTM B280. The thickness and material of pipes used must be rated to withstand a pressure of 4.8 MPa (700 psi) in accordance with applicable laws.

If the unit is in an environment of severe corrosion, increase the thickness of the pipe by at least 0.2 mm (0.008 in.).

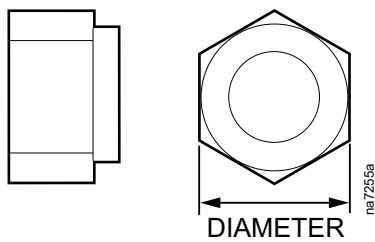
If the piping has a reduced thickness from bending and tensioning, increase its wall thickness accordingly.

Refer to the sizes in the table for processing the bell mouth of copper piping.



OD		OD Size
Metric	British	R410A
Ø6.35 mm	1/4 in.	9.1 mm (0.36 in.)
Ø9.52 mm	3/8 in.	13.2 mm (0.52 in.)
Ø12.70 mm	1/2 in.	16.6 mm (0.65 in.)
Ø15.88 mm	5/8 in.	19.7 mm (0.78 in.)
Ø19.05 mm	3/4 in.	24.0 mm (0.94 in.)

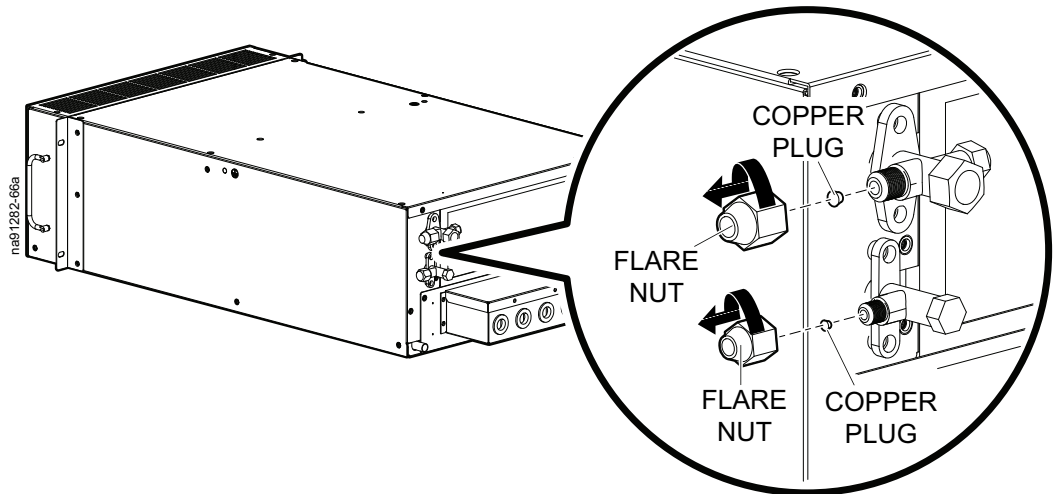
See the table for the corresponding flare nut specifications.



OD		OD Size
Metric	British	
Ø 6.35 mm	1/4 in.	17.0
Ø 9.52 mm	3/8 in.	22.0
Ø 12.70 mm	1/2 in.	24.0
Ø 15.88 mm	5/8 in.	27.0
Ø 19.05 mm	3/4 in.	36.0

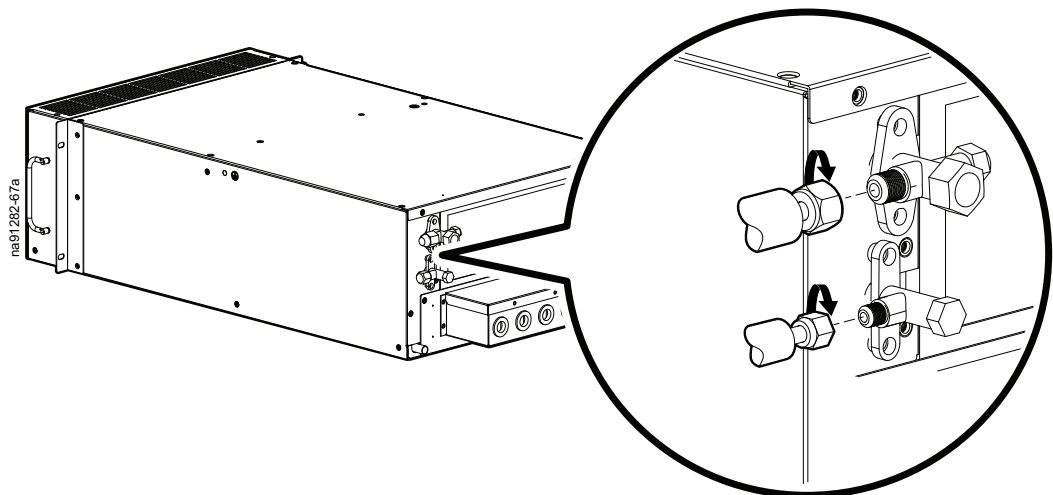
Copper Pipe Connection

1. Remove and keep the flare nuts and remove and discard the copper plugs from the liquid line and suction line connections.



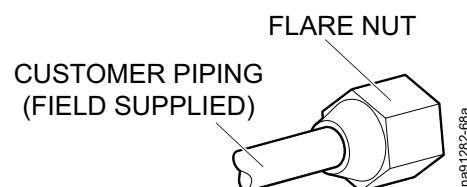
2. Connect the pipes from the selected pipe kit (ACAC10042, ACAC10043, or ACAC10044) to the liquid and suction lines.

NOTE: Make sure the piping does not inhibit removal of the electrical box.



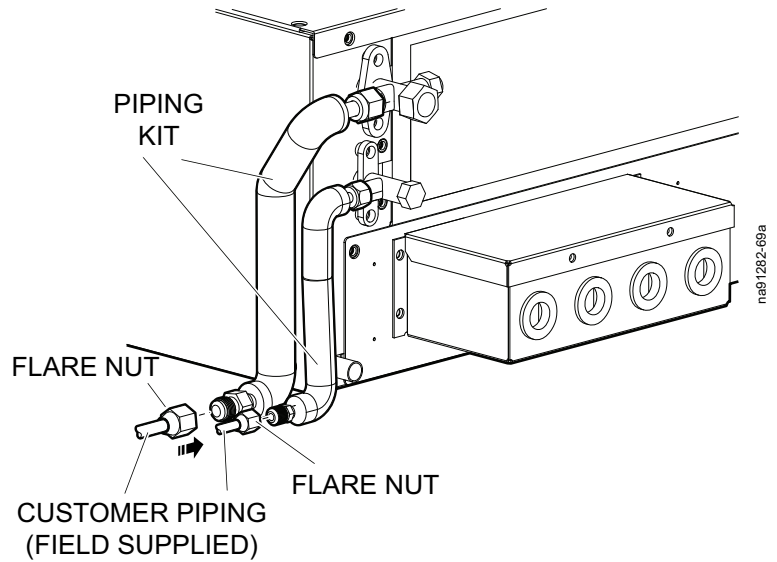
3. Use a flaring tool to connect the customer piping (field supplied) to the flare nut.

NOTE: Make sure the flare nut is on the piping before using the flaring tool on the customer piping.

