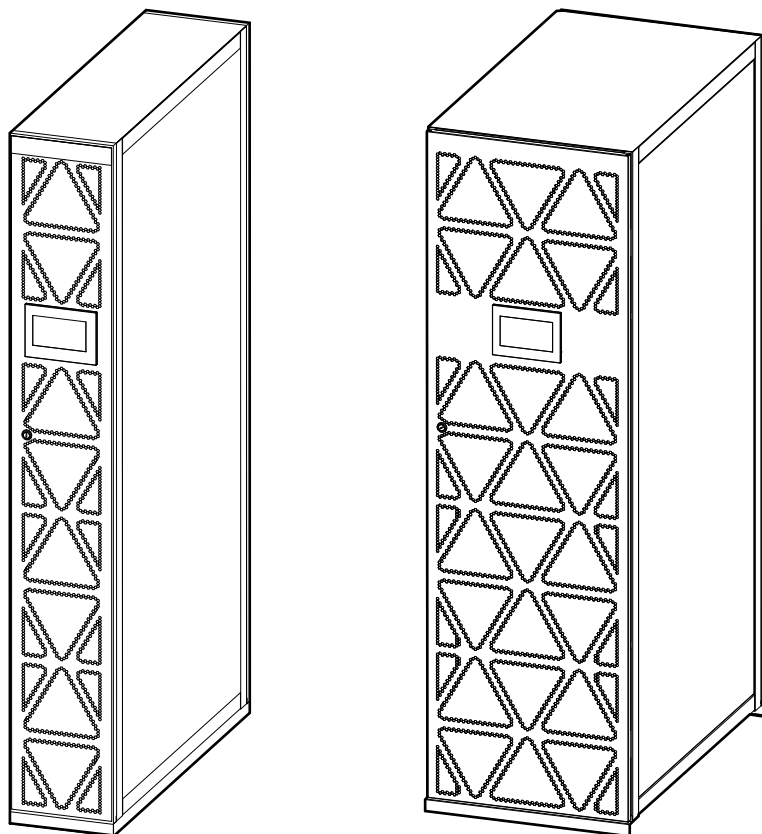


Easy Cooling Row Chilled Water

Installation

ERC301BS1CGS, ERC301BD1CPS, ERC301BD1HPS, ERC601DS1CGS, ERC601DD1CPS,
ERC601DD1HPS

01/2020



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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 Precautions

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- The cooling unit must be installed, operated, serviced, and maintained only by qualified personnel.
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Turn off all power supplying the cooling unit before working on the cooling unit.
- All electrical work must be performed by licensed electricians.
- Follow lockout/tagout procedures.
- Remove watches, rings, and other metal object before working on the cooling unit.

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

WARNING

MOVING PARTS

- Keep hands and clothing away from moving parts. Check the cooling unit for foreign objects before closing the doors and starting up the cooling unit.
- Do not remove rear panels during operation.

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

WARNING

TIP HAZARD

- Two persons are required for any movement of the cooling unit.
- Always push, pull, or turn while facing the front and rear of this equipment.
- Slowly move this equipment across uneven surfaces or door thresholds.
- Lower the leveling feet when the equipment is at rest.
- Lower the leveling feet and attach the joining brackets to adjacent racks when the equipment is in its final position.

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

Receiving

External Inspection

The equipment has been tested and inspected for quality assurance before shipment from Schneider Electric. When the shipment arrives, inspect the shipping material for any signs of damage or mishandling.

Verify that all parts are received and that the cooling unit is of the correct type and size, and the voltage is as specified in the order confirmation. Report any missing items to the shipping company and to Schneider Electric immediately.

Filing a claim: If damage is identified on receipt of the cooling unit, note the damage on the bill of lading and file a damage claim with the shipping company. Contact Schneider Electric for information about filing a claim with the shipping company. The shipping claim must be filed at the receiving end of the delivery.

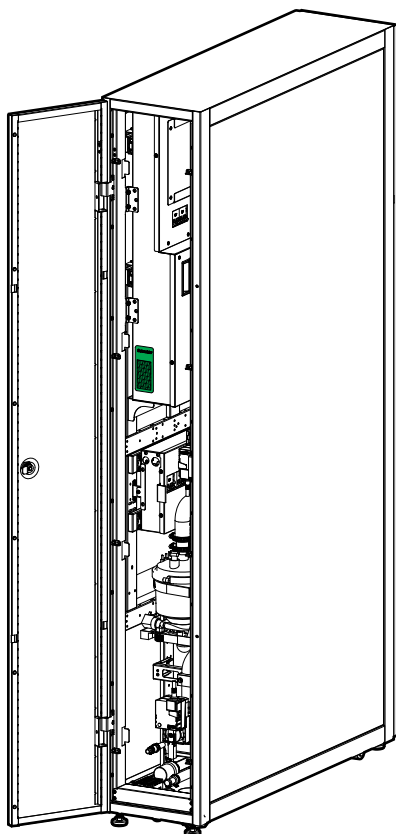
Store the Cooling Unit

⚠ CAUTION
EQUIPMENT DAMAGE Do not store the cooling unit uncovered and exposed to possible damage from the environment. This will void the factory warranty. Failure to follow these instructions can result in injury or equipment damage.

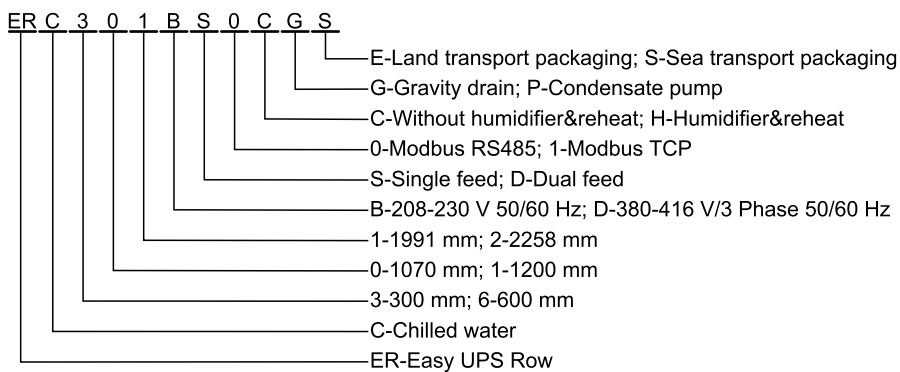
If the cooling unit is to be stored prior to installation, it should be stored in a cool, dry, well-ventilated location that is protected against rain, splashing water, and chemical agents. The cooling unit must be covered with a tarpaulin or plastic wrapper to protect it against dust, dirt, paint, or other foreign materials.

Model Identification

Location of Nameplate on Rear of Cooling Unit



The model number can be found on the nameplate located on the electrical box of the cooling unit.



Verify that the received equipment is of the correct type and voltage:

Model	Description
ERC301	220~230 V~1Ph~50/60 Hz
ERC601	380~416 V~3Ph~50/60 Hz

Technical Specifications

Electrical

The connections can be made through the top or bottom of the cooling unit.

⚠️ ⚠️ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Turn off all power supplying the cooling unit before working on the cooling unit.
- All electrical work must be performed by licensed electricians.
- Follow lockout/tagout procedures.
- Make electrical connections in accordance with all local and national codes.
- Do not wear jewelry when working with electrical equipment.

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

Model	Voltage	Frequency (Hz)	Full Load (A)	Cable Size (mm ²)
ERC301BS1CGS	208~230 V	50/60 Hz	10.5 @ 220 V	2.5
ERC301BD1CPS	208~230 V	50/60 Hz	10.5 @ 220 V	2.5
ERC301BD1HPS	208~230 V	50/60 Hz	30.0 @ 220 V	6.0
ERC601DS1CGS	380~416 V	50/60 Hz	6.0 @ 380 V	1.0
ERC601DD1CPS	380~416 V	50/60 Hz	6.0 @ 380 V	1.0
ERC601DD1HPS	380~416 V	50/60 Hz	19.0 @ 380 V	4.0

Above data is based on maximum operating conditions.

The supply cord must be a rubber sheathed cord (at least 60245 IEC 53) or a standard polyvinyl chloride sheathed cord (code designation 60227 IEC 53).

Consult local and national codes for cable size, conduit requirements, and overload protection.

NOTE: ERC601 cooling units comply with IEC61000-3-12 provided that the short-circuit power S_{sc} is greater than or equal to 120 at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power S_{sc} greater than or equal to $R_{sec}120$.

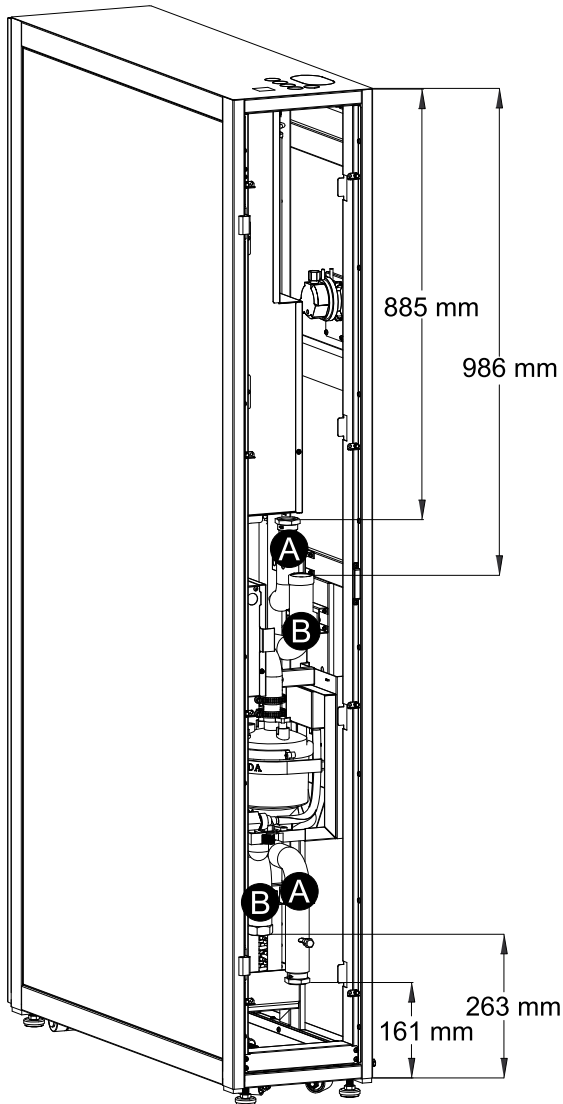
NOTE: For dual mains systems, when supplied by the bypass source, humidification and heating features are not supported.

Chilled Water Inlet and Outlet Piping

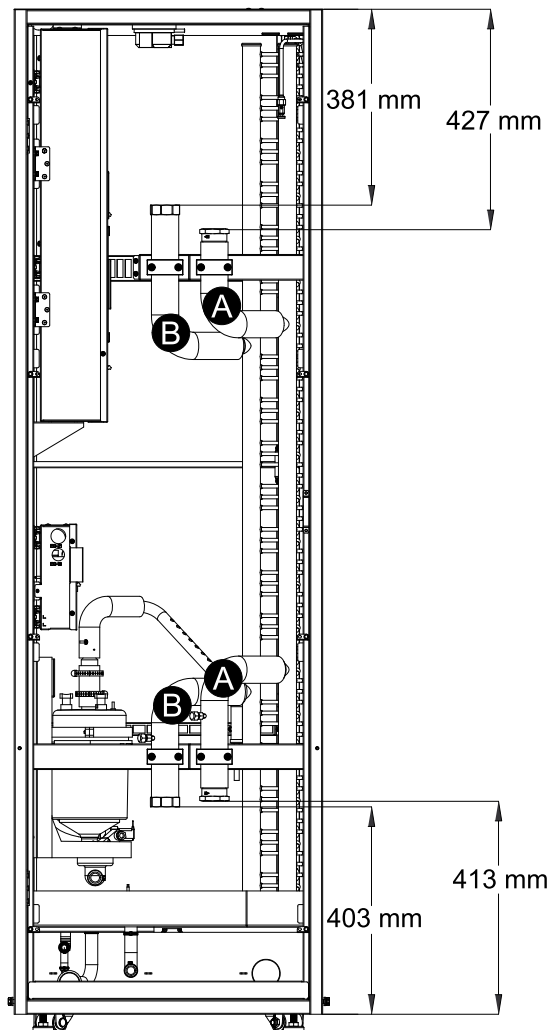
Length of the Piping

- A. Water inlet
- B. Water outlet

ERC301



ERC601



The piping connections can be made through the top or bottom of the cooling unit.

Model	Type	Size	Torque Nm
ERC301	Threaded ring seal ¹	G1-in OD	35
ERC601	Threaded ring seal ¹	G1 1/4-in OD	40

1. Use the provided Teflon ring to prevent leakage.

Room Preparation

Room Requirement

- Consider the ease of entry for the cooling unit, floor loading factors, and accessibility to piping and wiring, during the design of the data center.
- Seal the room with a vapor barrier to minimize moisture infiltration. Polyethylene film is recommended for ceiling and wall applications. Apply rubber or plastic-based paints to concrete walls and floors.
- Insulate the room to minimize the influence of exterior heat loads. Reduce the amount of fresh air to comply with local and national codes and regulations. During summer and winter, the fresh air imposes extreme load variation on the cooling unit and hence can cause increased operating costs.

Environment

NOTE: The cooling unit must not be stored more than six months. If the storage time is exceeded, the cooling unit must be re-calibrated.

	Operating	Storage
Temperature	15-45 °C	-20-70 °C
Relative humidity	30-70%	5-85%
Elevation ²	<1000 m	<1000 m
Ambient conditions	Computer room, Environment Grade A	Indoor in a clean area free from dust
Water supply temperature ³	5-20 °C	

Chilled Water Quality

NOTICE	
RISK OF EQUIPMENT DAMAGE	
<ul style="list-style-type: none"> • Do not use softened water. • Do not use well water, industrial water, or water from a refrigeration circuit, which can be contaminated with chemicals or biological bacteria. • Do not add disinfectants or corrosion inhibitors to the water. 	
Failure to follow these instructions can result in equipment damage.	

The quality of chilled water must comply with the local water quality standards or must be higher than the value shown in the following table.

Item	Symbol	Range
PH value	PH	7–8.5
Special conductivity at 20 °C	$\sigma R, 20\text{ }^{\circ}\text{C}$	125–1250 $\mu\text{S}/\text{cm}$
Total hardness	TH	60–400 mg/l CaCO_3^4
Temporary hardness		40–300 mg/l CaCO_3^5
Total dissolved solid	TDS	Statistics: $\cong 0.93 \cdot \sigma R, 20\text{ }^{\circ}\text{C}$; $R180 \cong 0.65 \cdot \sigma R, 20\text{ }^{\circ}\text{C}$
Dry residue at 180 °C	R_{180}	Statistics: $\cong 0.93 \cdot \sigma R, 20\text{ }^{\circ}\text{C}$; $R180 \cong 0.65 \cdot \sigma R, 20\text{ }^{\circ}\text{C}$

2. Contact the manufacturer if the elevation is > 1000 m.
 3. An alarm will be triggered if the water supply temperature is outside these limits.
 4. Conations not less than 200% chlorine.
 5. Conations not less than 300% chlorine

Item	Symbol	Range
Fe+Mn		0–0.2 mg/l Fe+Mn
Chloride		0–30 ppm Cl
Silicon		0–20 mg/l SiO ₂
Chlorine		0–0.2 mg/l Cl ₂
CaSO ₄		0–100 mg/l CaSO ₄

Fans in the Cooling Unit

	Number of Fans	Air Volume 1/s	Fan Motor w
ERC301	6	1388	950
ERC601	2	3055	2300

Air Distribution

The cooling unit distributes air in a back-to-front discharge pattern, removing hot air from a hot aisle and distributing cool air into a cold aisle.

