Installation

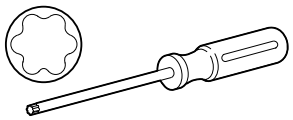
⚠WARNING

PERSONAL PROTECTIVE EQUIPMENT REQUIRED

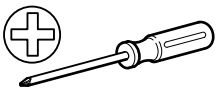
During installation, authorized personnel must wear approved personal protective equipment (PPE).

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

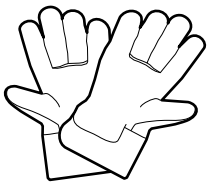
Required Tools



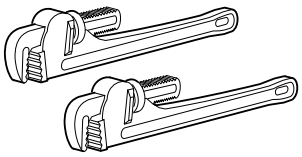
TORX® screwdriver



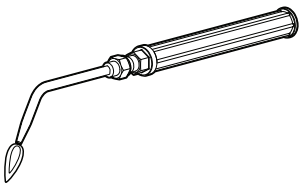
Phillips screwdriver



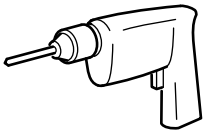
Personal protective equipment



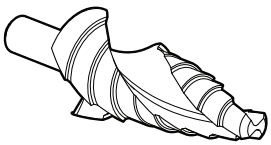
Two pipe wrenches



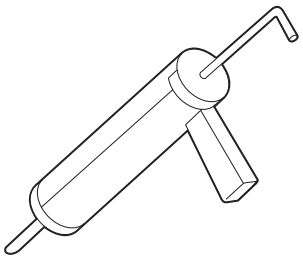
Brazing torch



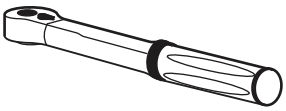
Drill



Step drill bit or similar tool to cut holes in sheet metal



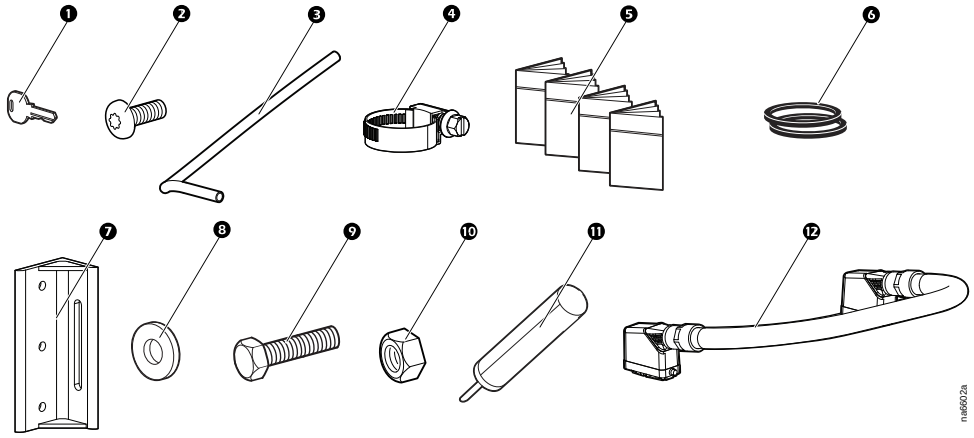
Caulking gun



Ratchet wrench

Inventory

Ship-Loose Kit



Item	Description	Quantity	Item	Description	Quantity
❶	Access door keys	2	❼	Bracket*	4
❷	M8 TORX® screws	16	❽	Washers*	20
❸	Condensate drain hose**	2	❾	M10x30 bolt*	16
❹	Hose clamp**	2	❿	Hex nut*	4
❺	Documentation	—	⓫	Tube of caulk*	1
❻	Gaskets	2	⓬	Communication cable*	1

*Shipped with IAEC50*** unit installations.
**Shipped with units equipped with the DX trim cooling option.

Moving the Unit

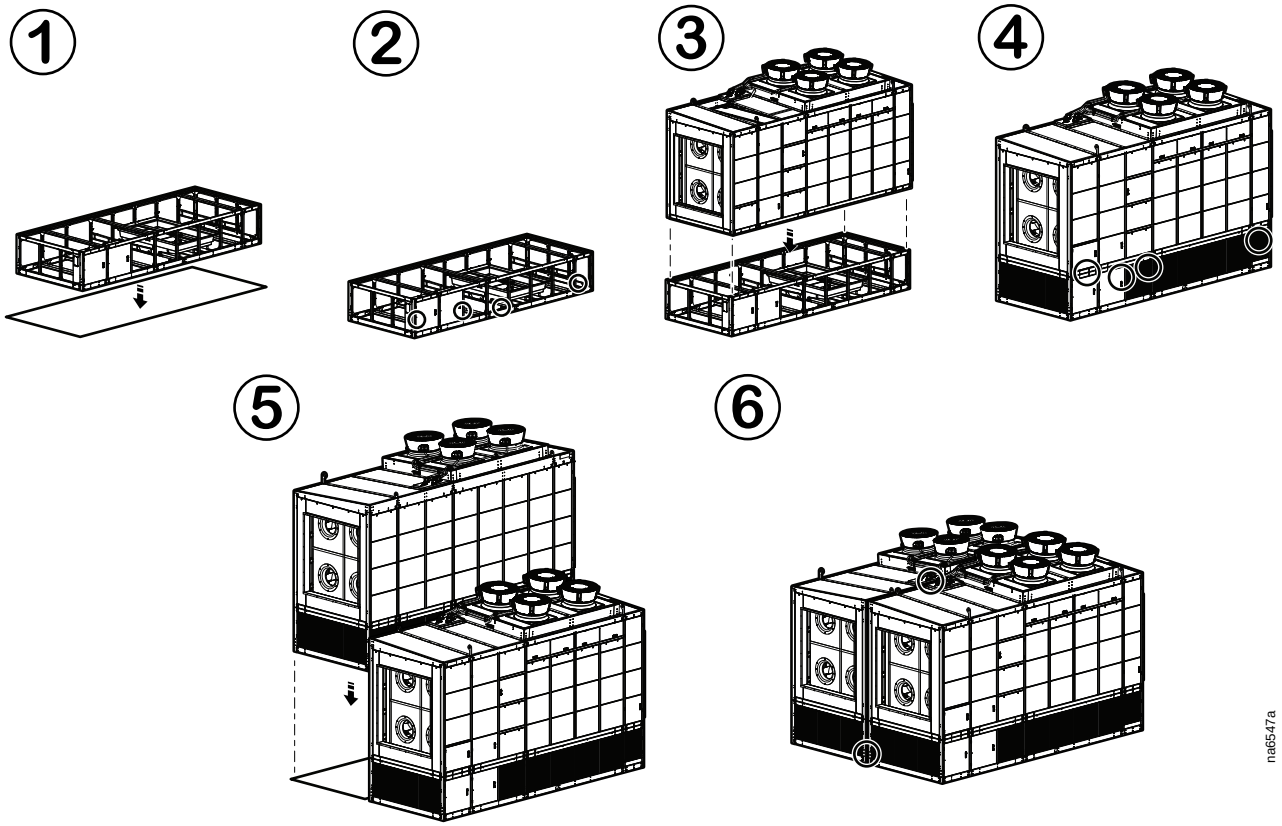
See *Moving the Unit, page 13*.