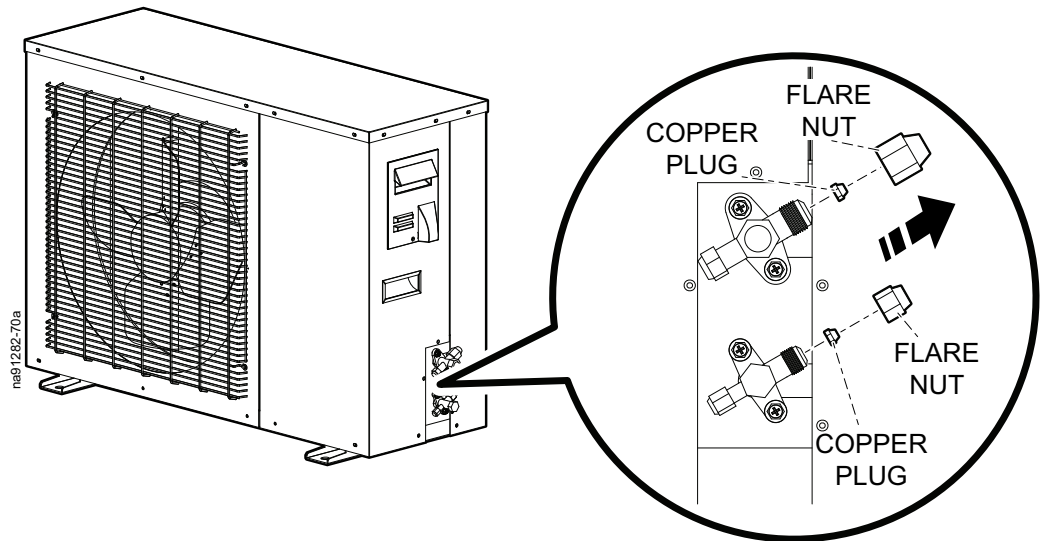


4. Route the customer piping through the cabinet and connect the flare nuts to the customer-piping side of the pipe kit.

NOTE: Pipe kit ACAC10044 is shown.

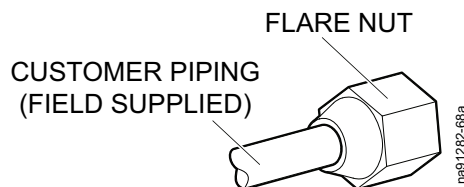


5. Remove and keep the flare nuts and remove and discard the copper plugs from the liquid line and suction line connections.

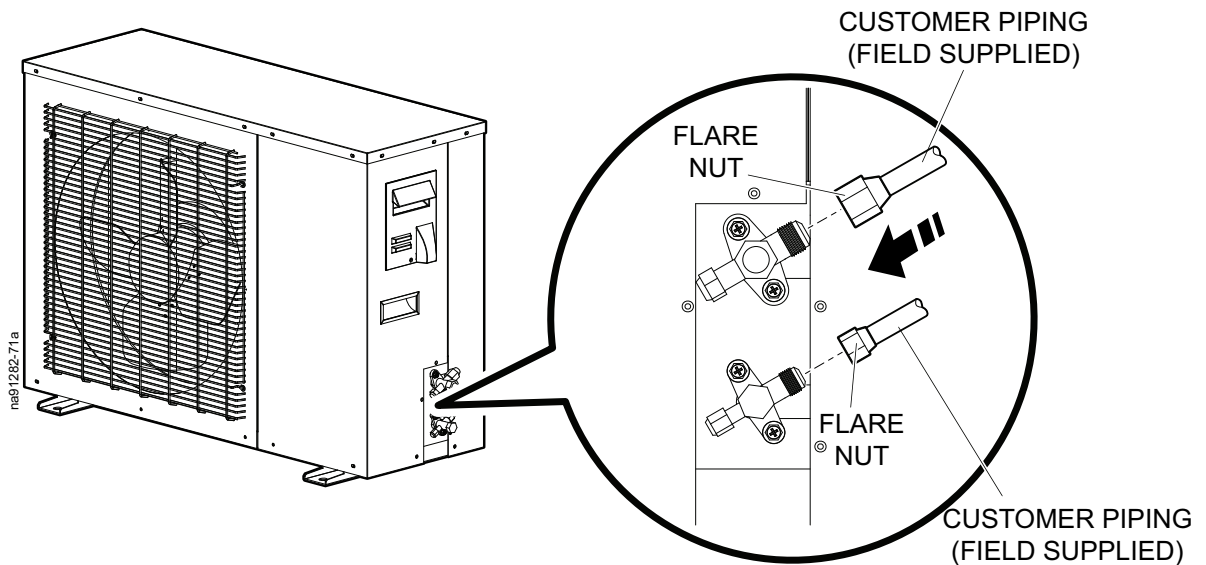


6. Use a flaring tool to connect the customer piping (field supplied) to the flare nut.

NOTE: Make sure the flare nut is on the piping before using the flaring tool on the customer piping.



7. Connect the flare nuts to the suction and liquid lines of the outdoor unit.



OD	Tightening Torque	Tightening Angle
Ø6.35 mm (1/4 in.)	14–18 N·m (10.33–13.28 ft-lb)	60°–90°
Ø9.52 mm (3/8 in.)	35–42 N·m (25.81–30.98 ft-lb)	60°–90°
Ø12.7 mm (1/2 in.)	50–57.5 N·m (36.88–42.41 ft-lb)	30°–60°
Ø15.88 mm (5/8 in.)	75–80 N·m (55.32–59.00 ft-lb)	30°–60°
Ø19.05 mm (3/4 in.)	100–140 N·m (73.76–103.26 ft-lb)	20°–35°

Brazing Copper Pipes

1. Use a neutral flame to braze and control the ratio of oxygen to acetylene ($O_2:C_2H_2=1.0-1.2$). Heat the base metal 20–25 mm (0.78–0.98 in.) from the flame core given that the highest temperature is 2–3 mm (0.7–0.11 in.) from the flame core (for reference only).
2. Fill the copper pipe with nitrogen to eliminate air. An oxide film may lead to blockage of the expansion valve, filter, or other system components.
3. Maintain the flow of nitrogen at 10–20 l (2.64–5.28 gal) per minute with a pressure regulating valve.
4. Fill with nitrogen until the pipe is completely cooled down.

Insulating Refrigerant Pipes

Insulate the refrigerant pipes with closed cell foam insulation of sufficient thickness to cover the liquid pipe and the suction line. Improper insulation materials or installation methods may cause condensation to drip from the refrigerant pipes.

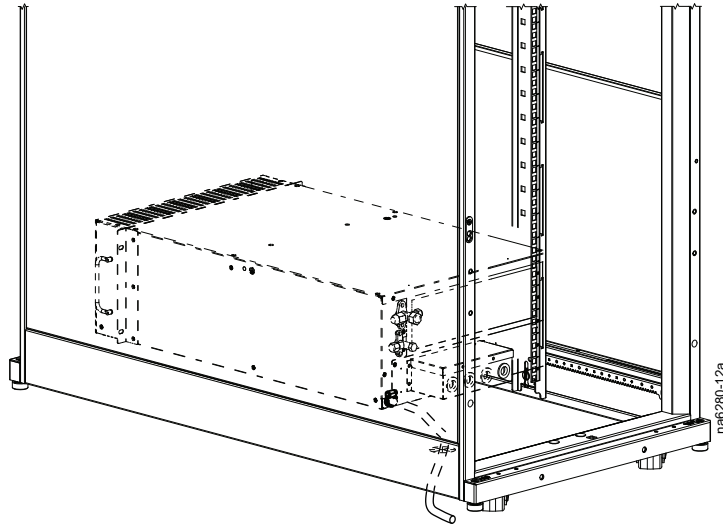
Drain Connection

Standard Single Unit

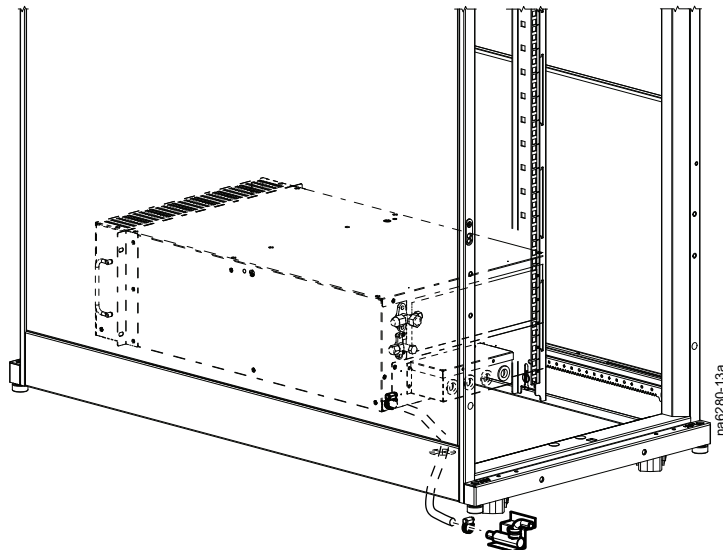
1. Attach the condensate drain hose to the drain connection of the unit with the hose clamp and route it out of the unit.