NOTE: The cooling unit is designed for free air discharge and can be used with the rack air containment system or hot aisle containment system. The cooling unit is not intended to be connected to a duct system.

Weights and Dimensions

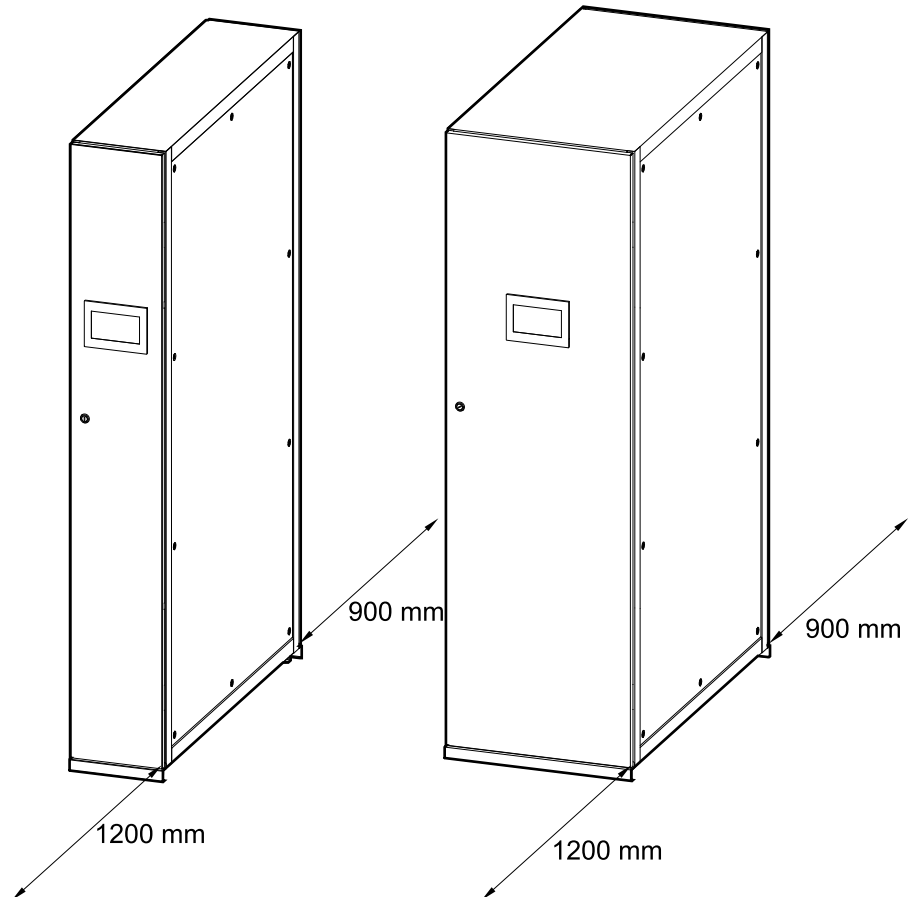
Commercial Reference	Shipping Weight kg	Weight kg	Height mm	Width mm	Depth mm
ERC301BS1CGS	207.5	172	1991	300	1070
ERC301BD1CPS	207.5	172	1991	300	1070
ERC301BD1HPS	217.5	182	1991	300	1070
ERC601DS1CGS	257.5	222	1991	600	1070
ERC601DD1CPS	257.5	222	1991	600	1070
ERC601DD1HPS	267.5	232	1991	600	1070

Clearance

A minimum of 900 mm free space is required in front of and behind the cooling unit for service. If the cooling units is placed inside a row, 1200 mm free space is required in front of the cooling unit to allow for wheeling out the cooling unit.

NOTE:

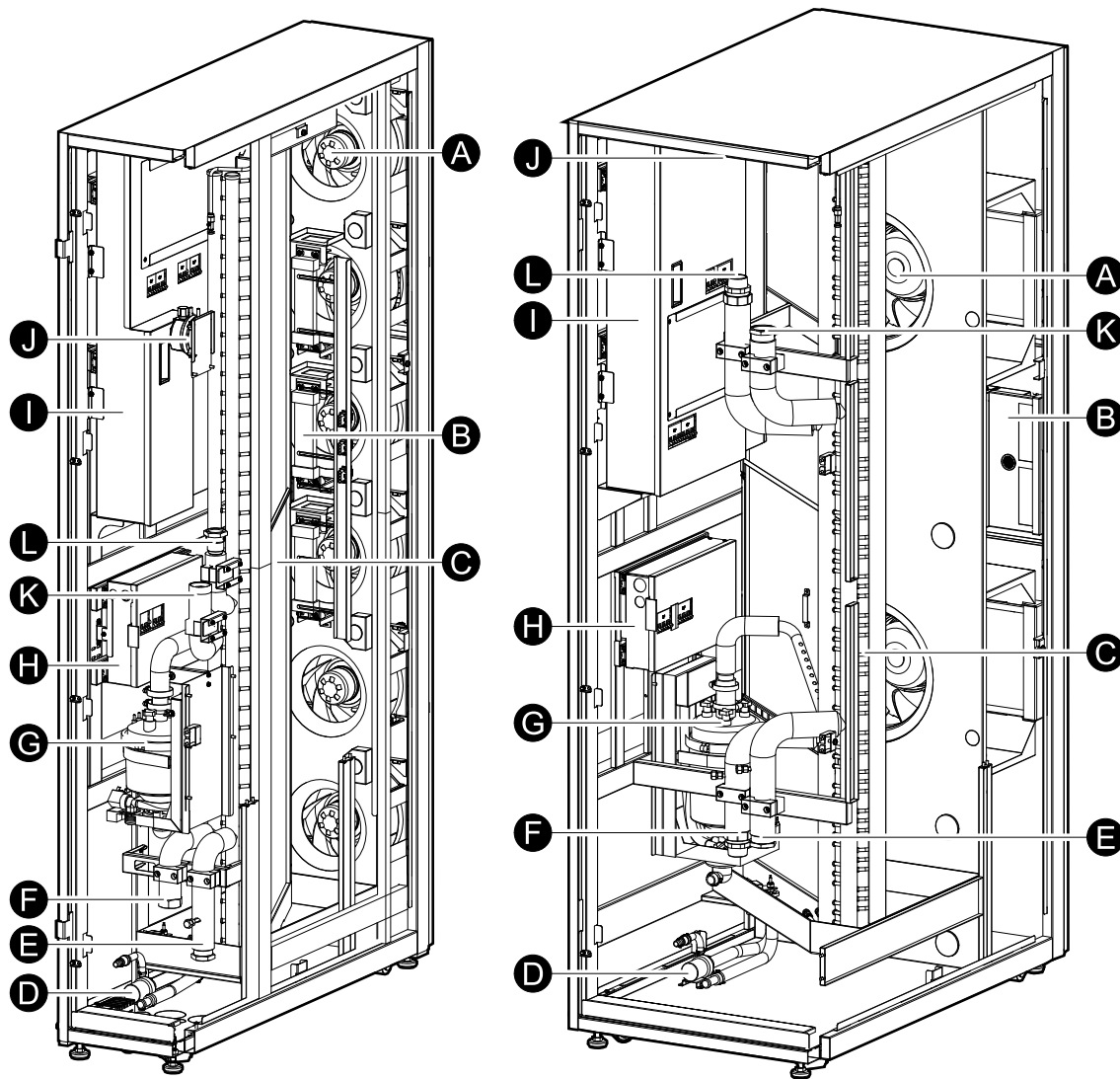
- All required periodic maintenance can be performed from the front or rear of the cooling unit.
- Consult local and national codes and regulations for additional service access requirements.



Overview

Overview of Internal Components

Rear View of Cooling Units



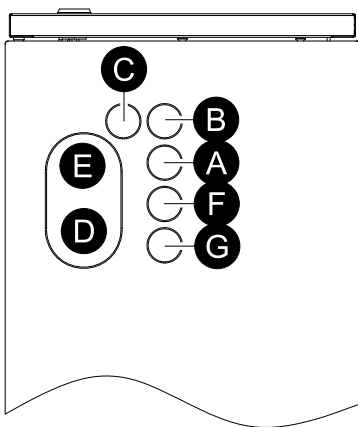
- A. Supply fan
- B. PTC electric heater
- C. Heat exchanger
- D. Discharge pump for condensation water
- E. Bottom water inlet pipe
- F. Bottom water outlet pipe
- G. Electrode humidifier
- H. Field wiring box
- I. Electronic components box
- J. Air pressure differential switch
- K. Top water inlet pipe
- L. Top water outlet pipe

Overview of Access Locations for Cables and Piping

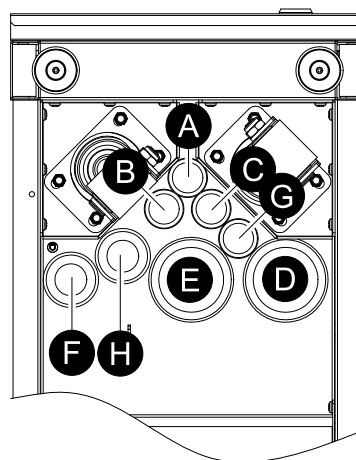
- A. Input power cables
- B. Bypass power cables
- C. Signal cables
- D. Water inlet piping
- E. Water outlet piping
- F. Water discharge piping
- G. Water charge piping
- H. Gravity drainage piping

ERC301

Access through Top

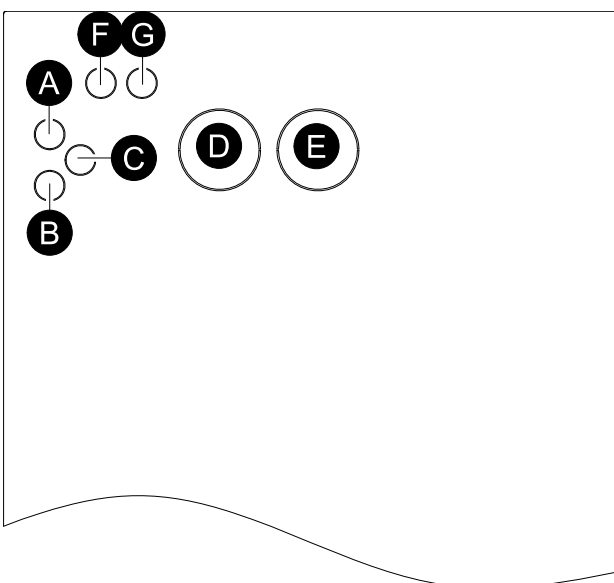


Access through Bottom

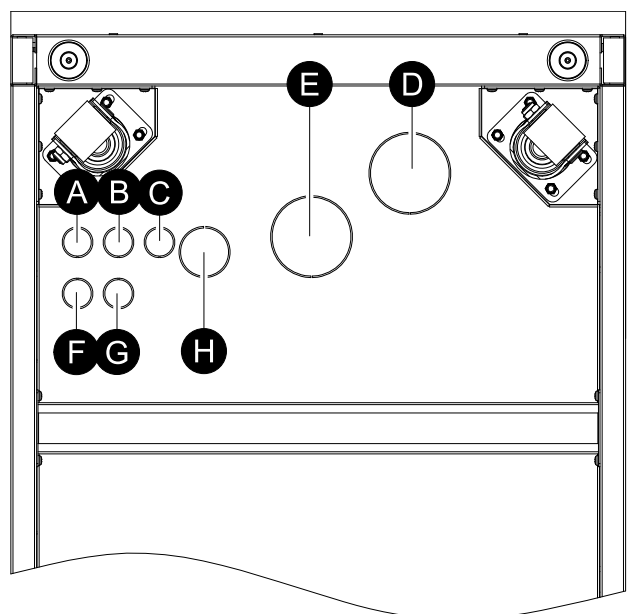


ERC601

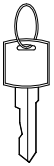
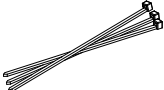
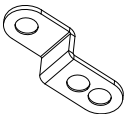

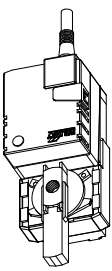
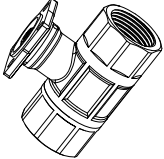
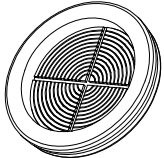
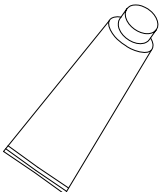
Access through Top



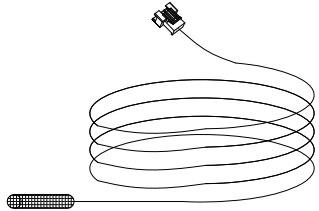
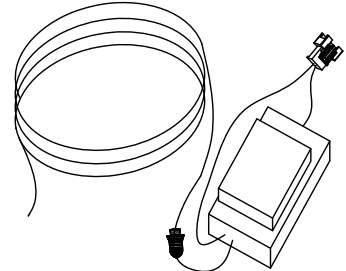
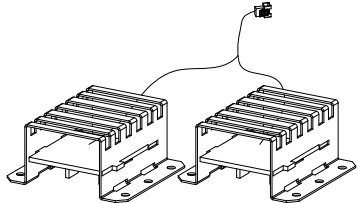
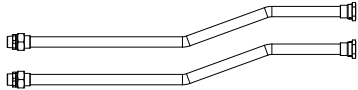
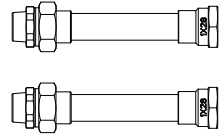
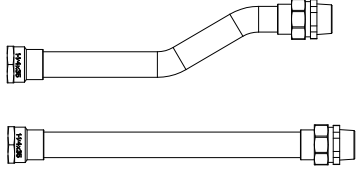
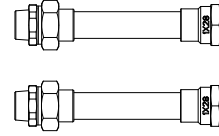
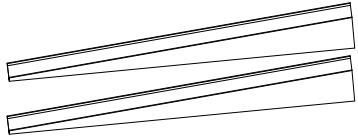
Access through Bottom



Overview of Supplied Parts

Part	Used in	Number of Units
Key	<i>Unlock the Front and Rear Doors, page 20</i>	4 
Cable tie	<i>Install the Rack Temperature Sensor, page 42</i>	20 
Joining bracket	<i>Interconnect the Cooling Unit with a Netshelter SX Enclosure, page 22</i>	8 
Screw for joining bracket	<i>Interconnect the Cooling Unit with a Netshelter SX Enclosure, page 22</i>	16 
Actuator	<i>Connect the Water Outlet Piping, page 29</i>	1 
Water valve	<i>Connect the Water Outlet Piping, page 29</i>	1 
Teflon ring	<i>Connect the Water Outlet Piping, page 29</i>	2 
Glue for sealing	<i>Connect the Water Supply Piping, page 26 and Connect the Water Outlet Piping, page 29</i>	1 