Installation Overview

Option 1

1. Position the lower section on the platform or roof.
2. Make the site water, communication, and electrical connections for the lower section.
3. Position the upper section on the lower section.
4. Make the upper-to-lower section connections.
5. For IAEC50*** installations, place the full expansion module (upper and lower sections connected) next to the main module. The return air sides and supply air sides must be even with each other before connections are made.

   NOTE: Make the same connections in step 4 for the expansion module.
6. Make the mechanical and communication connection between the two IAEC25*** units to form the IAEC50*** unit.



Option 2

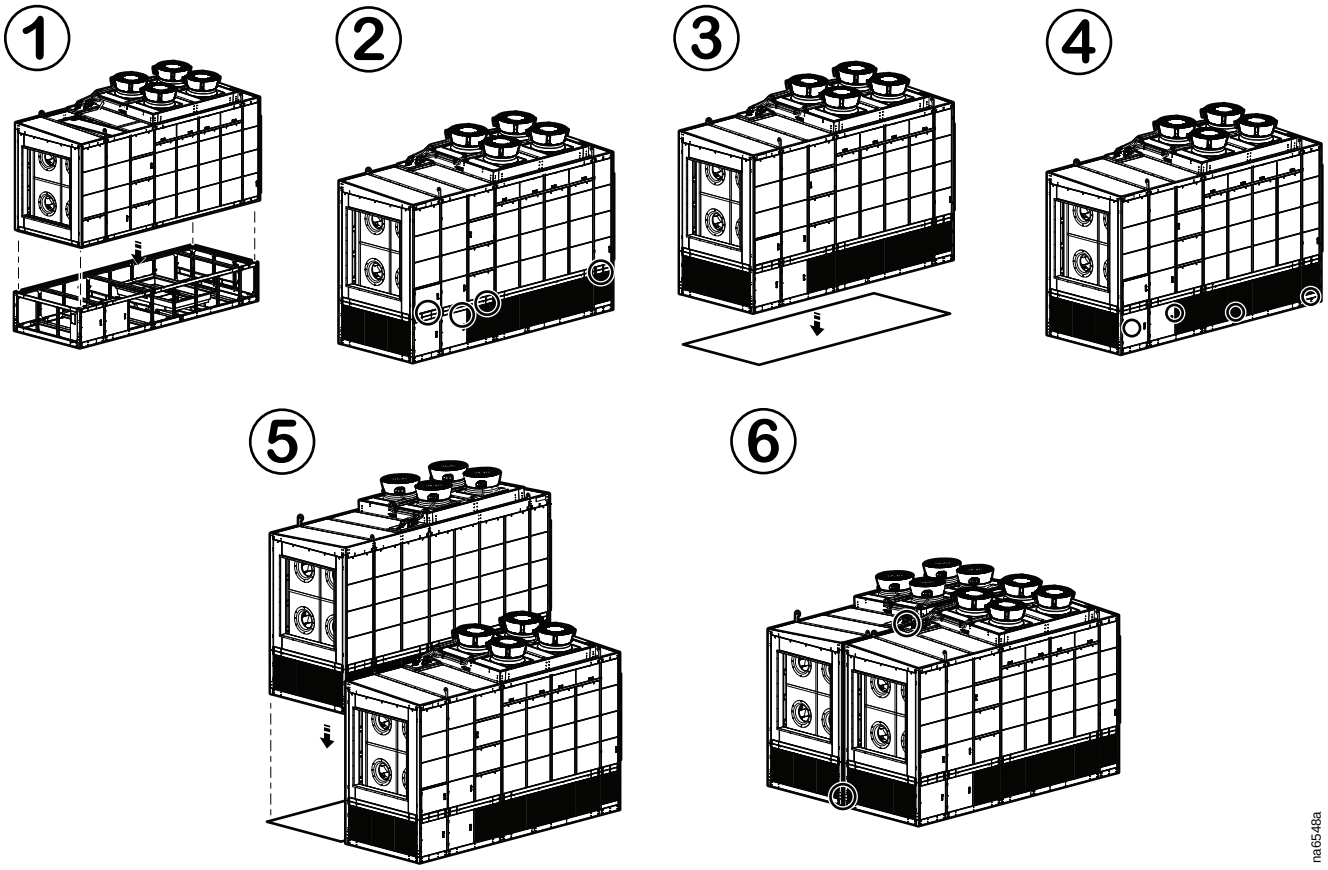
1. Connect the upper section to the lower section.