NOTE: The condensate drain hose can be cut to the desired length for the application.

NOTE: Make sure the condensate drain hose is horizontal or angled slightly downward.



2. Connect the drain hose to the copper condensate drain adapter with a hose clamp.



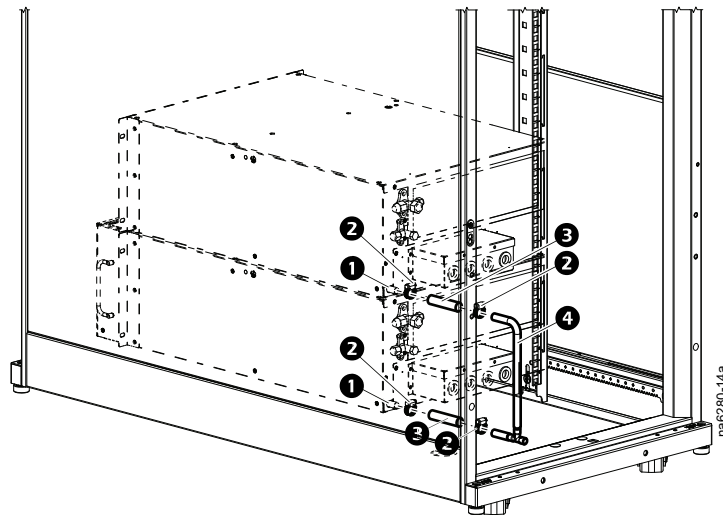
3. Fill the condensate drain adapter with 50 ml (1.7 oz) of water and make sure the adapter is at least 50 mm (2 in.) below the unit drain connection.
4. Connect the drain hose to the outlet of the condensate drain adapter and route the hose to a drain or connect it to the condensate drain pump.



See the condensate drain pump *Installation Sheet*.

Stacking Units

1. Cut two small sections about 50 mm (2 in.) in length from the condensate drain hose included with the unit.
2. Connect the condensate drain connections with the small pieces of cut hose, the drain connection pipe, and hose clamps.

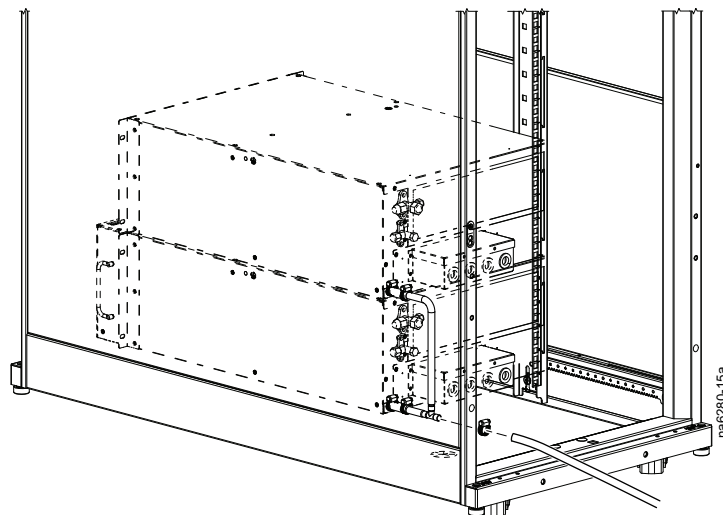


Item	Description
①	Unit condensate drain connections
②	Hose clamps
③	Hose pieces
④	Drain connection copper pipe

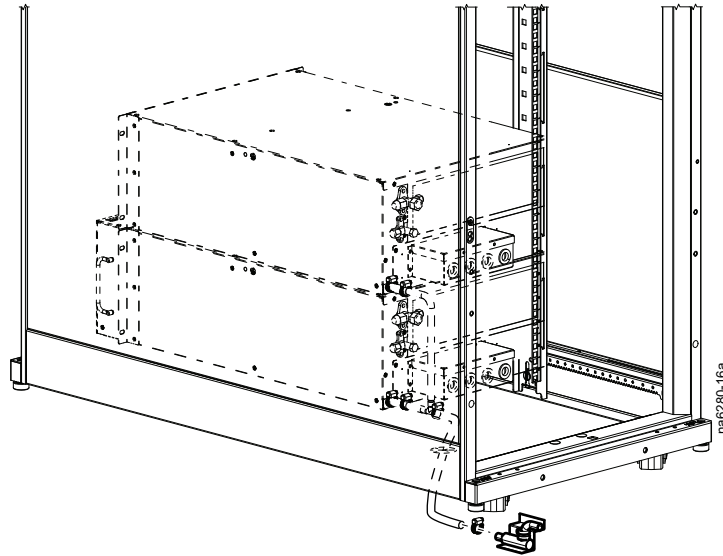
3. Attach the condensate drain hose to the drain connection pipe with a hose clamp.

NOTE: The condensate drain hose can be cut to the desired length for the application.

NOTE: Make sure the condensate drain hose is horizontal or angled slightly downward.



4. Route the drain hose out of the unit and connect it to the copper condensate drain adapter with a hose clamp.



5. Fill the condensate drain adapter with 50 ml (1.7 oz) of water and make sure the adapter is at least 50 mm (2 in.) below the unit drain connection.
6. Connect the drain hose to the outlet of the condensate drain adapter and route the hose to a drain or connect it to the condensate drain pump.



See the condensate drain pump *Installation Sheet*.

Electrical Connections

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must be installed and serviced by qualified and trained personnel only.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Replace all devices, doors, and covers before turning on power to this equipment.

Failure to follow these instructions will result in death or serious injury.

DANGER

ELECTRICAL HAZARD

Overcurrent protection for all incoming power feeds must be provided by the customer. See unit nameplate for equipment ratings.

Failure to follow these instructions will result in death or serious injury.

WARNING

- Application installation and electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

WARNING

ELECTRICAL FIRE HAZARD

Use copper conductor wiring only.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

The following electrical connections are required in the field:

- Communication lines between the indoor and outdoor units (PLTC 2 x 0.5 mm² cable)

NOTE: Communication line A and B need to be distinguished when connecting.

- Remote monitoring line of the unit

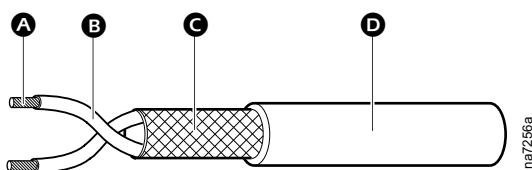
Before connecting the circuit, determine the input power voltage with a voltmeter, and turn the power off. Use PVC insulated copper wires or rubber insulated copper wires for the connecting wires of the indoor and outdoor units. The cross-sectional area must meet the maximum requirements for load of the unit and its components. Secure all wiring: Connecting wires of the indoor and outdoor units must be fixed on clips.