Overview of Options

Commercial Reference	Description	
EAC001	Rack inlet temperature sensor	
EAC002	Rope water leakage detector	
EAC003	Point water leakage detector	
EAC006	Top extension pipe for ERC301 cooling units	
EAC007	Bottom extension pipe for ERC301 cooling units	
EAC008	Top extension pipe for ERC601 cooling units	
EAC009	Bottom extension pipe for ERC601 cooling units	
EAC011	Ramp	

Installation

Move the Equipment to its Final Location

⚠ CAUTION

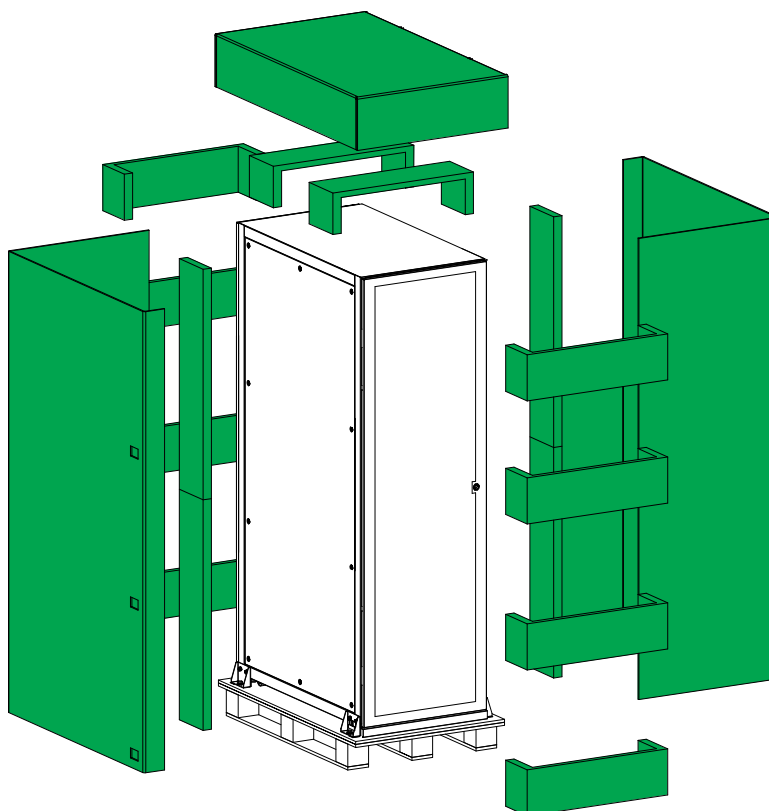
HEAVY EQUIPMENT - TIP HAZARD

- Ensure that the lifting equipment has sufficient capacity to handle the load.
- Two people are required to move the cooling unit to its final location.
- If the floor is smooth and clean, roll the cooling unit to its final location using its casters.
- Do not push on the sides of the cooling unit.

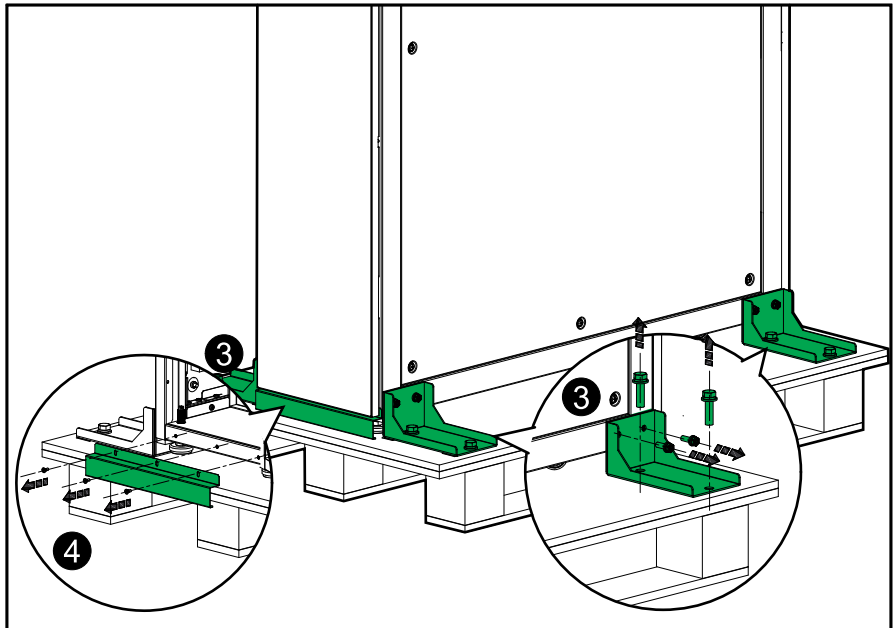
Failure to follow these instructions can result in injury or equipment damage.

Recommended tools for moving the cooling unit while it is still on the pallet:

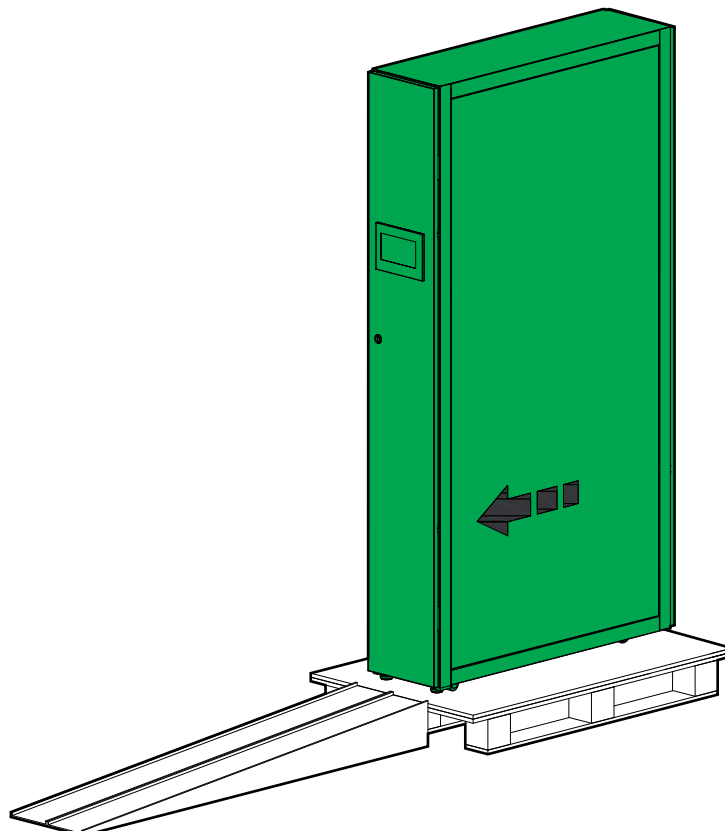
- Pallet jack
 - Fork lift
1. Move the cooling unit to the final installation area using a forklift.
 2. Remove the packaging.



3. Remove the transportation brackets.



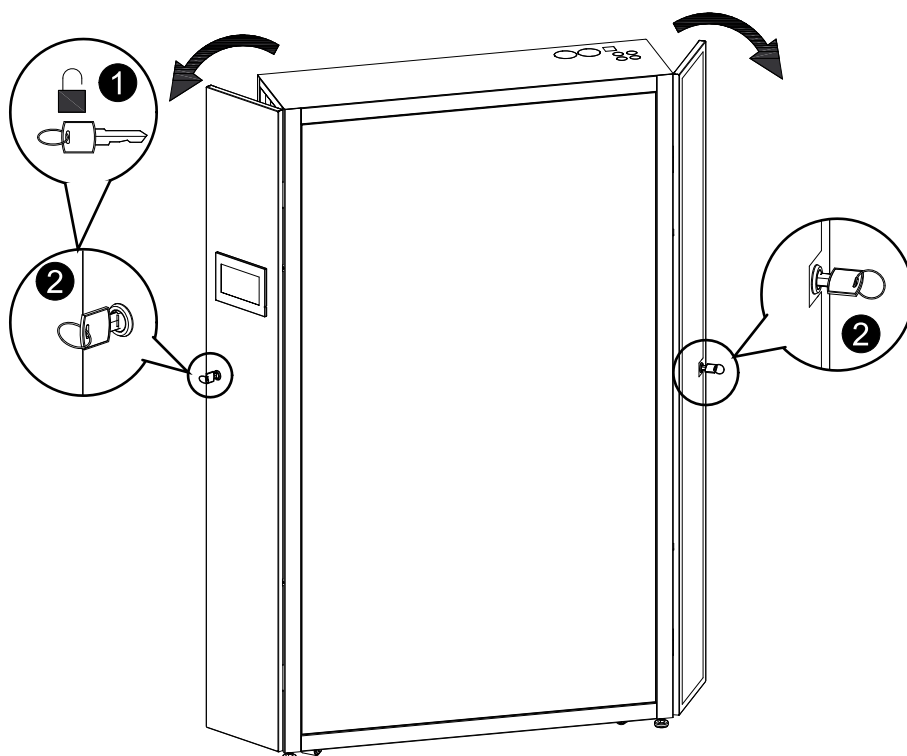
4. Remove the kick plates (if installed).
5. Turn the leveling feet counter-clockwise to the top position.
6. Place the ramp on the front of the pallet and roll the cooling unit down from the pallet.



7. Wheel the cooling unit to its final location.

Unlock the Front and Rear Doors

NOTE: The key of the unit must be kept by a professional.



1. Take the key that is supplied with the cooling unit.
2. Turn the key to unlock the front and rear doors.

Leveling the Cooling Unit

⚠ WARNING

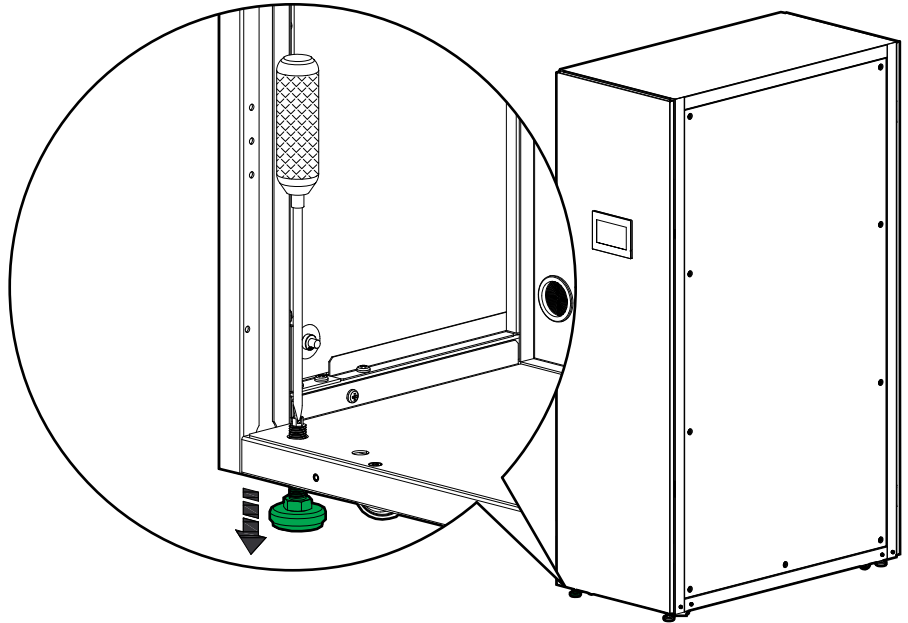
UNEXPECTED BEHAVIOR

- Use caution when opening the front and rear doors while the cooling unit is operating.

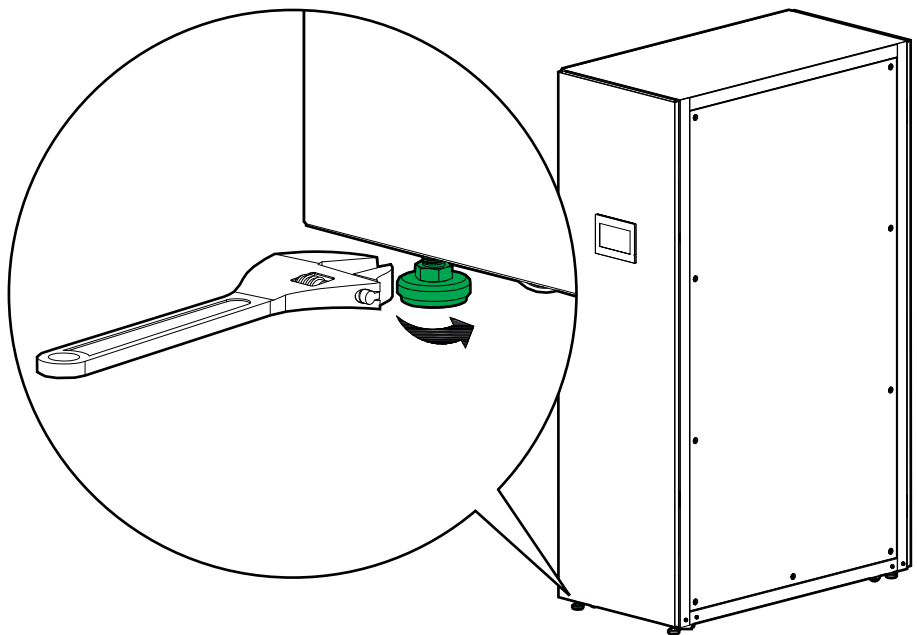
Failure to follow these instructions can result in death, serious injury, or equipment damage.

1. Open the front and rear doors.

2. Insert a Phillips PH2 or slotted screwdriver into the screw above the leveling foot.



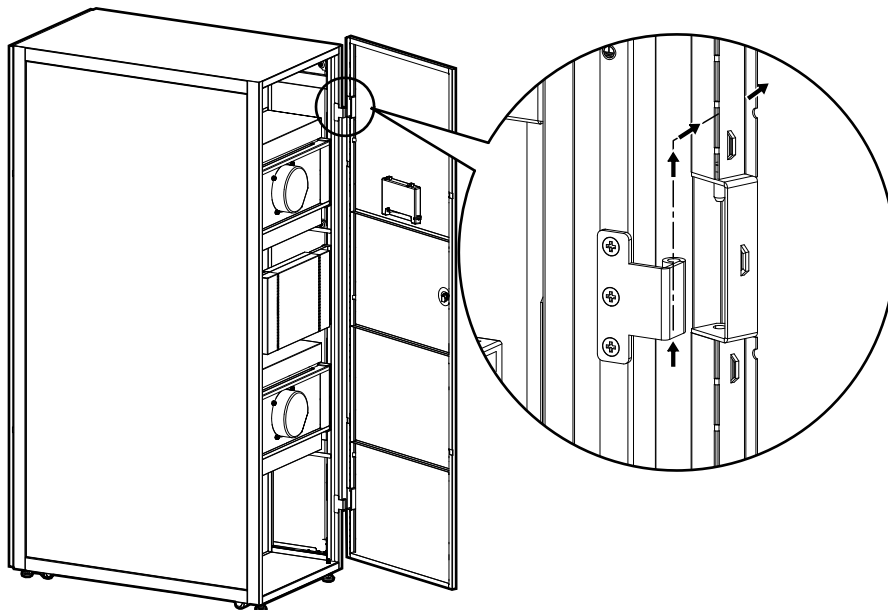
3. Turn the screw clockwise to extend the leveling foot until it makes firm contact with the floor.
4. Repeat steps 2 and 3 for the other leveling feet.
5. Close the front and rear doors.
6. Turn the leveling feet clockwise using a 19 mm open-ended wrench or 6 in adjustable wrench to level the cooling unit.