   IMPORTANT: The lower section must be on a stable and level surface before placing the upper section on top.

2. Make the upper-to-lower section connections.
3. Position the full unit on the platform or roof.
4. Make the site water, communication, and electrical connections for the lower section.
5. For IAEC50*** installations, place the full expansion module (upper and lower sections connected) next to the main module. The return air sides and supply air sides must be even with each other before connections are made.

   NOTE: Make the same connections in step 4 for the expansion module.

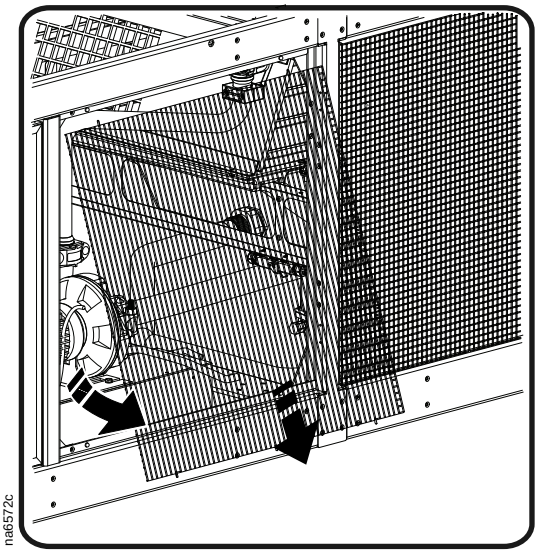
6. Make the mechanical and communication connection between the two IAEC25*** units to form the IAEC50*** unit.



Panel Removal

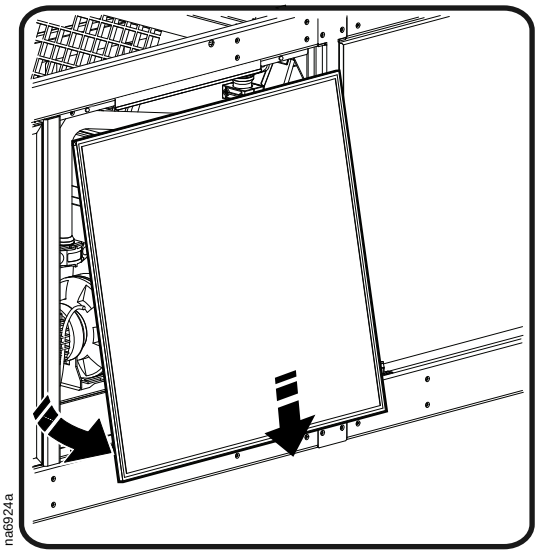
Air Mesh Panels

1. Push the air mesh panel up into the frame.
2. Angle the panel and slide it out of the frame.



OA Filters

1. Push the filter up into the frame.
2. Angle the filter and slide it out of the frame.



External Panels

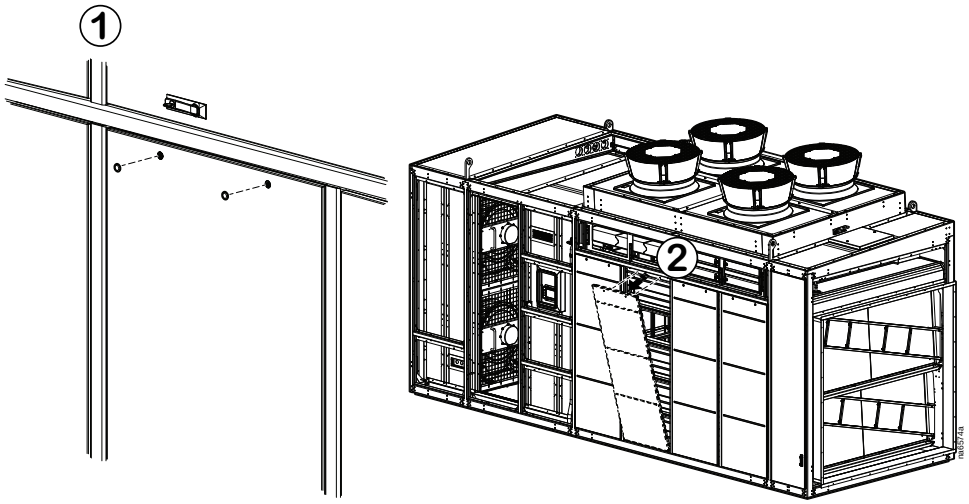
⚠CAUTION

HEAVY EQUIPMENT

The panels are heavy. Use extreme caution when moving.