Wire Cross-Section Ratings

Wire Area	Maximum Current
1.0 mm ²	8 A
1.5 mm ²	11 A
2.5 mm ²	15 A
4 mm ²	20 A
6 mm ²	25 A
10 mm ²	35 A

Do not connect the same power terminal with two wires of different diameters.

When connecting to the terminal block, use a needle-shaped terminal with an insulation sleeve. Ensure the terminal connection to the wires is acceptable.



Item	Description
A	Wires (cross copper wires of over 0.5 mm ²)
B	Insulating material
C	Shielding layer (requires more than 95% shielding effectiveness)
D	Outer layer protection (PVC)

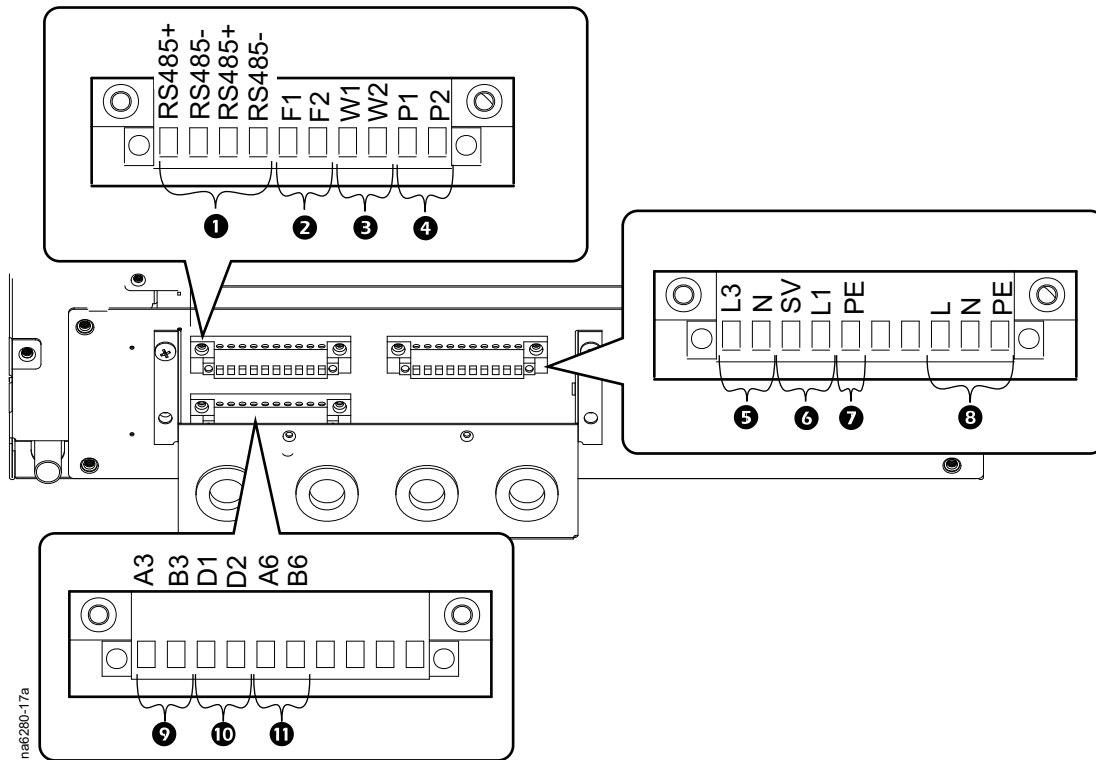
Connection Interface

Connection interfaces include the total power input interface and the remote communication interface of the unit.

Indoor Unit



See the installation sheets provided with the accessories for more information.

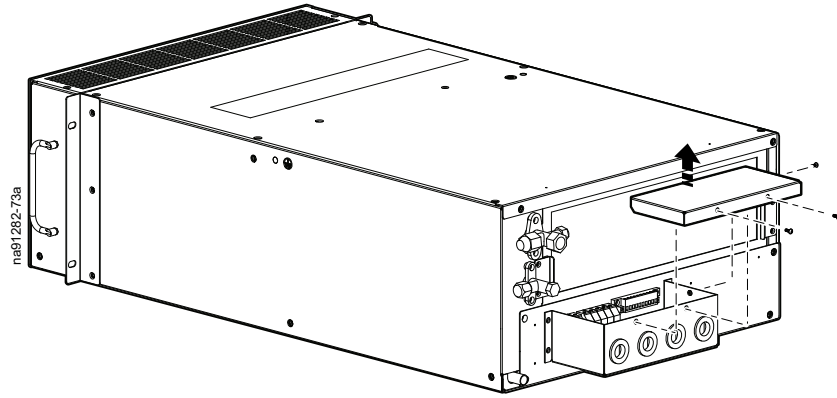


Item	Description	Item	Description
1	Controller communication connections (RS485+, RS485-, RS485+, RS485-)	7	Ground (GND)
2	Fire/smoke alarm connection (F1, F2)	8	Power supply connection (L, N, GND)
3	Leak sensor connection (W1, W2)	9	Communication connection to the outdoor unit (A3, B3)
4	Condensate drain pump communication connection (P1, P2)	10	Stacking unit address setting (D1, D2)*
5	Condensate drain pump power supply connection (L3, N)	11	Standard unit and stacking unit connection (A6,B6)**
6	Low temperature kit connection <ul style="list-style-type: none"> Solenoid valve (SV) High pressure control and heater (L1) Neutral (N) connection shared with condensate drain pump 		

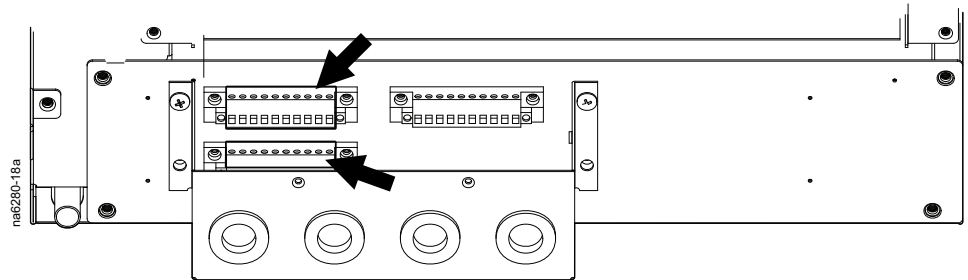
*The D1, D2 connections from the stacked unit must be connected with the wiring provided in the stacking kit. (ACAC10048).

** To use the display interface with both units in a stacking application, connect the A6, B6 terminals of the standard unit to the A6, B6 terminals of the stacked unit with the wiring provided in the stacking kit (ACAC10048).

1. Remove the cover from the connections box.

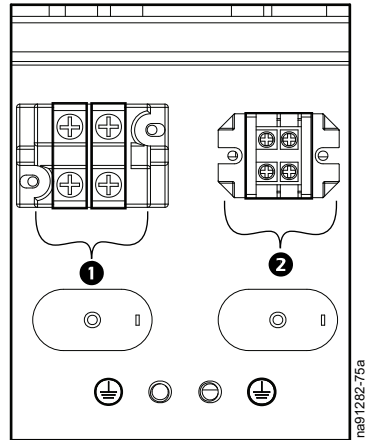


2. Remove the communication position connectors from the electrical box to make connections easier.



3. Route the power connections through the cable strain reliefs and make the connections in the unit.
4. Route the communication connections through the cable strain reliefs and make the connections to the position connectors.
5. Replace the communication position connectors.
6. Replace the cover.