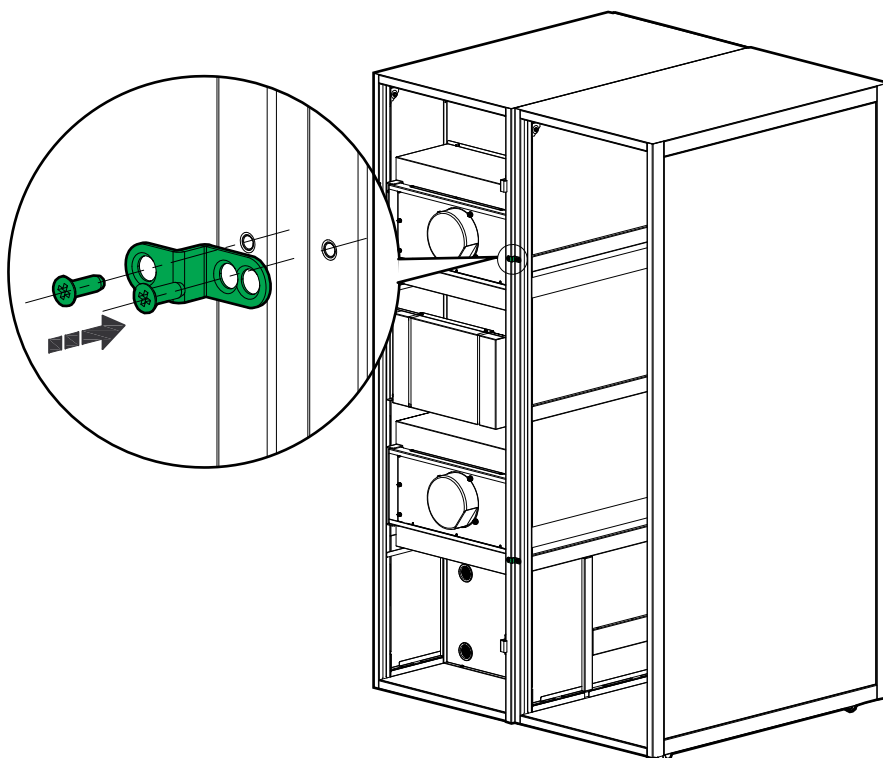
Interconnect the Cooling Unit with a Netshelter SX Enclosure

Four interconnection brackets are shipped with the cooling unit for interconnection with a 600 mm Netshelter SX enclosure.

1. Remove the front and rear doors.



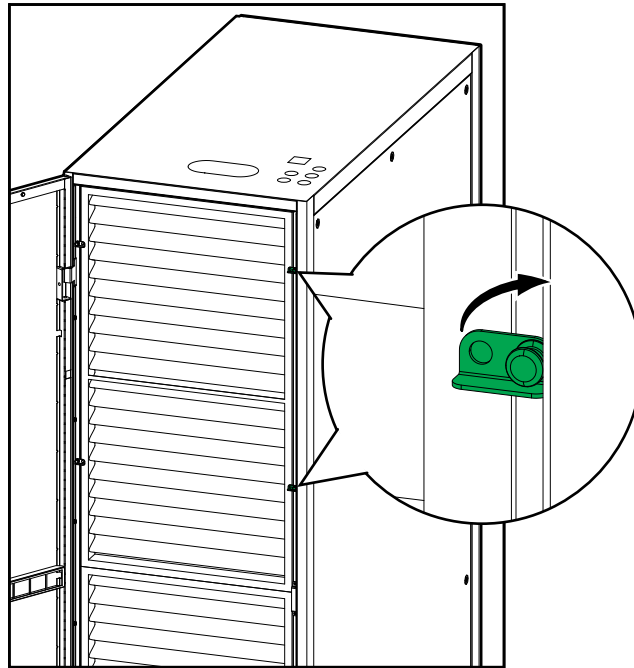
2. Install the provided interconnection brackets and fasten with the provided Phillips head screws.



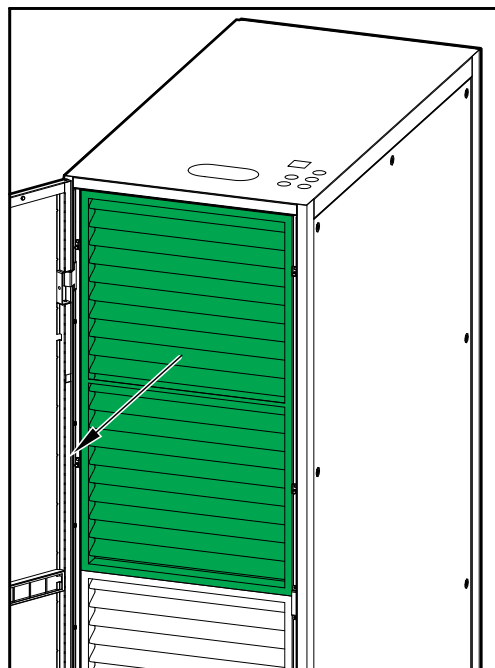
3. Reinstall the front and rear doors.

Air Filter Replacement

1. Open the front door.
2. Turn the air filter locks in both sides of the cabinet to release the filter.



3. Remove the air filter and install the replacement air filter.



4. Turn the air filter lock to fasten the air filter.

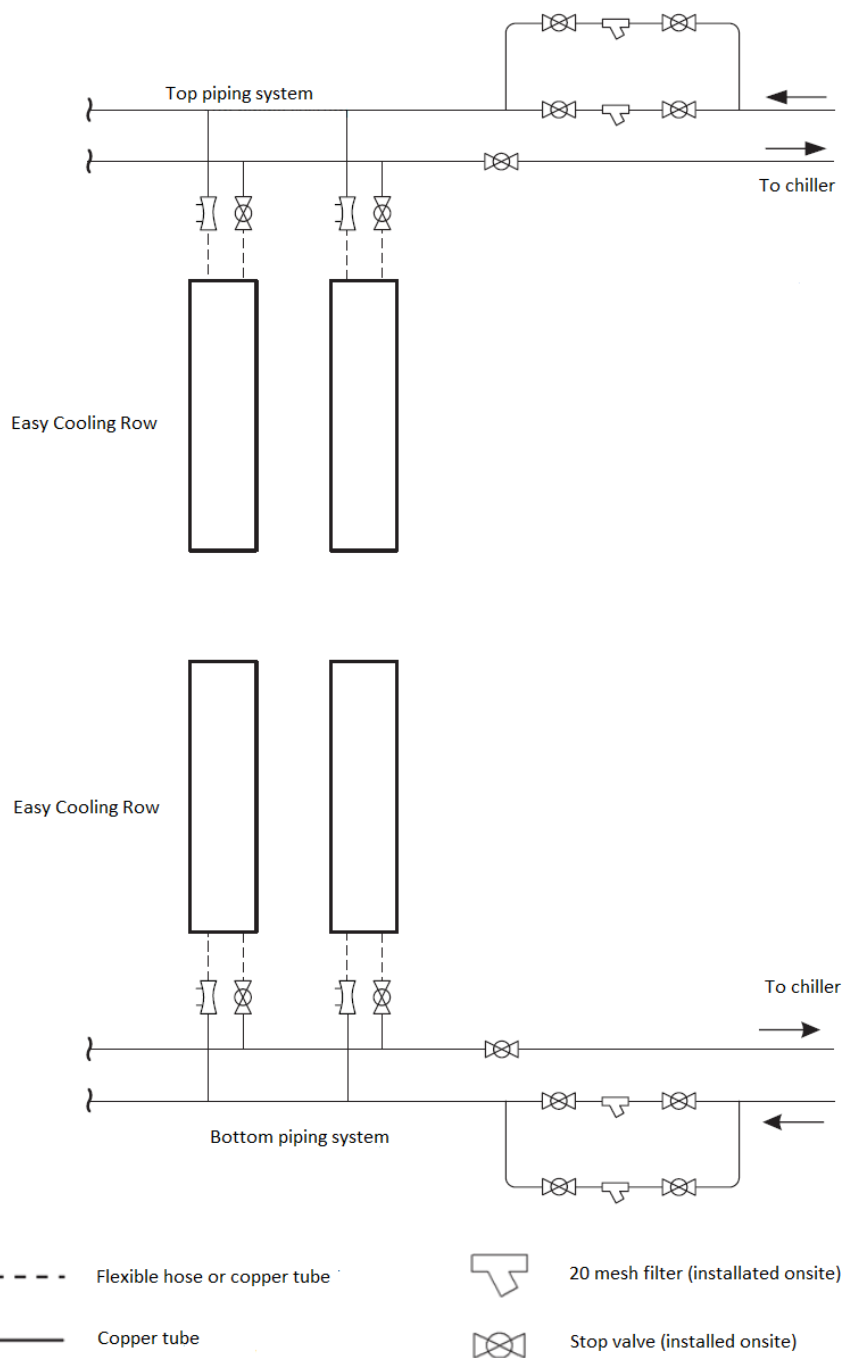
Mechanical Connections

Chilled Water Piping

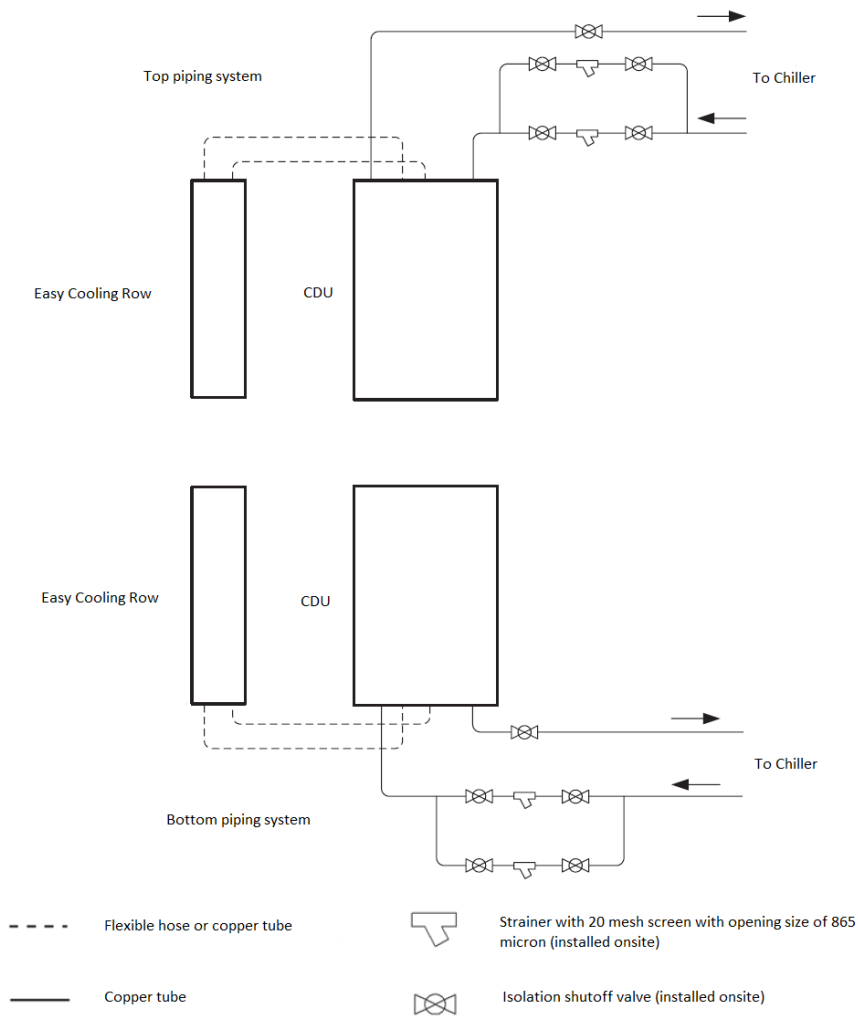
NOTE:

- It is recommended to install a loop regulator to adjust the water flow of every cooling unit, if cooling distribution unit (CDU) is not installed.
- Rinse the piping thoroughly to remove scale and other chemical substances retained during operation.
- The top or bottom holes can be used for all the connections, such as power connections, humidifier water charge pipe connection, chilled water supply tube connection, and chilled water return tube connection. The valve and filter configured for top piping system is the same as the bottom piping system.

Piping Diagram (without CDU)



Piping Diagram (with CDU)



Connect the Piping

NOTE:

- The cooling unit must be charged with nitrogen for leak check during transportation. Before installing the cooling unit, the nitrogen must be discharged.
- The liquid tube must not be installed above electric devices. It must be separated from power cables lines and connections. If the liquid tube needs to swerve or go through the top of electric devices, install the water pan at the bottom of the tube to protect electric devices from damage.

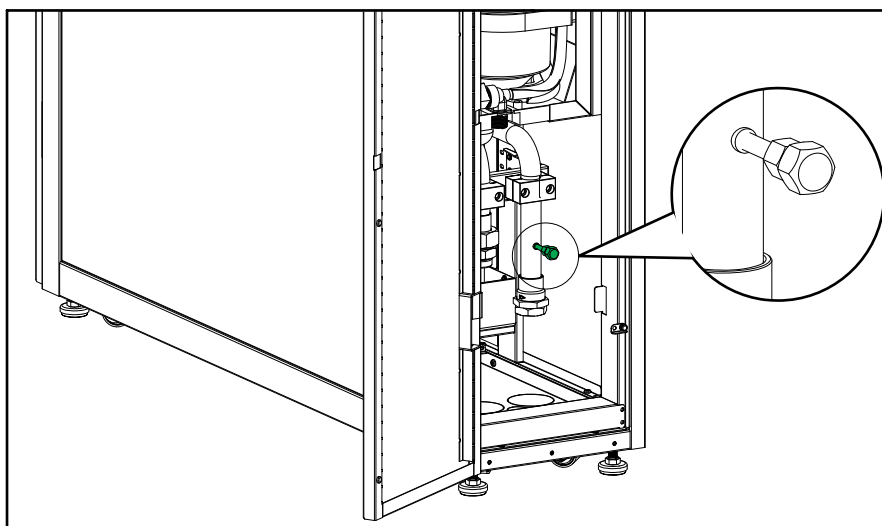
1. Prepare the installation material.