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

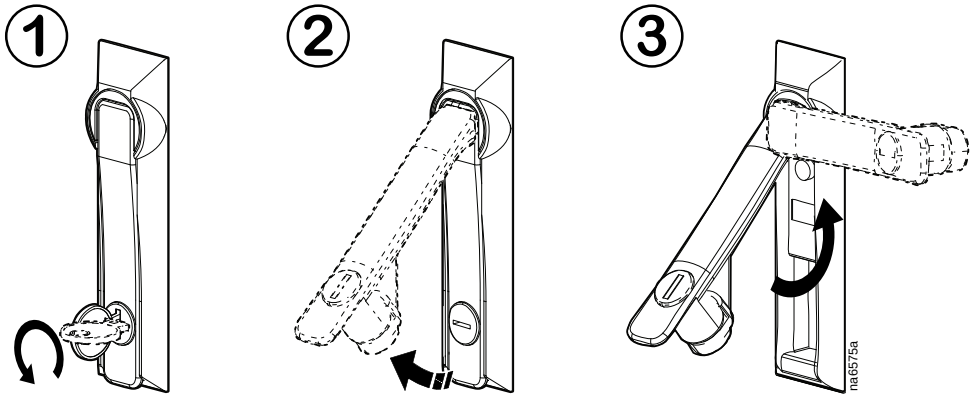
1. Remove the rubber plugs and loosen the captive screws located on the upper part of the panel.
2. Angle the panel and pull it away from the unit.



Hinged Panels

NOTE: Not all hinged panels are locked.

NOTE: The rotation directions will vary from panel to panel.



Mechanical Connections

⚠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.

⚠CAUTION

HEAVY OBJECT

- Use lifting aids or two person lift when installing and moving this equipment.
- Use proper lifting techniques.

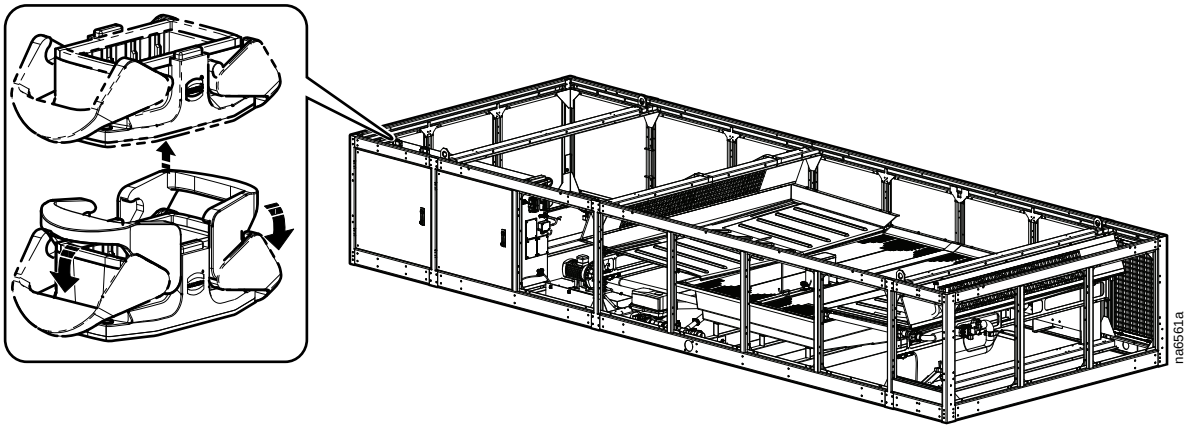
Failure to follow these instructions can result in injury or equipment damage.

Upper-to-Lower Section Connections

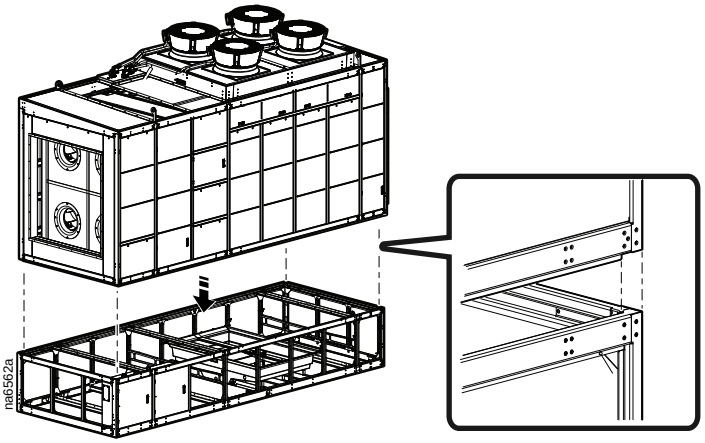
NOTE: It is recommended to remove the protective covers from the upper-to-lower section power connections located on the lower section before placing the upper section on top of the lower section.

NOTE: Some components not shown for easier viewing.

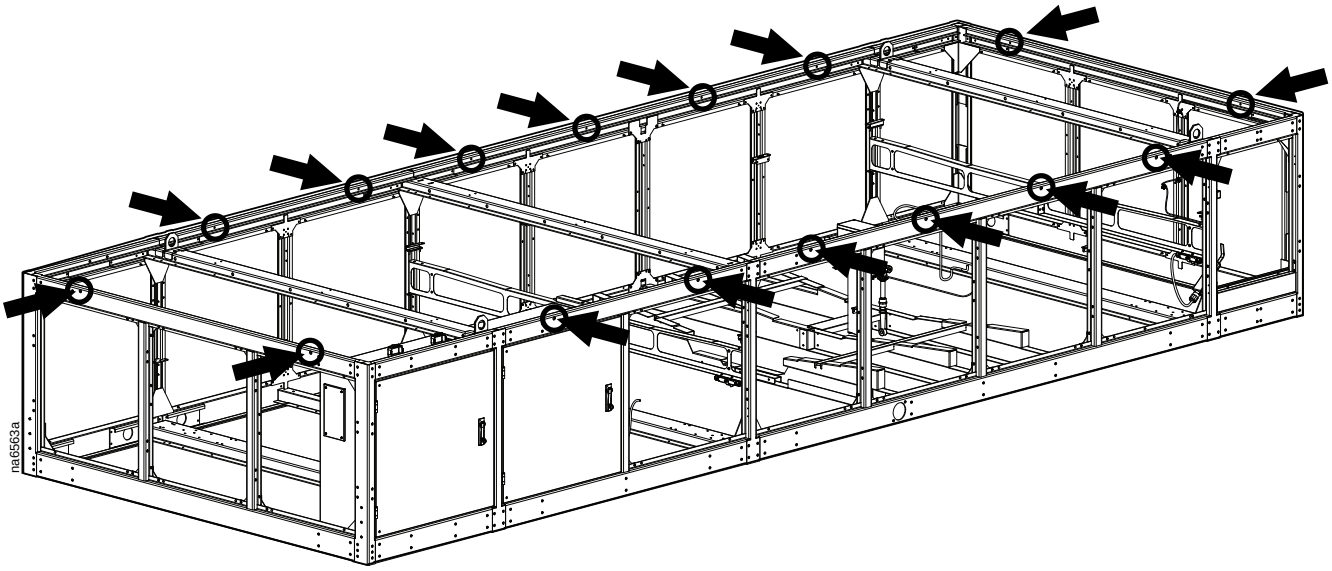
1. Remove the protective covers from the power connections on the lower section.