Outdoor Unit



Item	Description
1	Power supply connection (L, N, GND)
2	Communication connection to indoor unit (Ain, Bin)

1. Remove the electrical panel cover.



See *Panel Removal*, page 32.

2. Route cables through the cable strain reliefs and make the unit connections.
3. Replace the electrical panel cover.

Charging the Refrigeration System

NOTICE

DAMAGE TO EQUIPMENT

Follow the procedures and tables outlined in this manual to charge the refrigerant if the piping exceeds the standard length.

Failure to follow these instructions can result in equipment damage.

Indoor and outdoor units are all provided with service valves. Connect the service valves to pipes for immediate system leak detection, vacuum pumping, and refrigerant filling procedures.

NOTE: Indoor units are not pre-charged with refrigerant in the factory.

Leak Detection

Method One

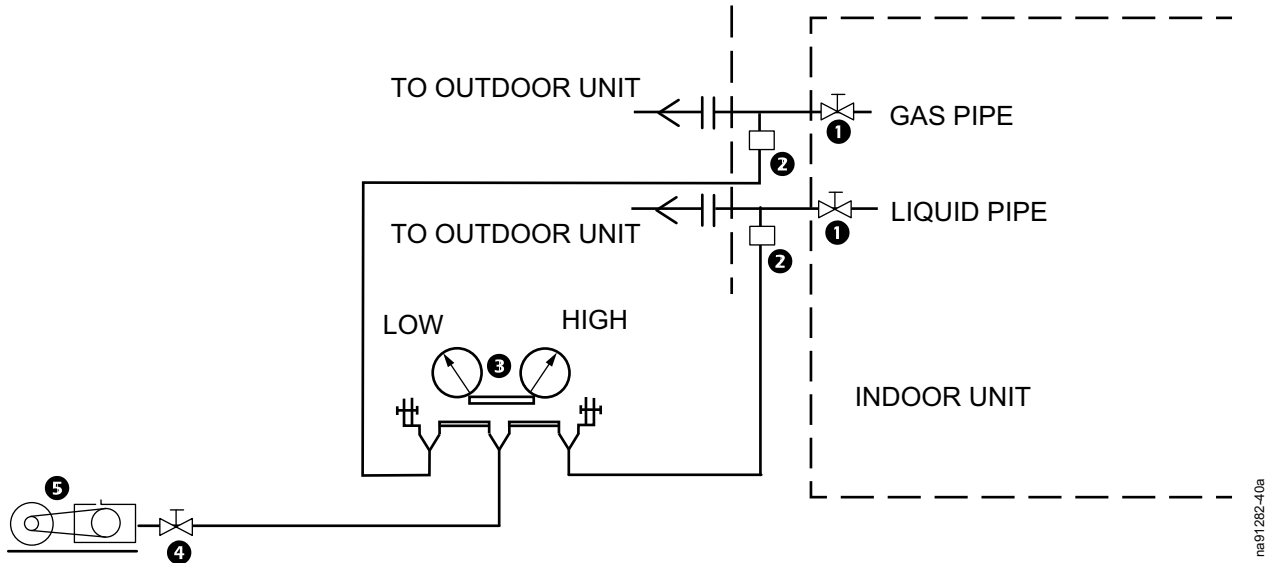
1. Fill the service valve with nitrogen to increase pressure to 2.8 MPa (406 psi) and 4.15 MPa (601 psi) for refrigerant R410A.
2. Apply soapy water at the connecting joints or welding joints of pipes for leak detection.
3. Repair leak sources and maintain the pressure for more than six hours to ensure that the pressure is not decreased.
4. The low side of the compound gauge cannot be connected to the system.

Method Two

1. Fill with the refrigerant and stop when the pressure gauge indicates 0.3 MPa (43 psi).
2. Fill with nitrogen and stop when the pressure gauge indicates 2.8 MPa (406 psi) and 4.15 MPa (601 psi) for refrigerant R410A.
3. Use an HFC electronic leak detector to detect the leak. Use the bubble gas leak testing method.

Vacuum Pumping

1. Exhaust the high pressure nitrogen in the system.
2. Connect the three flexible pipes of the compound pressure gauge to the corresponding joints of the service valve and the vacuum pump.
3. Start the vacuum pump and maintain the pressure inside the system below 650 Pa (0.09 psi). Do not start the unit until the pipeline for vacuum pumping is turned off.



Item	Description
①	Ball valve
②	Service port
③	Compound pressure gauge
④	Check valve
⑤	Vacuum pump

Calculating the Refrigerant Charge

When leaving the factory, the outdoor units that have been filled with refrigerant in the factory have enough refrigerant required to cover 5 m (49 ft) of pipe. If the actual length of the pipe exceeds 5 m (49 ft), add more refrigerant for the additional length.

Liquid Pipe Specifications – mm	R410A Refrigerant – g/m (lb/ft)	Actual Pipe Length
Ø22.23	350 (0.24)	L1
Ø19.05	260 (0.17)	L2
Ø15.88	180 (0.12)	L3
Ø12.7	120 (0.08)	L4
Ø9.52	70 (0.05)	L5
Ø6.35	45 (0.03)	L6

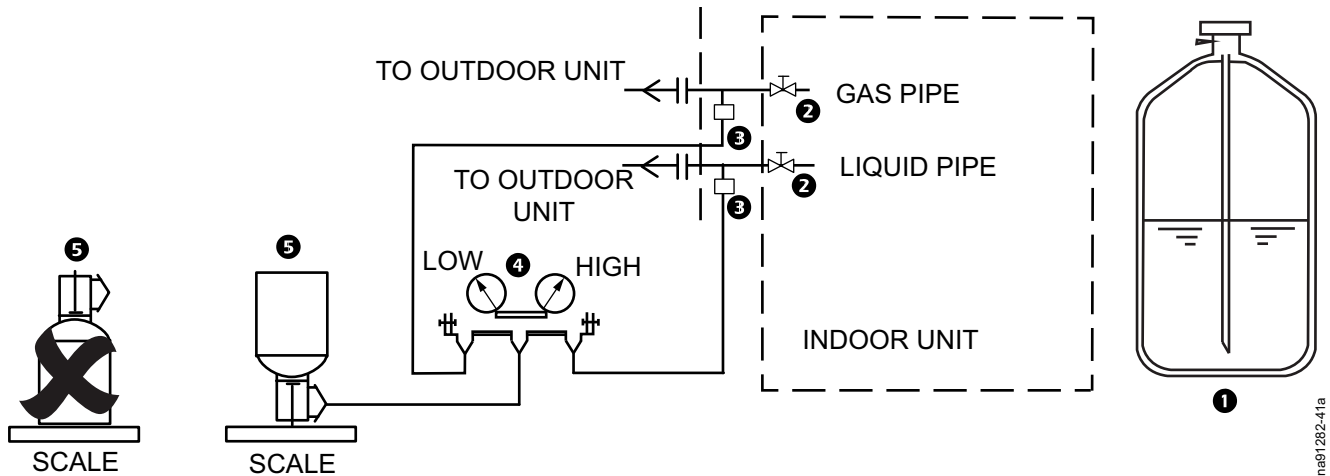
The refrigerant to be added is calculated on the basis of the length and thickness of the lengthened pipe. The formula is: refrigerant to be added (kg) = $0.35 \times L1 + 0.26 \times L2 + 0.18 \times L3 + 0.12 \times L4 + 0.07 \times L5 + 0.045 \times L6$.

If the calculated result is less than 0.1 kg, round it to 0.1 kg. For example, if the calculated result is 28.62 kg, then add 28.7 kg as the charge amount.