	ERC301		ERC601	
Provided by:	Schneider Electric	Installer	Schneider Electric	Installer
Chilled water supply and return tube	<ul style="list-style-type: none"> EAC006 EAC007 	<ul style="list-style-type: none"> Mild steel pipe DN25 Corrugated stainless steel hose with G1 male connector 	<ul style="list-style-type: none"> EAC008 EAC009 	<ul style="list-style-type: none"> Mild steel pipe DN32 Corrugated stainless steel hose with G1¼ male connector
Glue	Supplied		Supplied	
Insulation pipe		<ul style="list-style-type: none"> Inner diameter: 28 mm Thickness: ≥ 9 mm 		<ul style="list-style-type: none"> Inner diameter: 35 mm Thickness: ≥ 9 mm
Condensation water gravity drainage pipe		Silicone pipe OD24 x ID16		Silicone pipe OD24 x ID16
Humidifier water charge pipe		Rubber pipe with G½ joint (external thread)		Rubber pipe with G½ joint (external thread)

Connect the Water Supply Piping

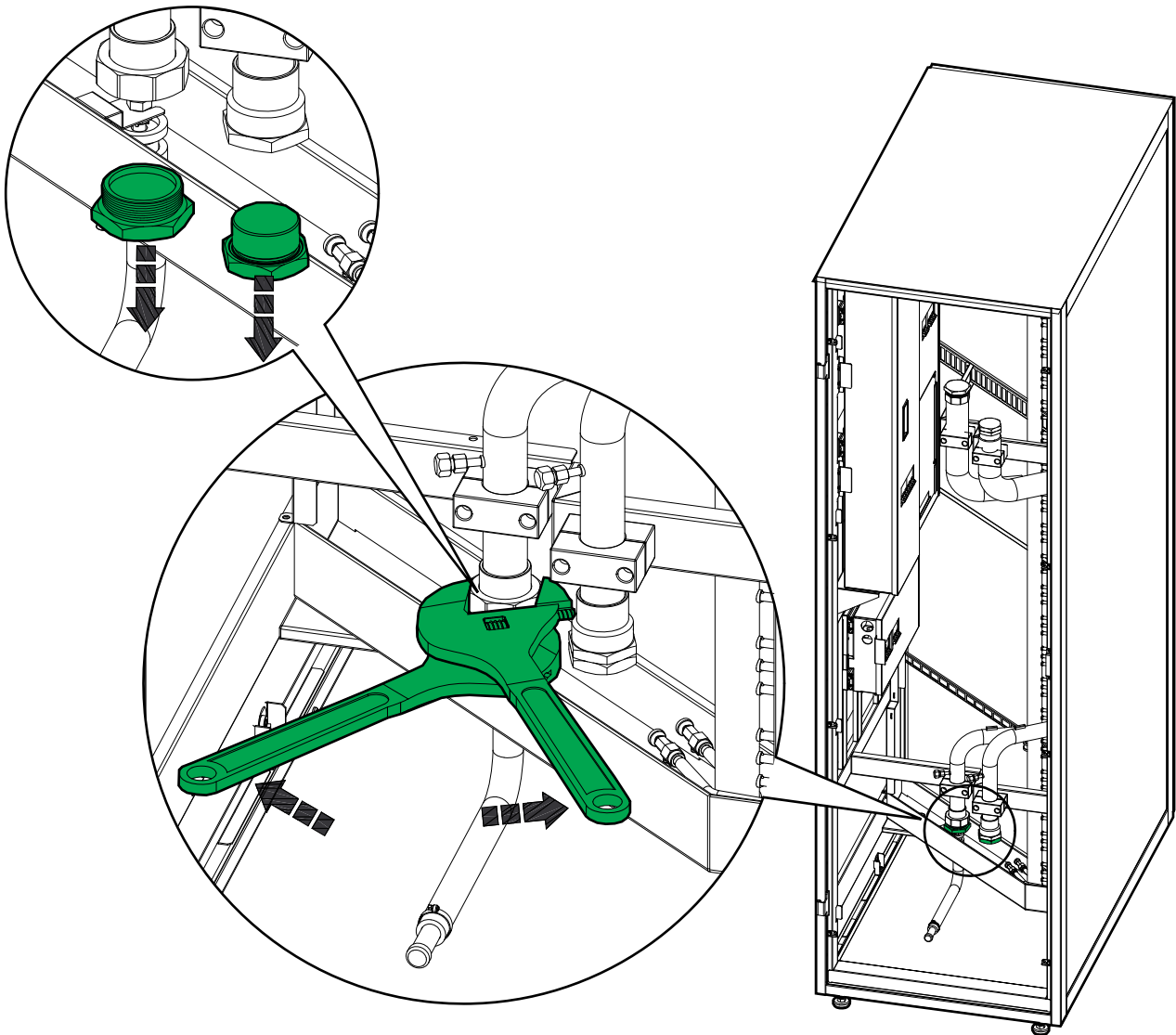
1. Open the rear door and remove the air filters. See *Air Filter Replacement*, page 23 for more information.
2. Remove the caps on the service ports (needle valve) and release the nitrogen charge from the system at the service ports (needle valve).

Rear View of Cooling Unit

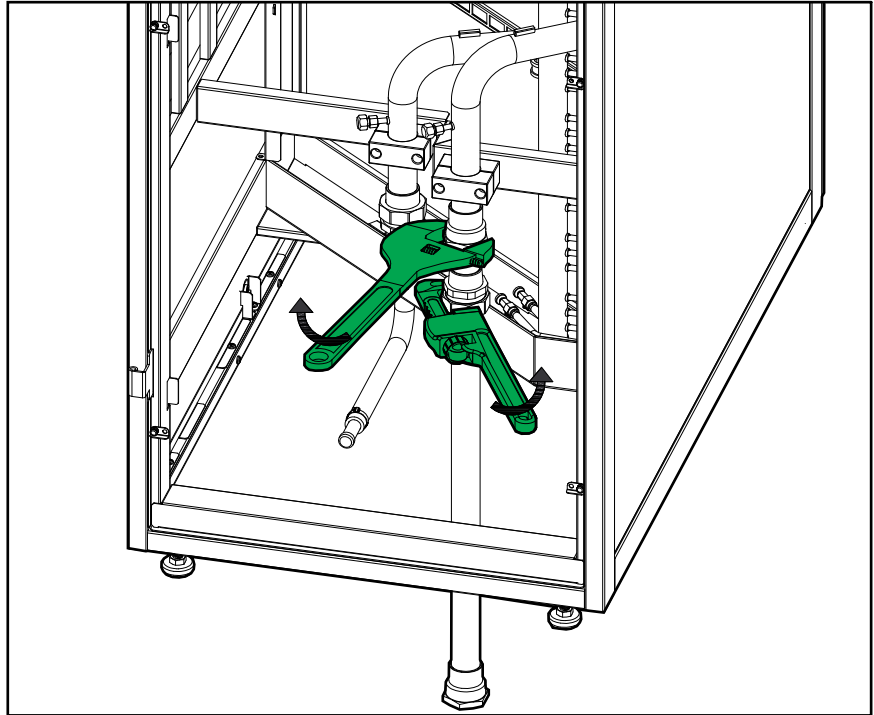


3. Remove the plugs from the water inlet connection and water outlet connection. Use one 41 mm and one 47 mm open end wrench for the ERC301 cooling units, and use one 51 mm and one 56 mm open end wrench for the ERC601 cooling units.

Rear View of Cooling Unit

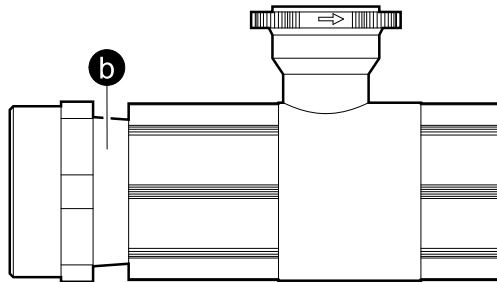


4. Connect the supply water pipe:
 - a. Brush sealing glue on the joint or wrap seal tape around the joint.
 - b. Install the supply water pipe using two open end wrenches.

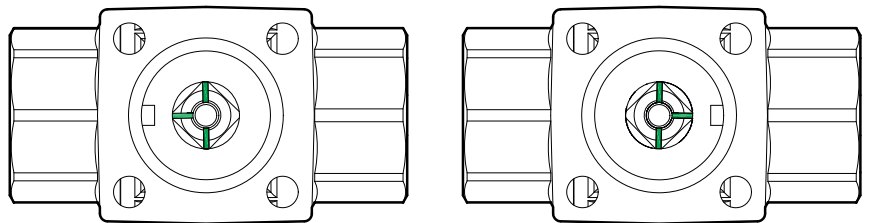


Connect the Water Outlet Piping

1. Install the two-way valve on the water outlet:
 - a. Brush sealing glue around the thread of the connector.
 - b. Connect the two-way valve and the joining adaptor, but do not completely tighten.

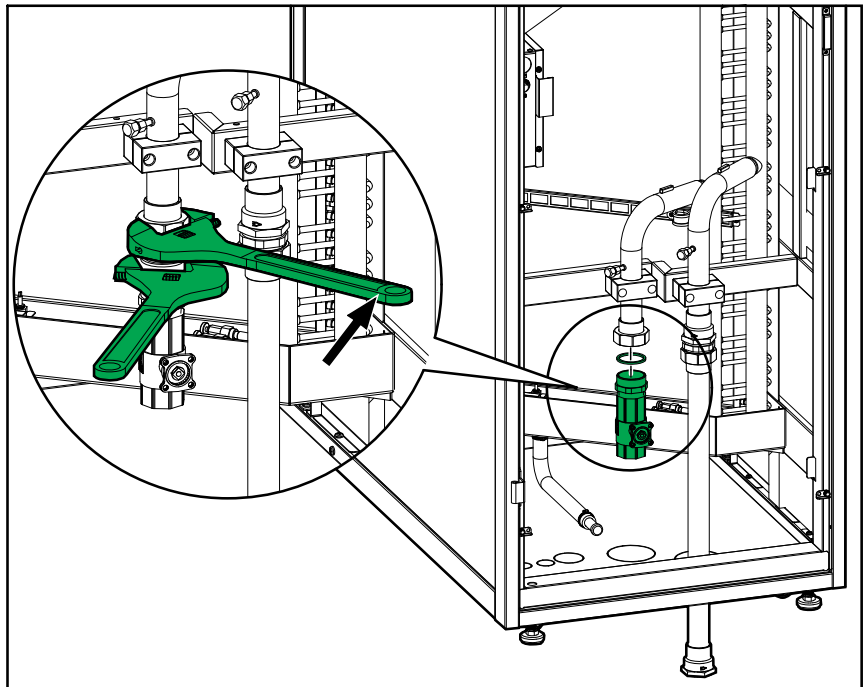


- c. Verify that the valve is in the close status as on the images below.



- d. Place the Teflon ring between the two-way valve on the water outlet and connect the piping. Note the direction of the water flow and ensure that the actuator faces the rear door.

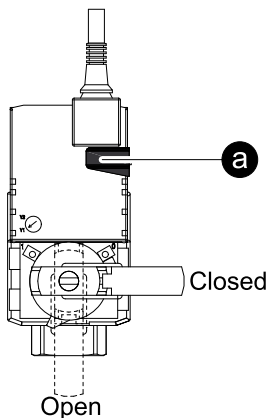
Rear View of the Cooling Unit



2. Connect the water outlet pipe:
 - a. Brush sealing glue on the joint or wrap seal tape around the joint.
 - b. Install the water outlet pipe using two open end wrenches.

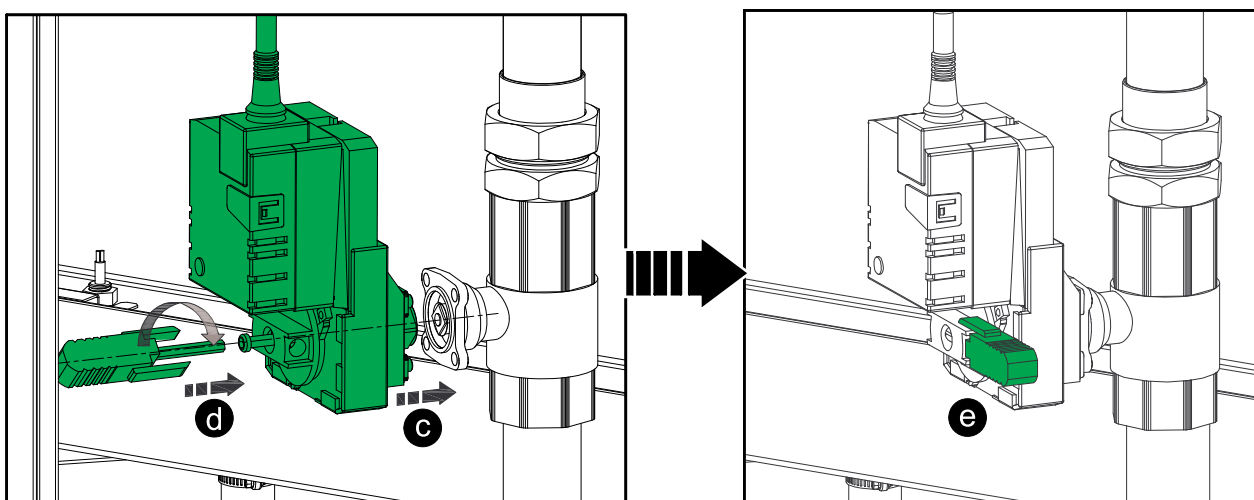
3. Install the actuator:

- a. Press the manual button and move the handle to closed status.



- b. Remove the handle.

- c. Install the four pins of the actuator in the two-way valve.

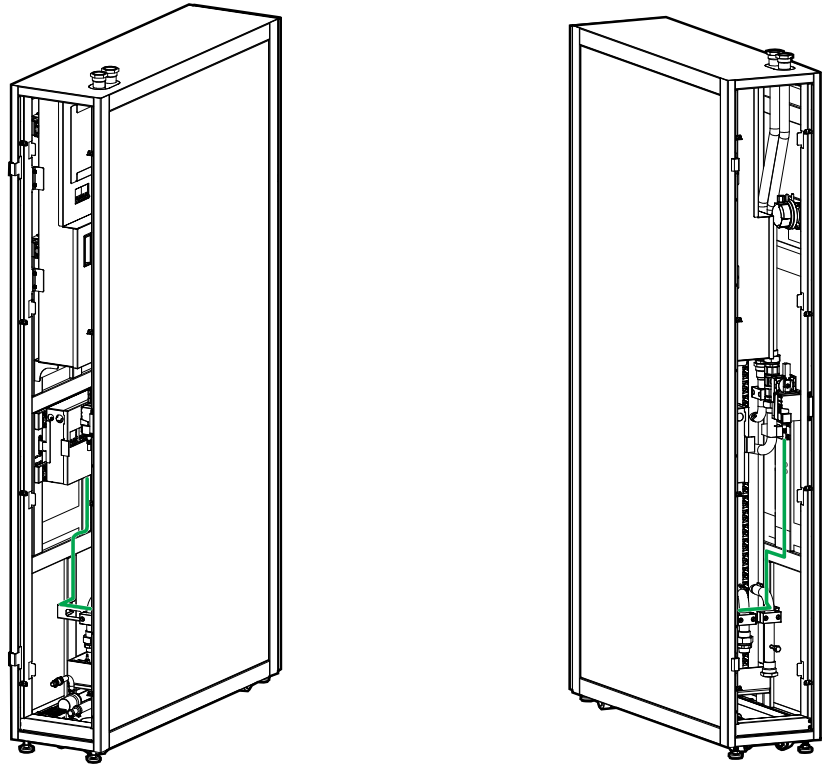


- d. Use the handle to fasten the actuator screws to the two-way valve.