2. Position the upper section on top of the lower section.



3. Connect the two sections together with 16 M8 TORX® screws tightened to 20 N•M (14.8 ft-lb).



Ducting Dimensions

See *Ducting, page 45*.

Water Connections

NOTICE
PIPES FREEZING External water piping must have adequate freeze protection and must be correctly applied based on local climatic conditions and best practices, such as electrically heat-traced and insulated (supplied by others). **Failure to follow these instructions can result in equipment damage.**

Connection Sizes

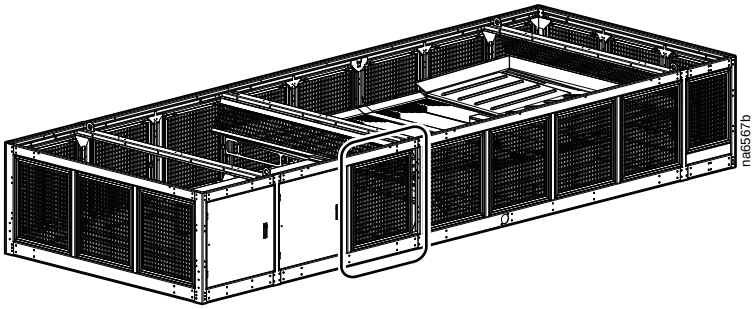
Nominal Connection Sizes	
Supply water inlet – mm (in.) OD (factory-supplied brazed union)	42 (1.7)
Basin water drain – mm (in.) OD (factory-supplied brazed union)	54 (2.1)

Upper-to-Lower Supply Water Connection

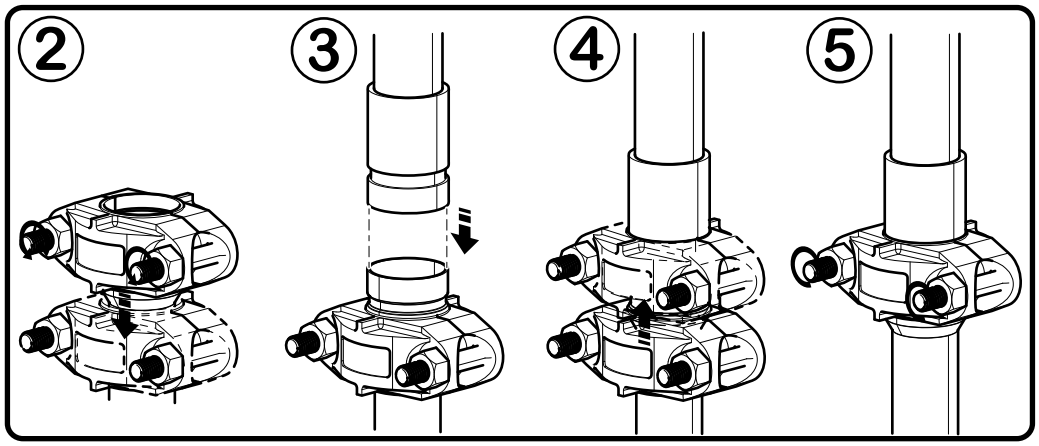
NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA filter to access the piping.



2. Loosen the clamp.
3. Place the upper-section hose connection against the lower-section piping.
4. Maneuver the clamp into place around the connections so that the rubber seal rests in the grooves of the connections.
5. Tighten the clamp around the connections.



Water Inlet Connections

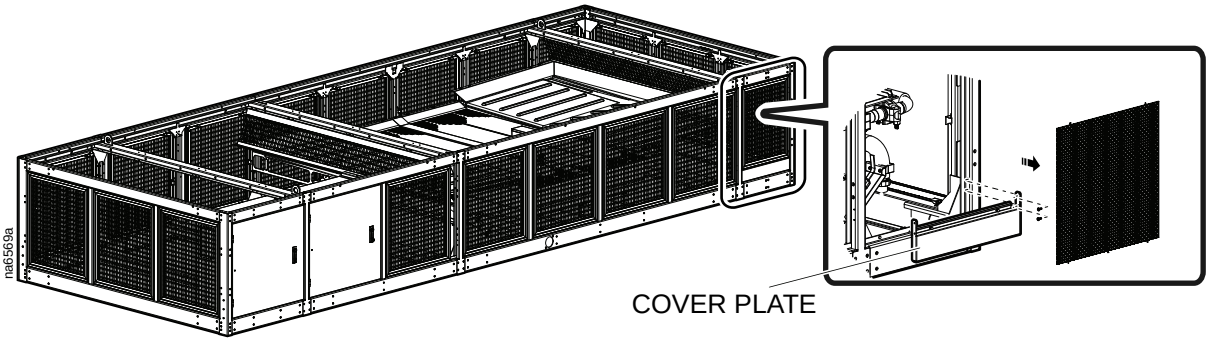
Connection Option 1

The supply water inlet connection can be made through the side of the unit. A hole for pipe access will need to be cut in the cover plate during installation to allow for pipe routing through the side of the unit.

NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA air filter and cover plate to access the connection.



2. Loosen the union nut (❸) and remove the union tailpiece (❶).

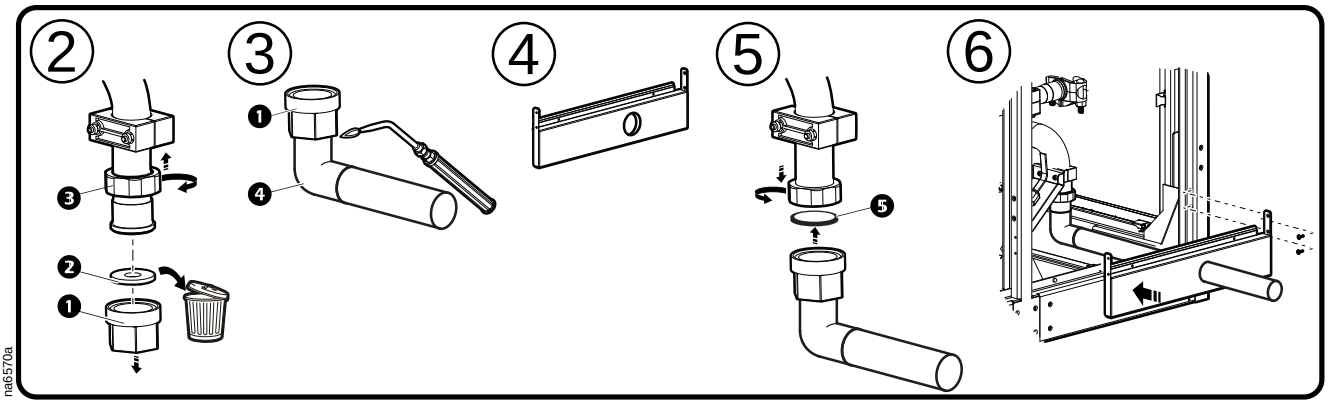
   NOTE: Make sure the gasket inside the pipe is not damaged and remains in place. Discard the blanking plate (❷).

3. Braze the field-supplied piping (❹) onto the union tailpiece (❶).
4. Cut a hole in the cover plate to accommodate the water inlet piping.
5. Reconnect the union tailpiece and field-supplied piping to the unit piping with the union nut.

   NOTE: Gasket (❺) may or may not need to be replaced with a gasket from the ship-loose kit.

6. Replace the cover plate.

NOTE: Do not replace the air mesh panel or OA air filter yet if trim cooling condensate drain connections need to be made.



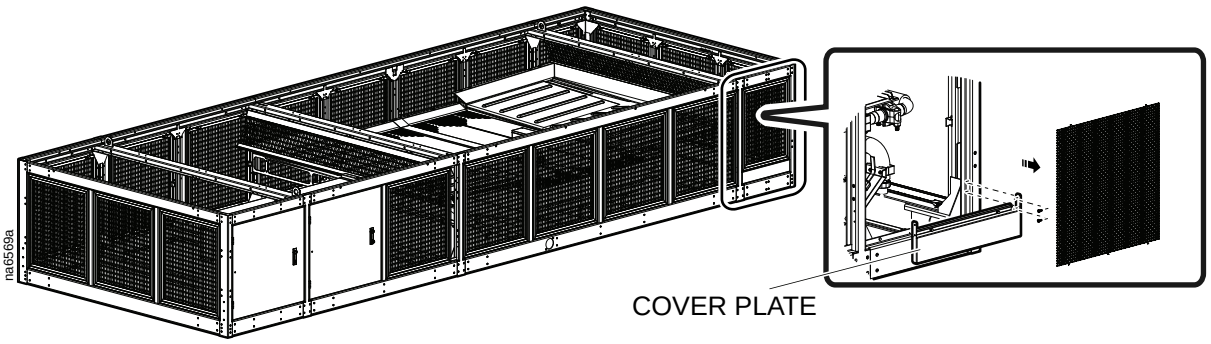
Connection Option 2

The supply water inlet connection can be made through the bottom of the unit.

NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA air filter and cover plate to access the connection.