Charging the Refrigerant

1. Open the gas and liquid valves of the indoor and outdoor units.
2. If the filling tank for R410A does not have siphons, invert it.
3. Measure the filling amount with an electronic scale to prevent excessive filling.

Fill the gas pipe and the liquid pipe with liquid refrigerant at the same time. If the pressure is too large to fill the refrigerant, fill the refrigerant with a compressor during the test run.



Item	Description
①	Cylinder with siphon
②	Ball valve
③	Service port
④	Compound pressure gauge
⑤	Refrigerant tank

Commissioning

After installation, verify that all components are working properly and the equipment is ready to begin operation.

Start-Up Inspection Checklist

The start-up inspection ensures that the equipment is operating properly after the initial start-up. This inspection verifies that all modes of operation are working correctly and the cooling unit is ready for normal operation.

Ensure that

- The power core model of the outdoor and indoor units is correct.
- The fan and motor of the indoor unit are working normally.
- The fan and motor of the outdoor unit are working normally.
- Communication lines are correctly connected.
- The condensate pipe of the indoor unit is unblocked and the water seal installation is correct.
- The equipment is properly grounded and insulation is correct (10 megohm).
- The indoor and outdoor units have power supply in line with the nameplate, and the input voltage is not too high or too low.
- The system has no leaks.
- The main menu shows no fault after the unit is powered on.
- Parameters on the manual operator are correctly set.
- After the unit is started, the safety device does not trip.
- The air-out temperature of the unit is within its normal range.
- The air-out or air-return speed of the unit is within its normal range.
- The unit has no abnormal sound and its components have no abnormal vibration.
- The unit can operate normally by setting the switch mode and its components work accordingly.

After a Long Shutdown

If the outdoor unit is restarted after a long shutdown, energize it for at least 8 hours before restarting the compressor.

Electrical Inspection Checklist

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must be installed and serviced by qualified and trained personnel only.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Replace all devices, doors, and covers before turning on power to this equipment.

Failure to follow these instructions will result in death or serious injury.

WARNING

- Application installation and electrical service must conform to local and national electrical codes and regulations.
- The equipment must be grounded.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

The electrical inspection verifies that all electrical connections are secure and correct and that the equipment is properly grounded.

Ensure that

- The power core model of the outdoor and indoor units is proper.
- Incoming voltages match the phase and voltage rating on the nameplate.
- Electrical wiring complies with local and national codes and regulations.
- The equipment is properly grounded and insulation is correct (10 megohm).
- Electrical connections are tight, including contactors, terminal blocks, controllers, switches, relays, auxiliary devices, and field connections.
- Circuit breakers are correct and securely attached to the DIN rail.
- Communication lines are correctly connected.

Mechanical Inspection Checklist

▲ CAUTION

HAZARD TO EQUIPMENT OR PERSONNEL

- The equipment is shipped from the factory with a nitrogen holding charge. Remove the nitrogen holding charge using the service ports located on the internal refrigerant piping.
- Improperly installed piping may result in improper operation and possible damage to the cooling unit or surrounding equipment.

Failure to follow these instructions can result in injury or equipment damage.

The mechanical inspection verifies that all mechanical components and connections are secure and tight and ready for start-up.

Ensure that

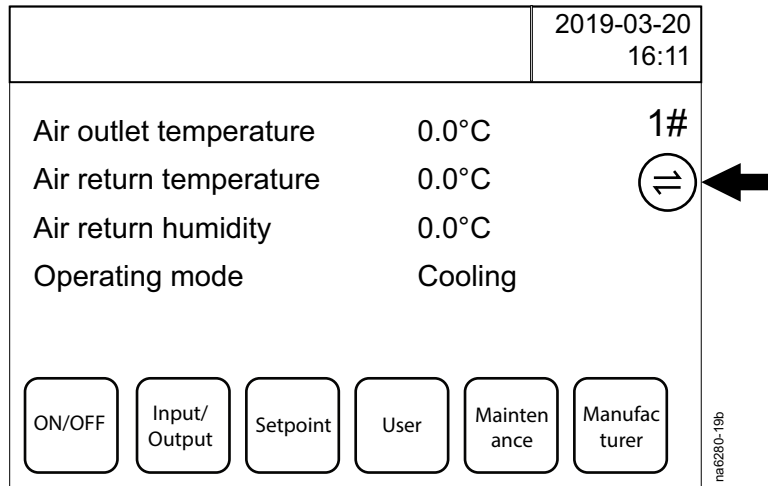
- Clearance space around the unit is appropriate.
- The fan and motor of the indoor unit are working normally.
- The fan and motor of the outdoor unit are working normally.
- The units are placed upright and fasteners used for installation are locked.
- Pipes connecting the indoor and outdoor units are installed.
- The drain pipe of the indoor unit is connected.
- The condensate pipe of the indoor unit is unblocked and the water seal installation is correct.
- All copper pipe joints are fastened.
- The system has no leaks.
- Fasteners for transport are removed.
- Transport materials, structure materials, and tools inside or around the equipment are removed.

Operation

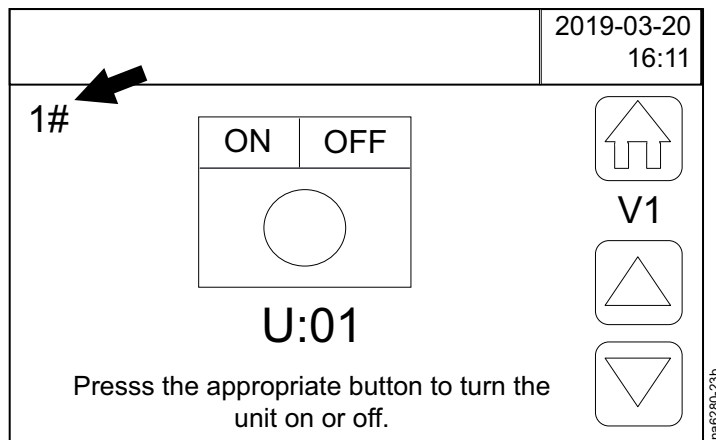
Stacking Unit Application Display

The display interface in a stacking application will be different from the standard unit.

1. The D1, D2 connections from the stacked unit must be connected to the D1, D2 connections in the standard unit with the wiring provided in the stacking kit.
2. The display firmware must updated to the stacking version.
3. Pressing the symbol below the date and time on the **Main Interface** screen will switch between the standard unit and stacked unit.



#1 is the standard unit; #2 is the stacked unit.







































IMPORTANT: With the stacking application, the fan speed cannot be higher than 8 V. This setting can be found in the **Main > Manufacturer > Parameters** menu.