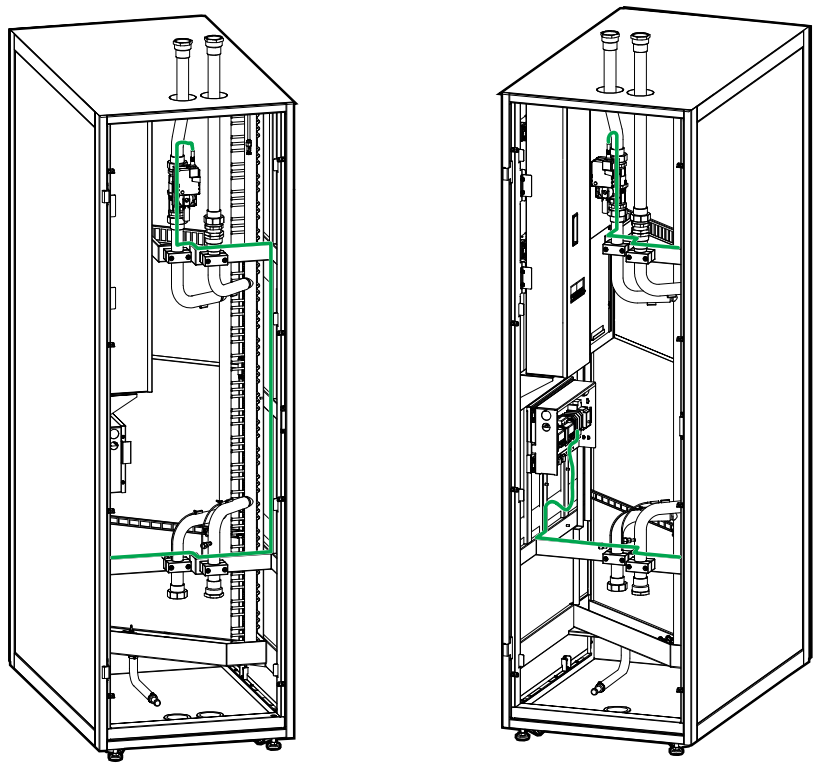
- e. Reinstall the handle.

- f. Route the signal cables from the actuator to the field wiring box and connect to the water flow valve terminals. For locations refer to *Connection of Signal Cables*, page 39.

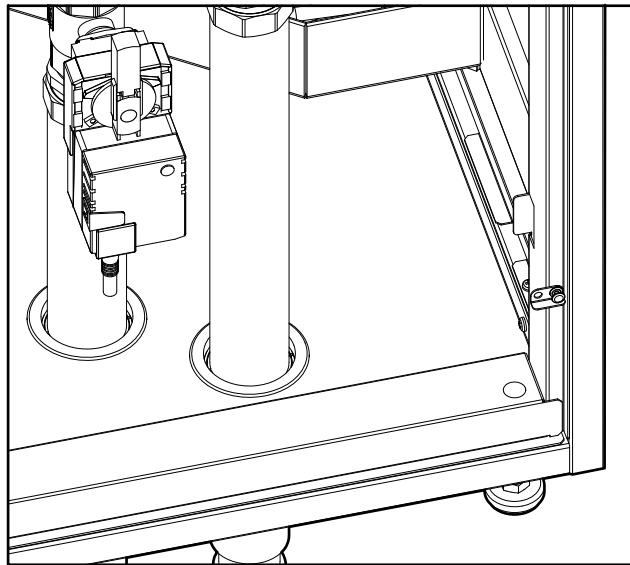
Rear View of ERC301



Rear View of ERC601

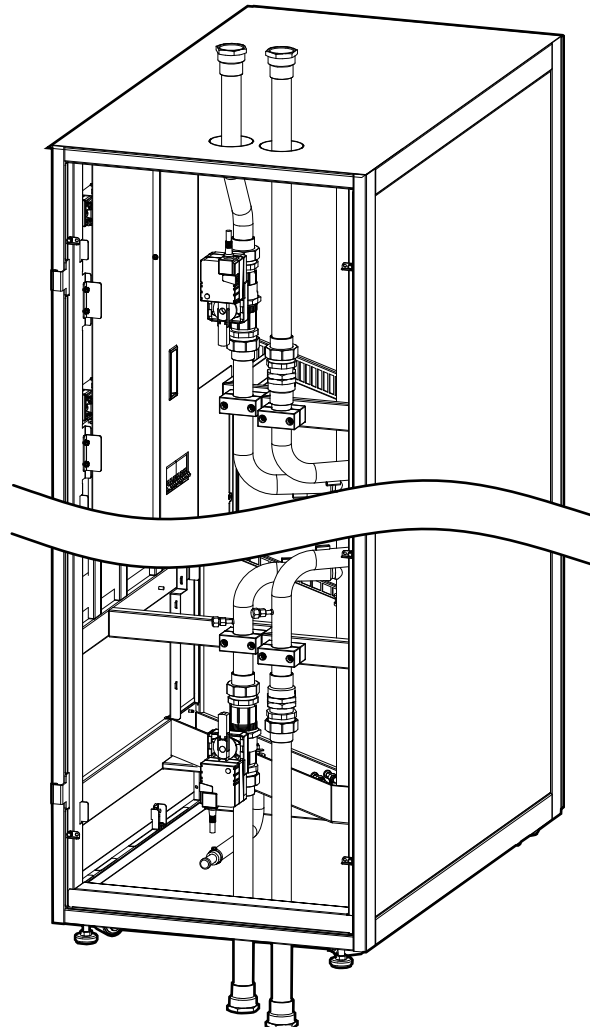
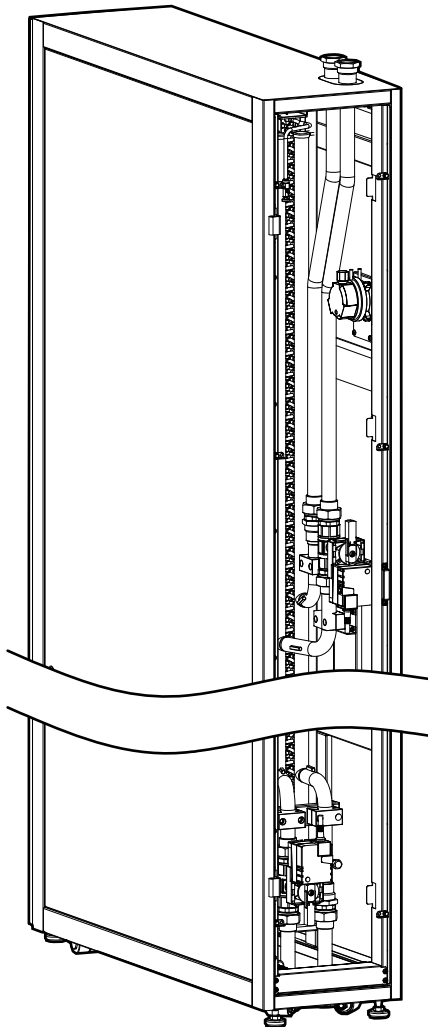


4. Install thermal insulation and protection.



ERC301 Cooling Unit After Installation of Two-Way Valve and Actuator

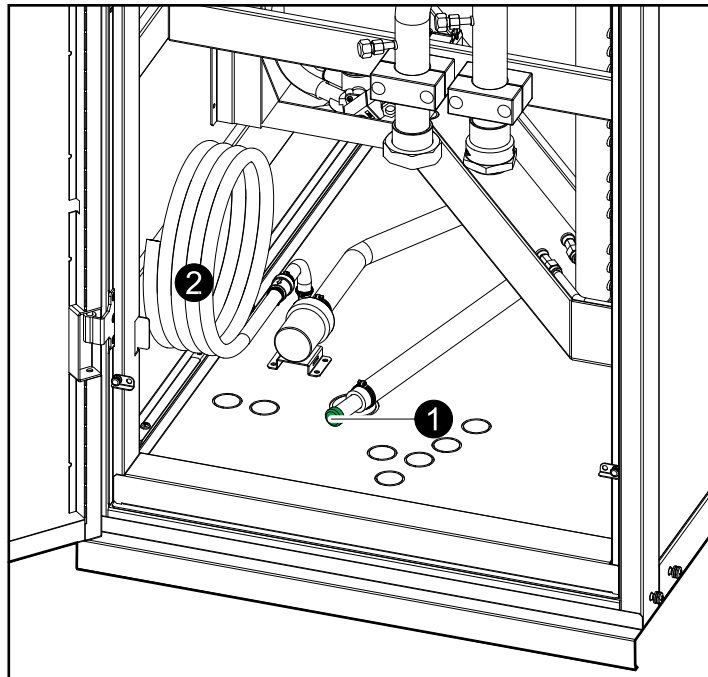
ERC601 Cooling Unit After Installation of Two-Way Valve and Actuator



Connect the Water Discharge Piping

NOTE: The highest drainage height of the condensation drainage pump is 6.5 meters, and the highest horizontal distance is 20 meters.

NOTE: The condensation drainage piping must be made of silica gel or PPR tube resistant to 100 °C and must not be drained under the condition of boiling water.



NOTE: The cooling unit has two alternatives for water discharge: gravity drainage or condensation drainage.

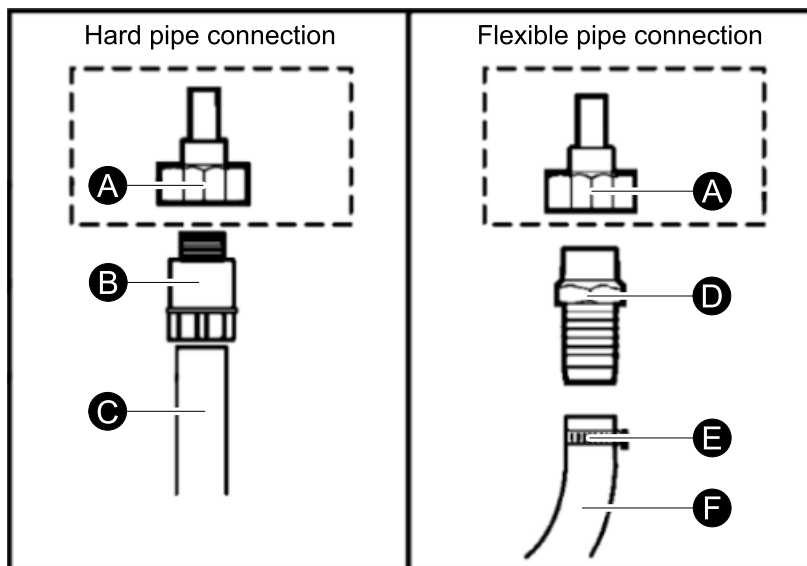
1. For gravity drainage perform the following steps.
 - a. Remove the gravity drainage plug.
 - b. Add an extension pipe to the gravity drainage pipe and route the pipe out of the cabinet and connect to the main drainage system.
2. For condensation drainage:
 - a. Remove the cable tie from the condensation drainage pipe.
 - b. Route the condensation drainage pipe out of the cabinet and connect to the main drainage system.
3. Install thermal isolation material around the drainage pipe.

Connect the Humidifier Water Charge Piping

NOTE: This procedure is only applicable to cooling units equipped with an electrode humidifier.

NOTE: The humidifier water charge connector size is G $\frac{1}{2}$ inner thread.

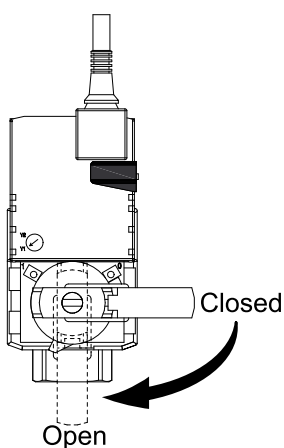
NOTE: The pressures of the main pipe ranges from 0.1 MPa to 1.0 MPa. The pressure regulator must be installed in installations where the pressure may exceed 1.0 MPa and a pump must be installed in installations where the pressure may be lower than 0.1 MPa.



- A. Connector on cooling unit
 - B. Hard pipe adaptor
 - C. Hard pipe
 - D. Pagoda joint
 - E. Flexible pipe clamp
 - F. Flexible pipe
1. Route the pipe from the humidifier out of the cooling unit.
 2. Connect the humidifier water charge piping using one of the two methods shown above.
 3. Seal the connections to avoid water leakage.

Perform a Leak Test

1. Press the manual button on the actuator.
2. Rotate the handle to open the two-way valve.



3. Connect the pressure gauge to the needle valve and charge 0.8 Mpa Nitrogen into the system.
4. Wait 24 hours and verify that the pressure remains the same (meaning no leakage).

Electrical Connections

The electrical connections required in the field are:

- Communication BMS/DCIM (group control)
- Remote rack temperature sensor (optional)
- Water leakage detector (optional)
- Power supply cable to the cooling unit

⚠️ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

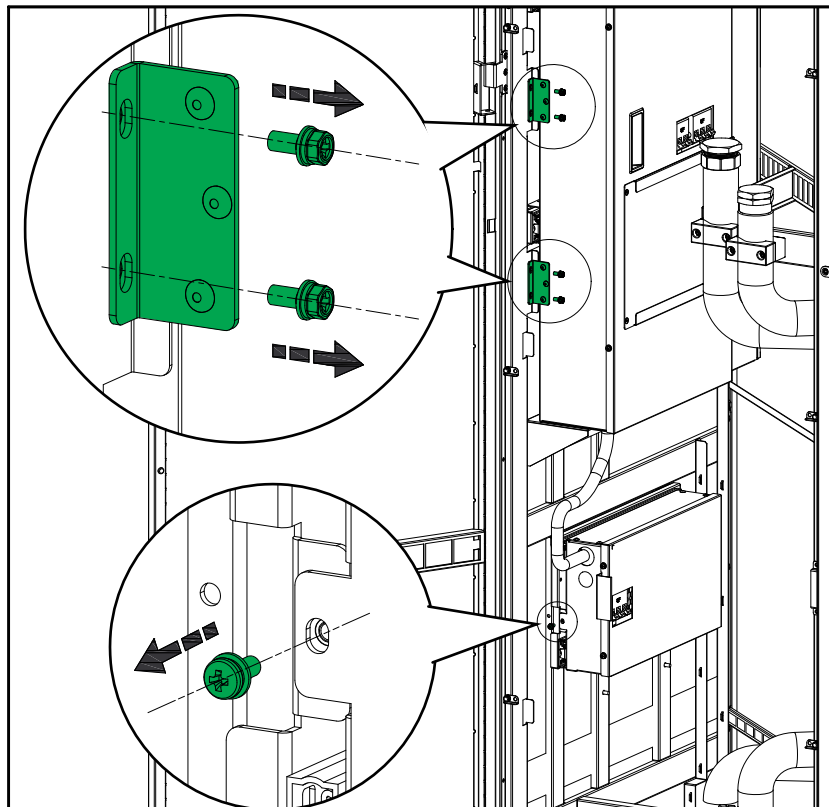
- Turn off all power supplying the cooling unit before working on the cooling unit.
- All electrical work must be performed by licensed electricians.
- Follow lockout/tagout procedures.
- Remove watches, rings, and other metal object before working on the cooling unit.
- Carry out all electrical connections in accordance with applicable industry guidelines as well as national and local codes and regulations.
- See the name plate for voltage and current requirements.
- Make all low-voltage connections, including data and signal connections, with properly insulated wire. Insulation of low-voltage wiring must be rated for at least the voltage of any adjacent wiring.