2. Loosen the union nut (❸) and remove the union tailpiece (❶).

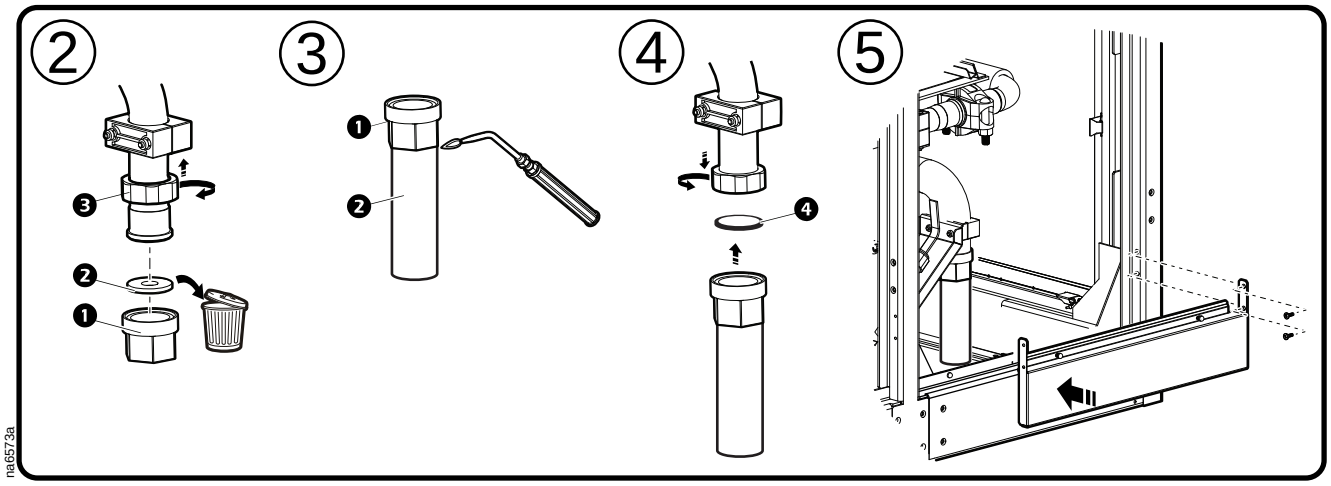
   NOTE: Make sure the gasket inside the pipe is not damaged and remains in place. Discard the blanking plate (❷).

3. Braze the field-supplied piping (❹) onto the union tailpiece (❶).
4. Reconnect the union tailpiece and field-supplied piping to the unit piping with the union nut.

   NOTE: Gasket (❺) may or may not need to be replaced with a gasket from the ship-loose kit.

5. Replace the cover plate.

   NOTE: Do not replace the air mesh panel or OA air filter yet if trim cooling condensate drain connections need to be made.


2
3
4
5
na6573a

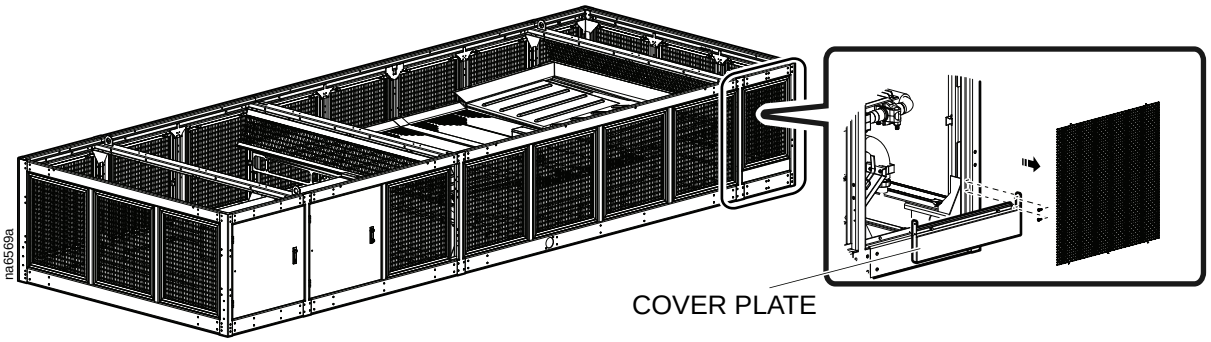
Condensate Drain Connection

NOTE: This section only applies if the trim cooling option in included in the unit.

NOTE: Some components not shown for easier viewing.

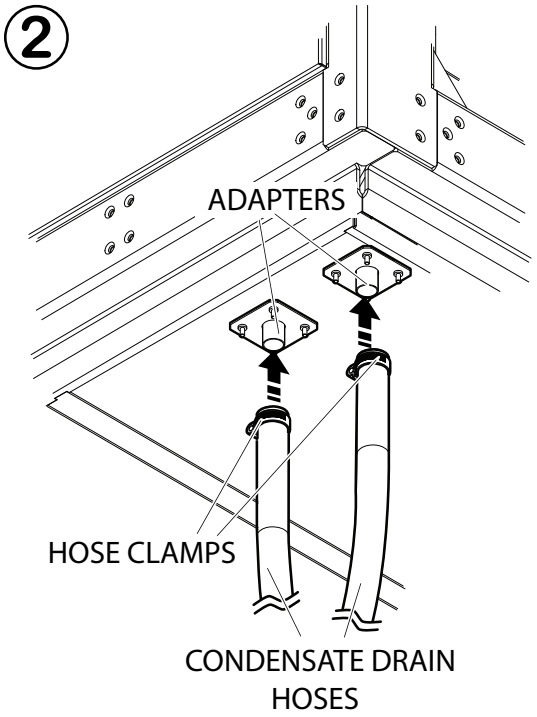
See *Panel Removal, page 55* for panel or filter removal instructions.

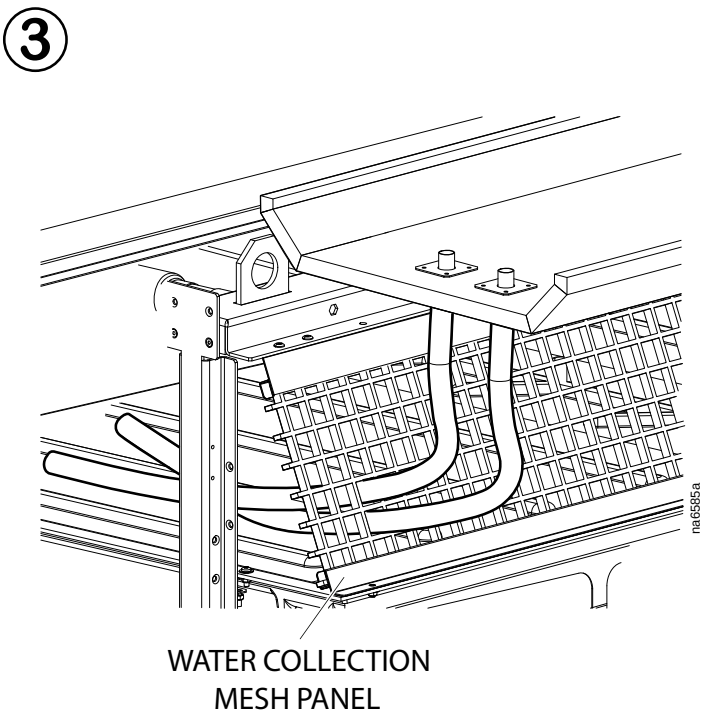
1. Remove the air mesh panel and cover plate to access the connection.