Using the Display

Main Interface	
Description	Screen
<p>Press the buttons on the Main Interface screen to access the following functions:</p> <ul style="list-style-type: none"> • Alarm • ON/OFF • Input/Output (Operating Parameters) • Setpoint • User • Maintenance • Manufacturer 	<p>The screenshot shows a top status bar with the date '2019-03-20' and time '16:11'. Below this, four rows of data are displayed: 'Air outlet temperature 0.0°C', 'Air return temperature 0.0°C', 'Air return humidity 0.0°C', and 'Operating mode Refrigeration/cooling'. At the bottom, there is a row of six buttons: 'ON/OFF', 'Input/Output', 'Setpoint', 'User', 'Maintenance', and 'Manufacturer'.</p>

Turning the Unit ON/OFF	
Description	Screen
<p>Path: Main Interface > ON/OFF</p>	<p>The screenshot shows a top status bar with the date '2019-03-20' and time '16:11'. In the center, there are two buttons labeled 'ON' and 'OFF' above a large circular indicator. Below the indicator is the label 'U:01'. At the bottom, a text prompt reads 'Press the appropriate button to turn the unit on or off.' On the right side, there are three navigation icons: a home icon, an up arrow, and a down arrow, with the label 'V1' between the up and down arrows.</p>

Operating Parameters—IDU Controller	
Description	Screen
<p>Path: Main Interface > Input/Output > IDU Controller Operating Parameters</p>	<p>The screenshot shows a top status bar with the date '2019-03-20' and time '16:11'. The main area contains four buttons: 'IDU Controller Operating Parameters', 'ODU Controller Operating Parameters', 'Historical Data', and 'Historical Alarms'. On the right side, there are three navigation icons: a home icon, an up arrow, and a down arrow.</p>
<p>This screen provides information about the A01—EC fan and the IDU expansion valve steps.</p>	<p>The screenshot shows a top status bar with the date '2019-03-20' and time '16:11'. Below this, two rows of data are displayed: 'A01-EC fan 0.0 V' and 'IDU expansion valve steps 0'. At the bottom, there are three navigation icons: a home icon, an up arrow, and a down arrow, with the label 'I1' between the up and down arrows.</p>




























Operating Parameters–IDU Controller																					
Description	Screen																				
Digital input: ON-No alarm OFF-Alarm	<table border="1" style="width: 100%;"> <tr> <td style="text-align: right;">2019-03-20 16:11</td> <td></td> </tr> <tr> <td>Digital input</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>Fire alarm / Remote ON/OFF</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>High level switch of pump</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>Water on the floor</td> <td style="text-align: right;">ON</td> </tr> <tr> <td colspan="2" style="text-align: center;">I2</td> </tr> <tr> <td colspan="2" style="text-align: center;">    </td> </tr> </table> <small style="float: right;">img1202-44a</small>	2019-03-20 16:11		Digital input	ON	Fire alarm / Remote ON/OFF	ON	High level switch of pump	ON	Water on the floor	ON	I2		  							
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Temperature and humidity parameters	<table border="1" style="width: 100%;"> <tr> <td style="text-align: right;">2019-03-20 16:11</td> <td></td> </tr> <tr> <td>Air out temperature</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Coil Inlet temperature</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Coil outlet temperature</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Air return temperature</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Air return humidity</td> <td></td> </tr> <tr> <td colspan="2" style="text-align: center;">I3</td> </tr> <tr> <td colspan="2" style="text-align: center;">    </td> </tr> </table> <small style="float: right;">img1202-45a</small>	2019-03-20 16:11		Air out temperature	°C	Coil Inlet temperature	°C	Coil outlet temperature	°C	Air return temperature	°C	Air return humidity		I3		  					
2019-03-20 16:11																					
Air out temperature	°C																				
Coil Inlet temperature	°C																				
Coil outlet temperature	°C																				
Air return temperature	°C																				
Air return humidity																					
I3																					
  																					
Parameters for alarms, pump, heater, fan, and low temperature kit	<table border="1" style="width: 100%;"> <tr> <td style="text-align: right;">2019-03-20 16:11</td> <td></td> </tr> <tr> <td>Digital input</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>Serious alarm</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>Common alarm</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>Condensation pump</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>PTC heater</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>IDU fan</td> <td style="text-align: right;">ON</td> </tr> <tr> <td>SV of low temperature kit</td> <td style="text-align: right;">ON</td> </tr> <tr> <td colspan="2" style="text-align: center;">I4</td> </tr> <tr> <td colspan="2" style="text-align: center;">    </td> </tr> </table> <small style="float: right;">img1202-46a</small>	2019-03-20 16:11		Digital input	ON	Serious alarm	ON	Common alarm	ON	Condensation pump	ON	PTC heater	ON	IDU fan	ON	SV of low temperature kit	ON	I4		  	
2019-03-20 16:11																					
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IDU fan	ON																				
SV of low temperature kit	ON																				
I4																					
  																					
Fan and compressor run time	<table border="1" style="width: 100%;"> <tr> <td style="text-align: right;">2019-03-20 16:11</td> <td></td> </tr> <tr> <td>Main fan</td> <td style="text-align: right;">0.0 h</td> </tr> <tr> <td>#1 Compressor runtimes</td> <td style="text-align: right;">0.0 h</td> </tr> <tr> <td colspan="2" style="text-align: center;">I5</td> </tr> <tr> <td colspan="2" style="text-align: center;">    </td> </tr> </table> <small style="float: right;">img1202-47a</small>	2019-03-20 16:11		Main fan	0.0 h	#1 Compressor runtimes	0.0 h	I5		  											
2019-03-20 16:11																					
Main fan	0.0 h																				
#1 Compressor runtimes	0.0 h																				
I5																					
  																					

Operating Parameters–ODU Controller	
Description	Screen
<p>Path: Main Interface > Input/Output > ODU Controller Operating Parameters</p>	
<p>Temperature parameters</p>	

Operating Parameters–Historical Data	
Description	Screen
<p>Path: Main Interface > Input/Output > Historical Data</p>	
<p>Historical Humidity Data</p>	





































Operating Parameters–Historical Alarms	
Description	Screen
<p>Path: Main Interface > Input/Output > Historical Alarms</p>	
<p>Path: Main Interface > Input/Output > Historical Alarms > Alarm Press and hold Clear Alarm to clear alarms.</p>	

Setpoint											
Description	Screen										
<p>Path: Main Interface > Setpoint The password for the Setpoint screen is 1000.</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>Air return temperature</td> <td>35°C</td> </tr> <tr> <td>Air outlet temperature</td> <td>22°C</td> </tr> <tr> <td>Minimum humidity</td> <td>15°C</td> </tr> <tr> <td>Maximum humidity</td> <td>80°C</td> </tr> </tbody> </table>	Item	Default	Air return temperature	35°C	Air outlet temperature	22°C	Minimum humidity	15°C	Maximum humidity	80°C	
Item	Default										
Air return temperature	35°C										
Air outlet temperature	22°C										
Minimum humidity	15°C										
Maximum humidity	80°C										

User																																									
Description	Screen																																								
<p>Path: Main > User > User Password The default user password is 1000. Password error displays if a wrong password is entered. Enter the password within 5 seconds after the password error.</p>	<div style="border: 1px solid black; padding: 10px;"> <p>Please enter your password</p> <p>***</p> <p>Password error.</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> Confirm Cancel </div> </div> <div style="text-align: right; font-size: small; margin-top: 5px;">na91282-19a</div>																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Item</th> <th style="width: 30%;">Default</th> <th style="width: 40%;">Option</th> </tr> </thead> <tbody> <tr> <td>Language</td> <td>Chinese</td> <td>English</td> </tr> <tr> <td>PTC Heater</td> <td>YES</td> <td>NO</td> </tr> <tr> <td>Condensation pump</td> <td>NO</td> <td>YES</td> </tr> <tr> <td>Condensation pump alarm</td> <td>UNIT OFF</td> <td>ALARM</td> </tr> </tbody> </table>	Item	Default	Option	Language	Chinese	English	PTC Heater	YES	NO	Condensation pump	NO	YES	Condensation pump alarm	UNIT OFF	ALARM	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; font-size: x-small;">2019-03-20 16:11</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Language</td> <td style="width: 30%;">English</td> <td style="width: 40%; text-align: center;"></td> </tr> <tr> <td>PTC Heater</td> <td>YES</td> <td style="text-align: center;"></td> </tr> <tr> <td>Condensation pump</td> <td>YES</td> <td style="text-align: center;">P1</td> </tr> <tr> <td>Condensation pump alarm</td> <td>UNIT OFF</td> <td style="text-align: center;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"></td> </tr> </table> </div> <div style="text-align: right; font-size: x-small; margin-top: 5px;">na91282-20a</div>		Language	English		PTC Heater	YES		Condensation pump	YES	P1	Condensation pump alarm	UNIT OFF													
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Item	Default	Range																																							
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User			
Description			Screen
Item	Default	Range	
Air outlet temperature limit			2019-03-20 16:11
High temperature	45°C	0–50°C	Air return temperature alarm High temperature 45°C
Return humidity alarm			Return humidity alarm Low humidity 15% P3
Low humidity	15%	0–95%	High humidity 95%
High humidity	95%	0–100%	Air outlet temperature alarm Low temperature 8°C
Air outlet temperature alarm			High temperature 32°C
Low temperature	8°C	0–13°C	
High temperature	32°C	0–25°C	
Item	Default	Range	
BMS control	YES	NO	2019-03-20 16:11
Modbus address	0	0–255	BMS control YES
Communication speed	9600	4800/9600/19200	Modbus address 0 P4
New user password	1000	0–65535	Communication speed 9600
			New user password 0
			Date Time
			Touch Screen Sound ON/OFF
Press Date Time to show the date and time.			
Press Touch Screen Sound to turn the sound on or off.			