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

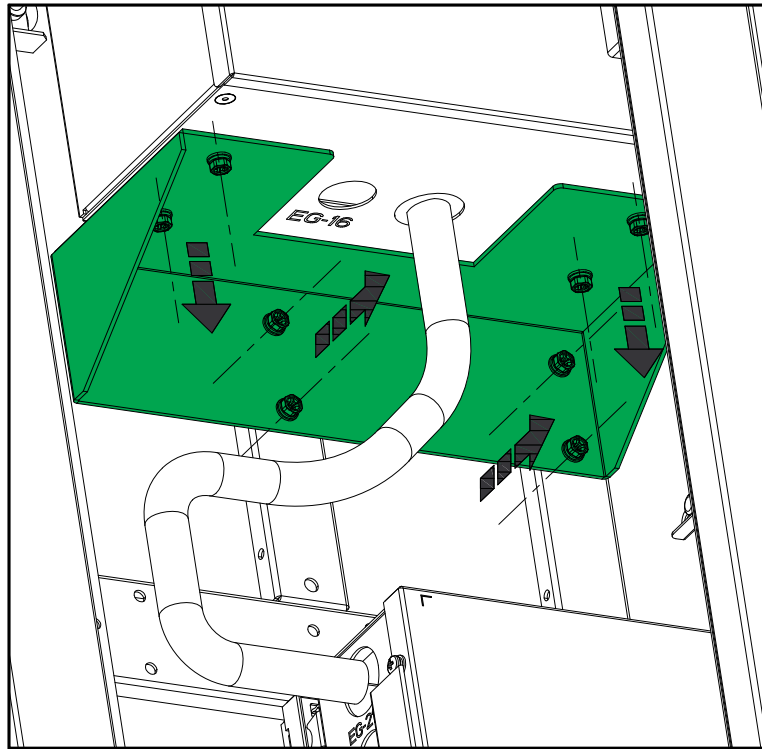
Connect the Power Cables

1. Remove the screws from the indicated brackets.

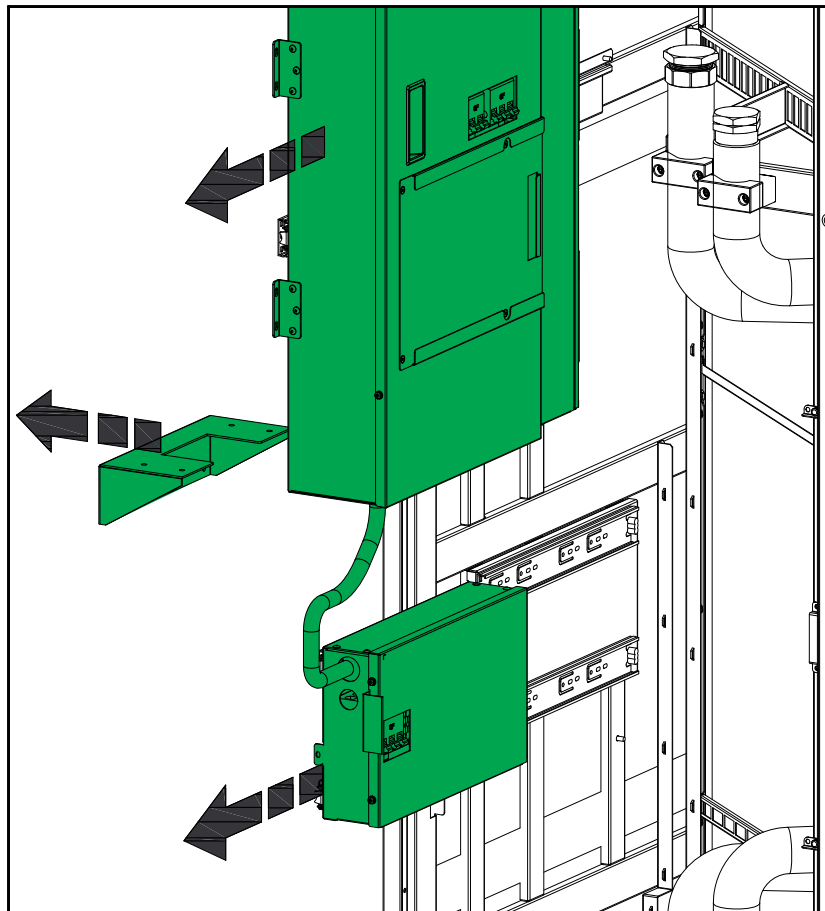
Rear View



2. Remove the bracket below the electrical components box.

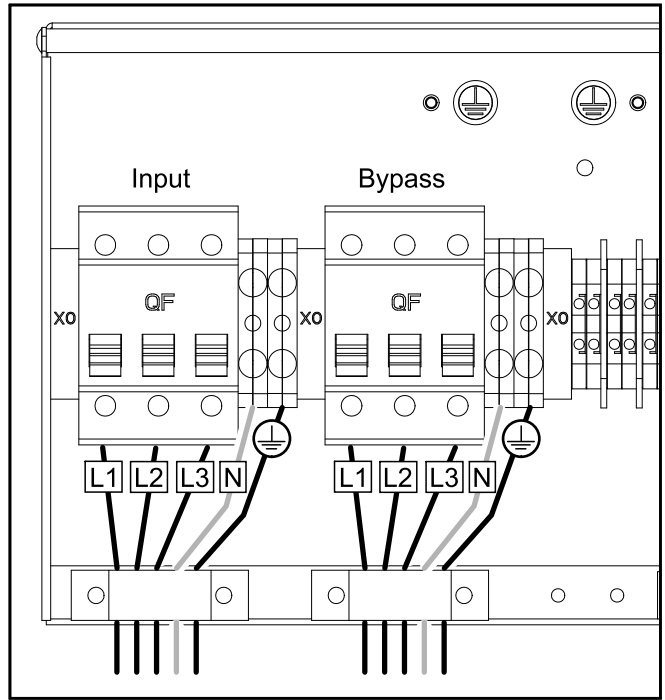
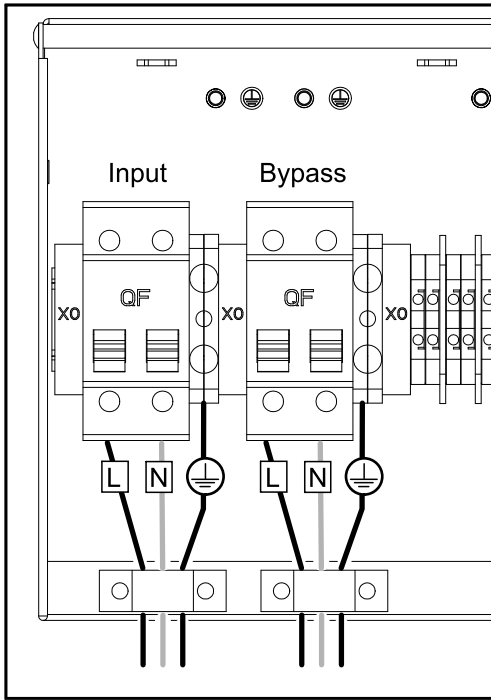


3. Slide out the electrical components box and the field wiring box.



4. Remove the cover from the field wiring box.

5. Connect the input cables.

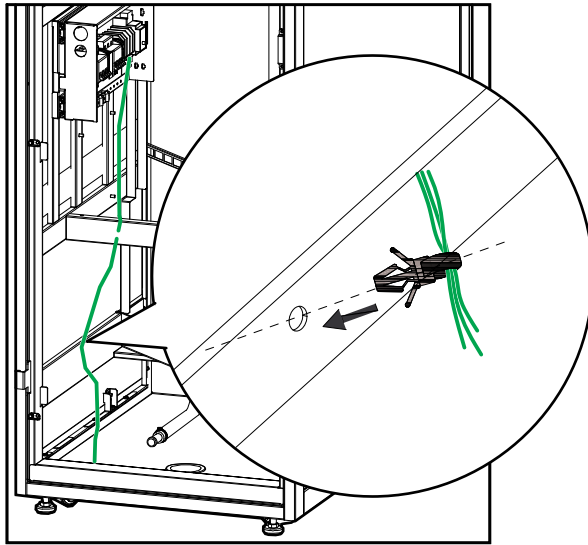


6. In dual mains systems, connect the bypass cables.

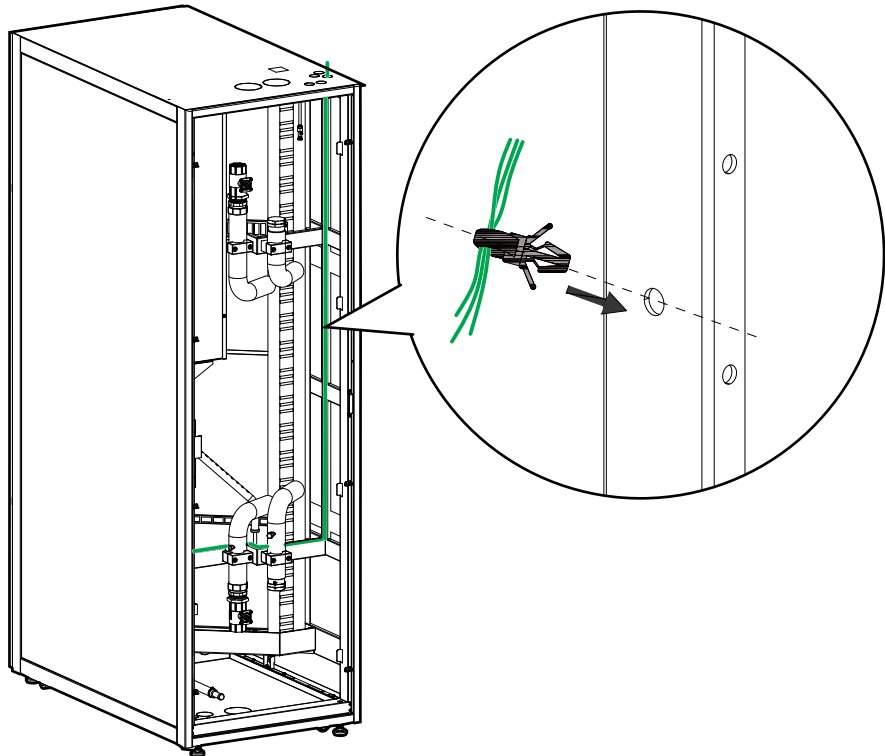
7. Fasten the power cables as per the local regulations.

8. Route the signal cables as shown below.

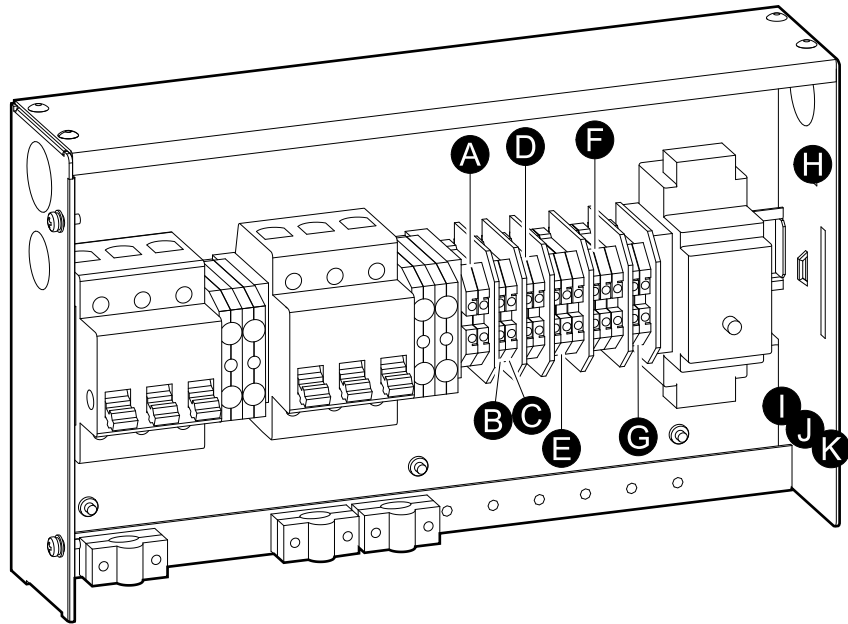
Bottom Cable Entry



Top Cable Entry

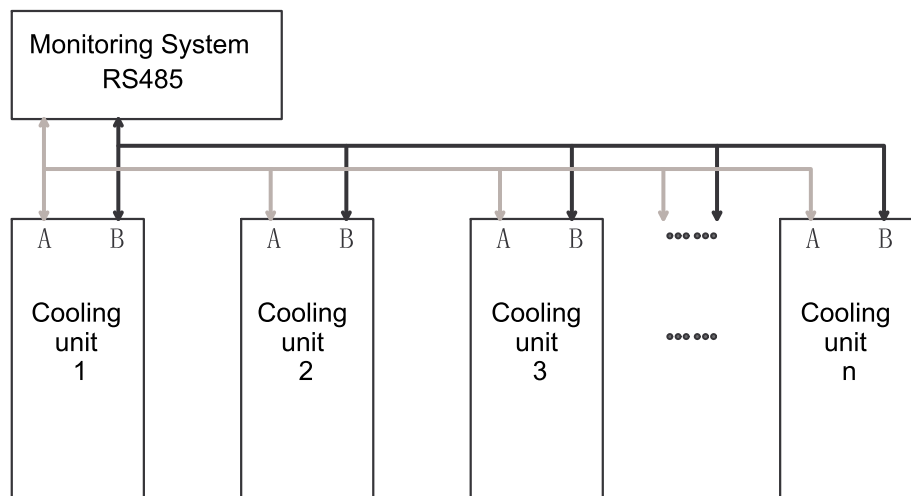


Connection of Signal Cables



- A. Ground
- B. Fire/smoke alarm terminal
- C. Remote off terminals
- D. Group control terminals (A, B)
- E. Power and environment terminals (A, B, GND)
- F. Water flow valve terminals (Y, -, +)
- G. General alarm output terminals (NO, COM)
- H. Water leakage detector connection
- I. Rack inlet air temperature sensor 1 connector
- J. Rack inlet air temperature sensor 2 connector
- K. Rack inlet air temperature sensor 3 connector

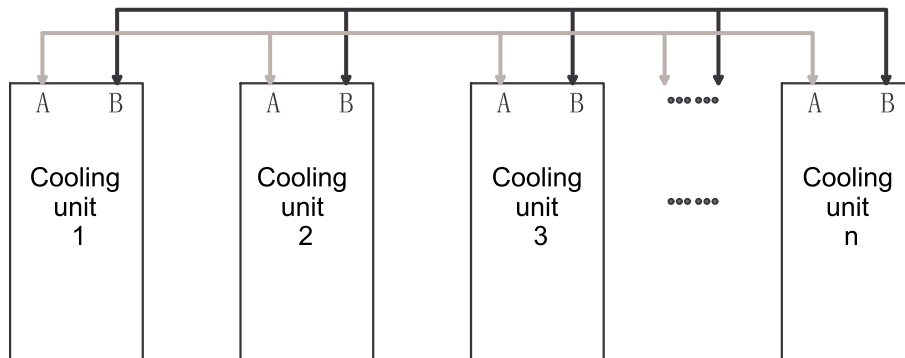
BMS/DCIM Connections



Connect the power and environment (terminal A) and power and environment (terminal B) to corresponding “+” and “-” of the monitoring system. For multiple cooling units, connect them in series and then connect to the monitoring system.

After start-up of the cooling unit, configure by going to **Main > Setting > User > Network** and set the **Remote communication control** to **Modbus** and the **Remote communication baud rate** to 9600.

Group Control Connections



Connect the group control (terminal A) and group control (terminal B) in the field wiring box and connect to the other cooling units, one by one.

NOTE:

- If a slave unit becomes unavailable, a backup unit will take its place in the group. This process can continue until all backup units are in operation.
- If a master unit becomes unavailable, all backup units will become active and all units will operate separately (no group control). When the master unit returns group control will resume.

NOTE: Refer to the operation manual for information on how to configure the group control.

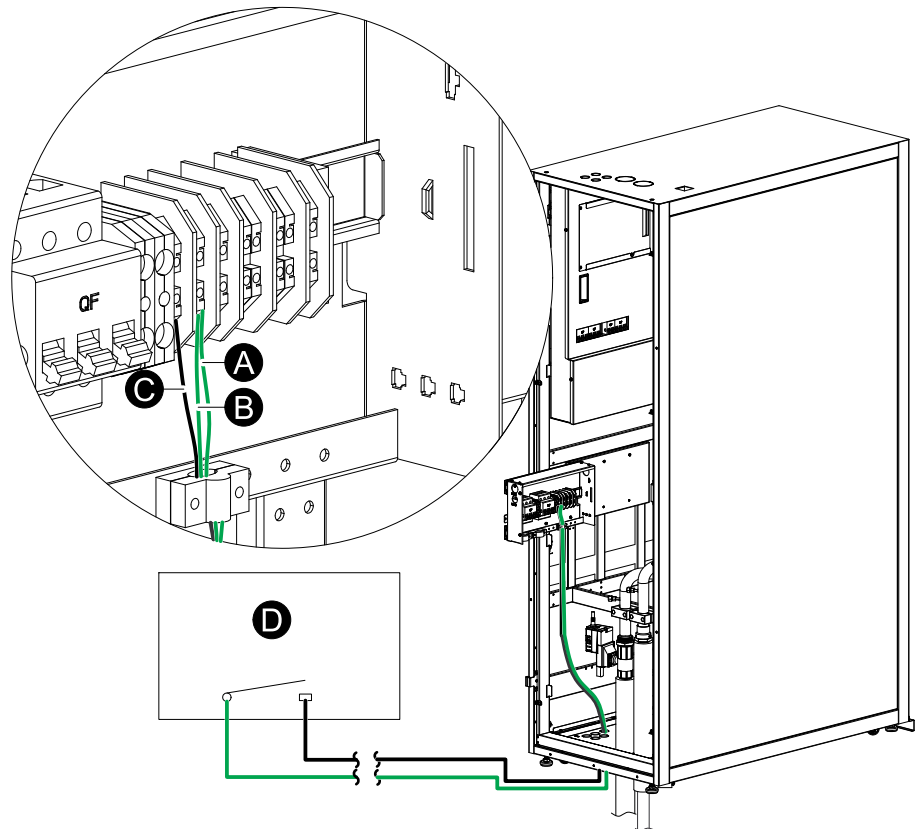
Connect Remote Power Off and Fire/Smoke Alarm

Connect Remote Power Off Connection

Connect the remote power off contactor to the terminals **MCU 1: GND** and **Remote** in the field wiring box.

Connect Fire/Smoke Alarm Connection

Connect the fire/smoke alarm contactor to the terminals **MCU 1: GND** and **Remote** in the field wiring box.

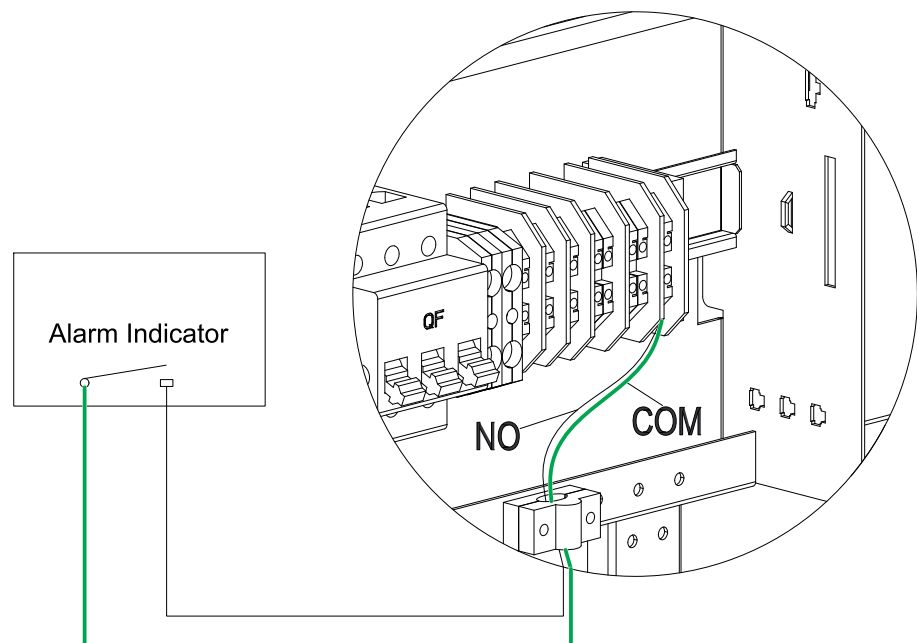


- A. Remote power off
- B. Fire/smoke alarm
- C. GND
- D. Remote power off contactors or fire/smoke alarm contactors

General Alarm Connection

NOTE: An alarm indicator is not provided with the cooling unit.

Connect the alarm indicator contactors to the two terminals **NO** and **COM** in the field wiring box for general alarm output.



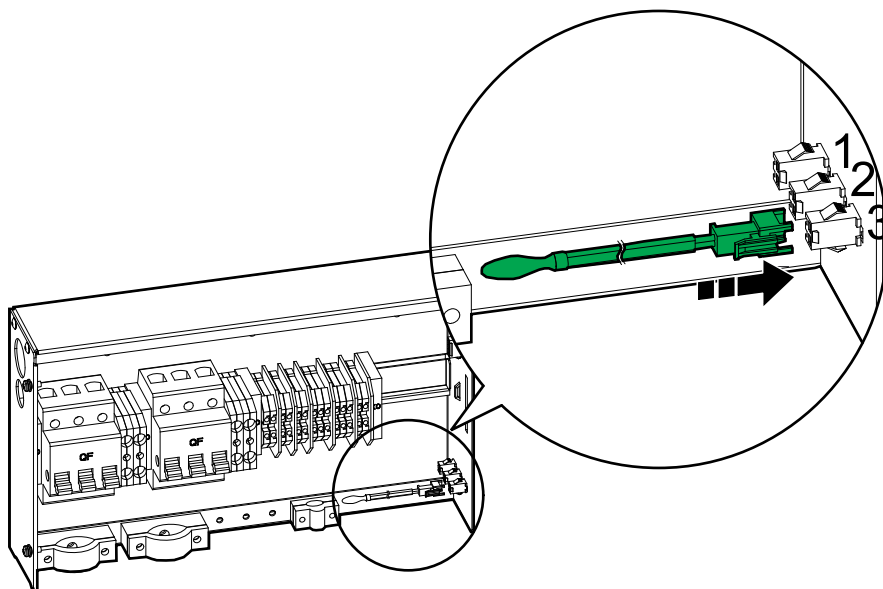
Install Optional Equipment

Install the Rack Temperature Sensor

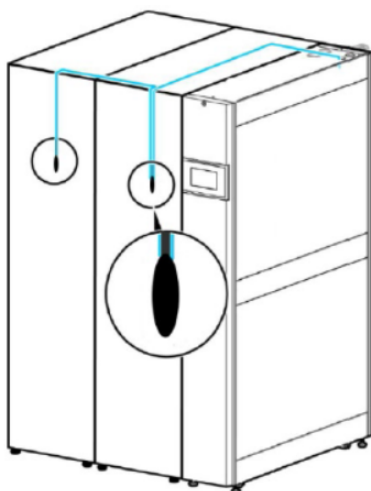
The rack temperature sensor monitors and controls the airflow and ensures that there is an adequate supply of cooling air to the server cabinets in the data center.

NOTE: The installation of a rack temperature sensor is not required if the equipment operates in a rack air containment system or a hot aisle containment system.

1. Insert the rack temperature sensor connector into the temperature sensor port located inside the field wiring box.

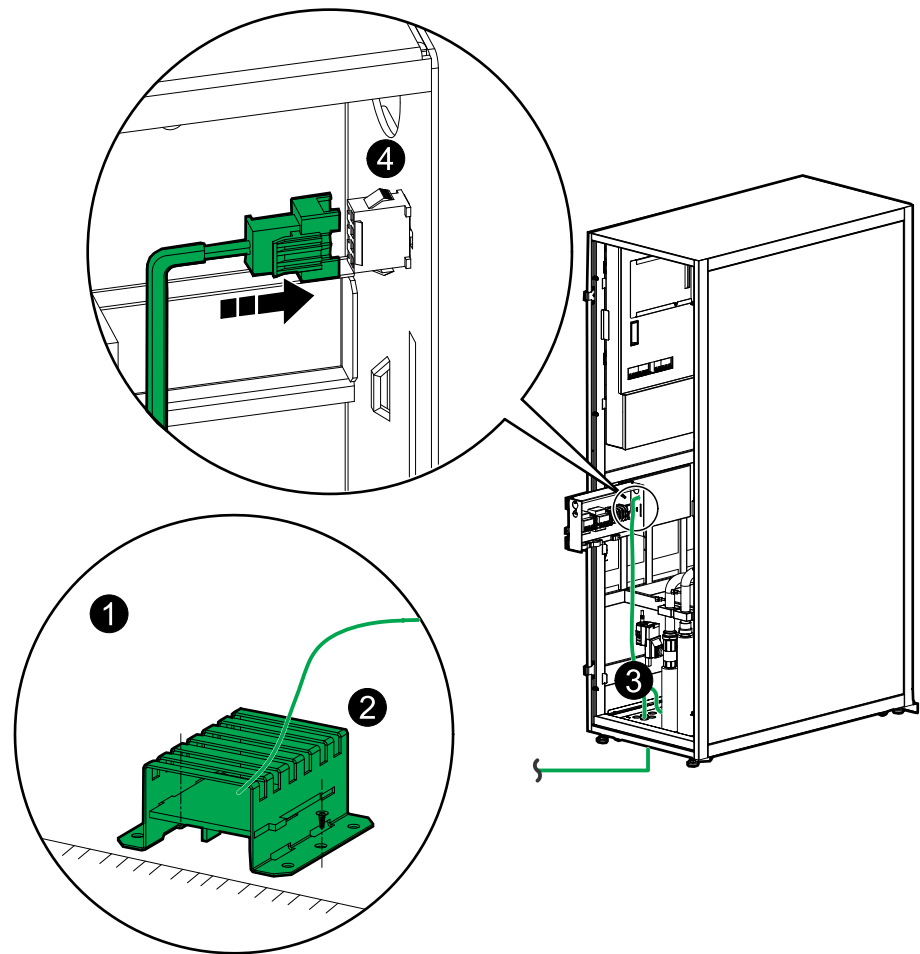


- For top installation, push the sensor through the port located at the top of the equipment.
 - For bottom installation, route the sensor through the access hole at the bottom of the equipment.
2. Route the sensor either through the top or bottom of the adjacent server cabinet.
 3. Fasten the temperature sensor cable to the front door of the adjacent server cabinet at 1.5 m away from floor using the provided cable tie or wire clips as shown.



Install the Point Water Leakage Detector

The point water leakage detector is used to detect water leakage in the exterior and interior of the system.

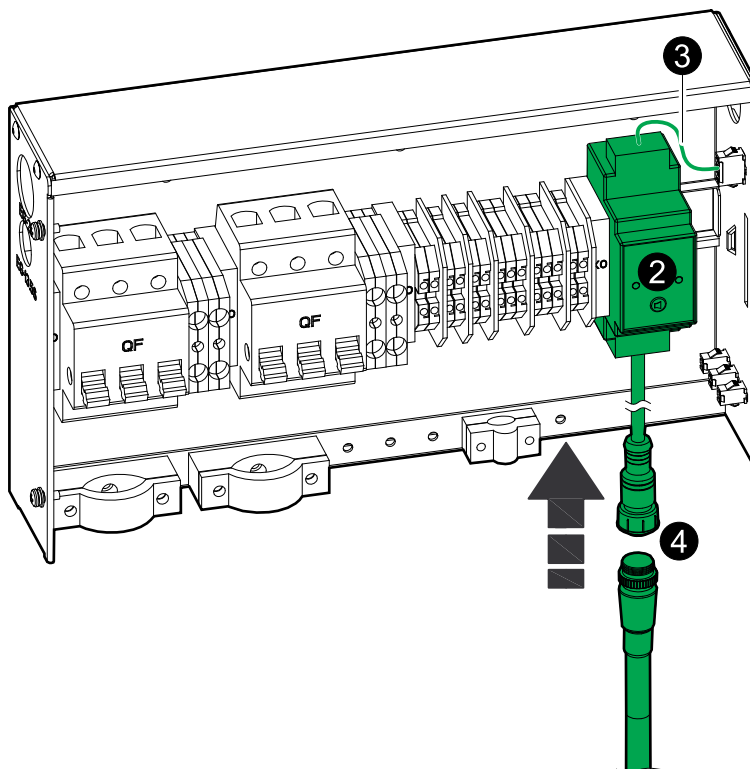


1. Place the point water leakage detector on the floor or in the bottom of the cooling unit.
2. Fasten the detector using M4 Phillips head screws.
3. Route the signal cable through the bottom of the cooling unit.
4. Connect the plug of point water leakage detector to the socket located in the field wiring box.

Install the Rope Water Leakage Detector

The rope water leakage detector is used to detect water in the exterior and interior of the system, along its entire length.

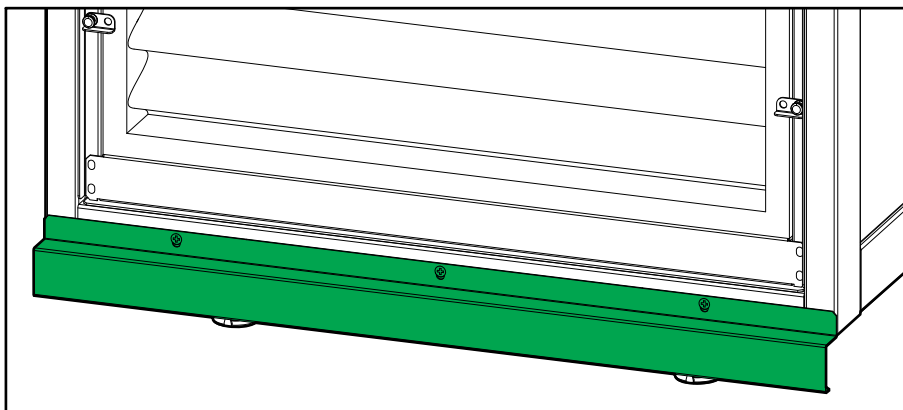
The wiring cable can be extended out of the cooling unit. The effective length of the rope water leakage detector is 1500 mm.



1. Install the alarm switch in the field wiring box.
2. Connect the signal cable to the plug in the upper right corner of the field wiring box.
3. Connect the rope detector plug to the socket.
4. Place the rope detector in the desired location.

Install the Kickplates

1. Open the front and rear doors.
2. Install the kickplates on the front and rear of the cooling units.



Final Installation Steps

1. Reinstall the cover on the field wiring box.
2. Push the electrical components box and the field wiring box back into position. Fasten with the brackets.
3. Reinstall the air filters.
4. Close the front and rear doors and lock the doors of the cooling unit.

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