Maintenance			
Description			Screen
Path: Main > Maintenance			2019-03-20 16:11
IDU board version: SE_IDC_EN1.3 ODU board version: SE_ODC_EN1.3 HMI version: SE_HMIC_EN 1.3			
Item	Default	Range	F1
Outlet temperature for unit off	19°C	14–24°C	Outlet temperature off 19°C
			IDU board version SE_IDC_EN 1.3
			ODU board version SE_ODC_EN 1.3
			HMI version SE_HMIC_EN 1.3
Select YES for manual operation.			
Select Manual and ON from the drop-down lists.			
			2019-03-20 16:11
			Manual operation NO
			Serious alarm Auto OFF F2
			Common alarm Auto OFF
			Condensation pump Auto OFF
			PTC heater Auto OFF
			IDU fan Auto OFF
			SV low temperature kit Auto OFF

Maintenance																								
Description	Screen																							
IDU maintenance information	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid black; margin-bottom: 5px;">2019-03-20 16:11</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">IDU fan speed</td> <td style="width: 10%;">Auto</td> <td style="width: 10%;">0.0V</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">  F3   </td> </tr> <tr> <td>IDU EEV steps</td> <td>Auto</td> <td>0</td> </tr> </table> </div>	IDU fan speed	Auto	0.0V	 F3  	IDU EEV steps	Auto	0																
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IDU maintenance information for temperature and humidity	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid black; margin-bottom: 5px;">2019-03-20 16:11</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3">Probe setting</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">  F5   </td> </tr> <tr> <td>Air outlet temperature</td> <td></td> <td>0.0°C</td> </tr> <tr> <td>Coil inlet temperature</td> <td></td> <td>0.0°C</td> <td></td> </tr> <tr> <td>Coil outlet temperature</td> <td></td> <td>0.0°C</td> <td></td> </tr> <tr> <td>Air return temperature</td> <td></td> <td>0.0°C</td> <td></td> </tr> <tr> <td>Air return humidity</td> <td></td> <td>0.0%</td> <td></td> </tr> </table> </div>	Probe setting			 F5  	Air outlet temperature		0.0°C	Coil inlet temperature		0.0°C		Coil outlet temperature		0.0°C		Air return temperature		0.0°C		Air return humidity		0.0%	
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Press the appropriate buttons to clear and download alarm or date.	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid black; margin-bottom: 5px;">2019-03-20 16:11</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">New maintenance password</td> <td style="width: 10%;">0</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">  F6   </td> </tr> <tr> <td colspan="2"> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Clear History Alarm</div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Clear History Date</div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Download Alarm to U Disk</div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Download Date to U Disk</div> </div> </td> <td></td> </tr> </table> </div>	New maintenance password	0	 F6  	<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Clear History Alarm</div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Clear History Date</div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Download Alarm to U Disk</div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;">Download Date to U Disk</div> </div>																			
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Maintenance

Preventive Maintenance

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- This equipment must be installed and serviced by qualified and trained personnel only.
- Turn off all power supplying this equipment before working on or inside the equipment.
- Replace all devices, doors, and covers before turning on power to this equipment.

Failure to follow these instructions will result in death or serious injury.

WARNING

HAZARD TO EQUIPMENT OR PERSONNEL

All work must be performed by Schneider Electric qualified and trained personnel.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Perform the following maintenance check list.

Prepared By: _____

Model Number: _____

Serial Number: _____

Date: _____

Electrical Maintenance

Perform visual inspection and processing of electrical connections.

-
- Perform a total electrical insulation test. Find the non-conforming contacts for processing. Disconnect the control switch or air switch during the test to avoid any damage to the control device from high voltage.
-
- Statically detect whether each contactor is pulled in flexibly without jamming.
-
- Remove dust from the electrical and control components with a brush or dry compressed air.
-
- Check for arcing or burn marks on the contacts. Replace the contactor if necessary.
-
- Fasten each electrical connection terminal.
-
- Check whether the quick connector is in good contact and replace the terminal if necessary.
-
- Check the appearance of the adapter and test its output voltage for the indoor and outdoor units.
-
- Check the output connection from the control interface board to each contactor and the input connection of the high and low voltage switches, and filter plug switch. Replace the plug terminal immediately if it is loose or has bad contacts.
-
- Replace the control fuse (or air switch), control board, and other electrical components if necessary.
-

Control Maintenance

Perform visual inspection and simple function testing of the control segment for processing.

-
- Check for obvious aging on the surface of the control interface board and the display control board.
-
- Remove the dust and dirt on the control components and control boards with a brush and an electronic dedusting agent.
-
- Check and fasten the I/O plug interface of the control interface board, including the connection between the display control board and the control interface board and the connection between the control interface board and the temperature and humidity sensor board.
-
- Check the specifications and aging of the control wire and the power wire and replace if necessary.
-
- Check and calibrate the readings of the temperature and humidity sensor with an instrument of high measuring accuracy. Select relative humidity control as the humidity control mode.
-
- Clean the air filter net. Place on a hard surface and gently tap to remove heavy particles. If necessary, wash the filter with a neutral detergent in warm water and dry it before re-installation.
-
- Use a vacuum cleaner and a nylon brush to clean the dust and other debris on the surface of the heat exchanger. If a compressed air source is available, use the compressor to spray the dust off the surface.
-
- Regularly check the motor, impeller, and other components of the fan. If necessary, consult the manufacturer for more details.
-
- Before operating the unit, ensure the drainage pipe is not blocked.
-

Worldwide Customer Support

Customer support for this or any other product is available at no charge in any of the following ways:

- Visit the Schneider Electric Web site to access documents in the Schneider Electric Knowledge Base and to submit customer support requests.

- **www.schneider-electric.com** (Corporate Headquarters)

Connect to localized Schneider Electric Web sites for specific countries, each of which provides customer support information.

- **www.schneider-electric.com/support/**

Global support searching Schneider Electric Knowledge Base and using esupport.

- Contact the Schneider Electric Customer Support Center by telephone or e-mail.

Local, country-specific centers: go to *[www.schneider-electric.com/support/](http://www.schneider-electric.com/support/contact)*

www.schneider-electric.com > **Support** > **Operations around the world** for contact information.

For information on how to obtain local customer support, contact the representative or other distributors from whom you purchased your product.

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www.schneider-electric.com

As standards, specifications, and design change from time to time,
please ask for confirmation of the information given in this publication.

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