2. Connect the condensate drain hoses to the condensate drain hose adapters.
3. Route the condensate drain hoses through the water collection mesh panel.

   NOTE: A p-trap needs to be formed in the drain hoses before routing the hoses through the mesh panel.





Basin Drain Connection

The basin drain connection is a 54-mm OD (2.1 in.), brazed connection made in the field during installation. There are two options available for this connection: through the side of the unit or through the bottom.

IMPORTANT: An air gap between the unit piping and the customer drain system is required. The drain system should be sized for a peak flow rate of 65 gpm (4.1 l/s) under gravity flow conditions.

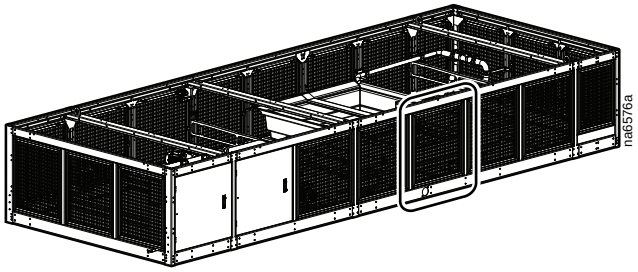
Connection Option 1

The basin drain connection can be made through the side of the unit by removing the cover plate over the hole for pipe access or by cutting a hole in the cover plate.

NOTE: Some components not shown for easier viewing.

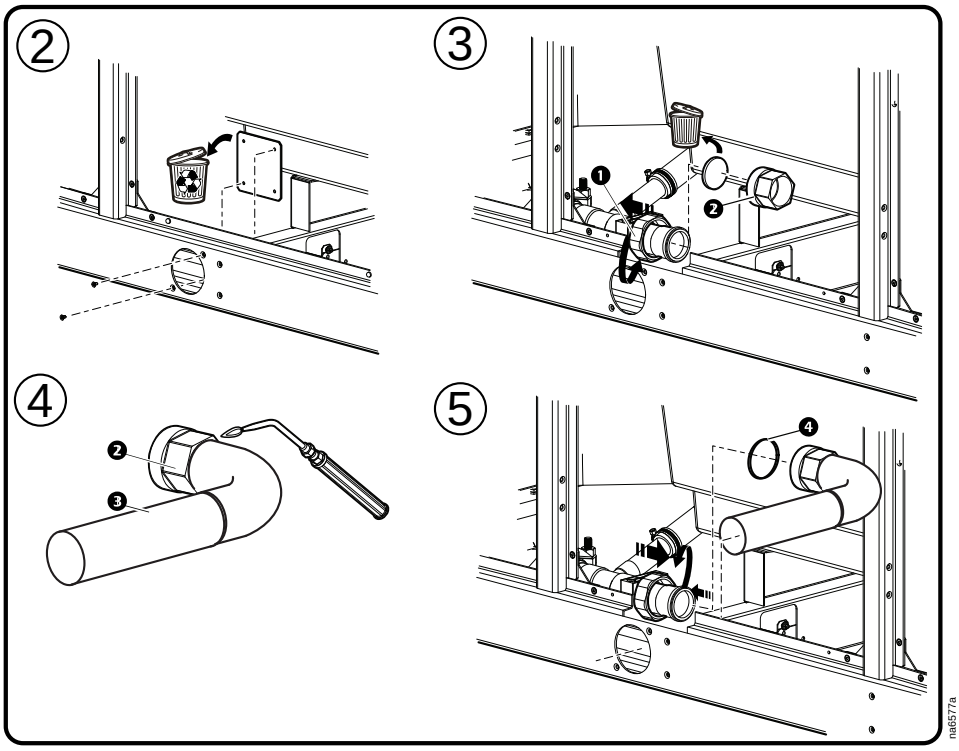
See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA filter.



2. Remove the cover plate.
3. Loosen the union nut (❶) and remove the union tailpiece (❷).

   NOTE: Make sure the gasket inside the pipe is not damaged and remains in place. Gasket may be replaced with gasket (❹) included in the ship-loose kit. Discard the blanking panel.
4. Braze the field-supplied piping (❸) onto the union tailpiece (❷).
5. Reconnect the union tailpiece and field-supplied piping to the unit piping with the union nut.



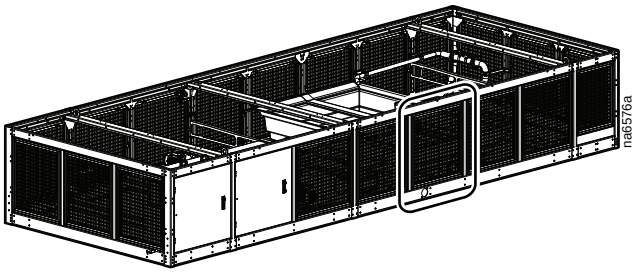
Connection Option 2

The basin drain connection can be made through the bottom of the unit.

NOTE: Some components not shown for easier viewing.

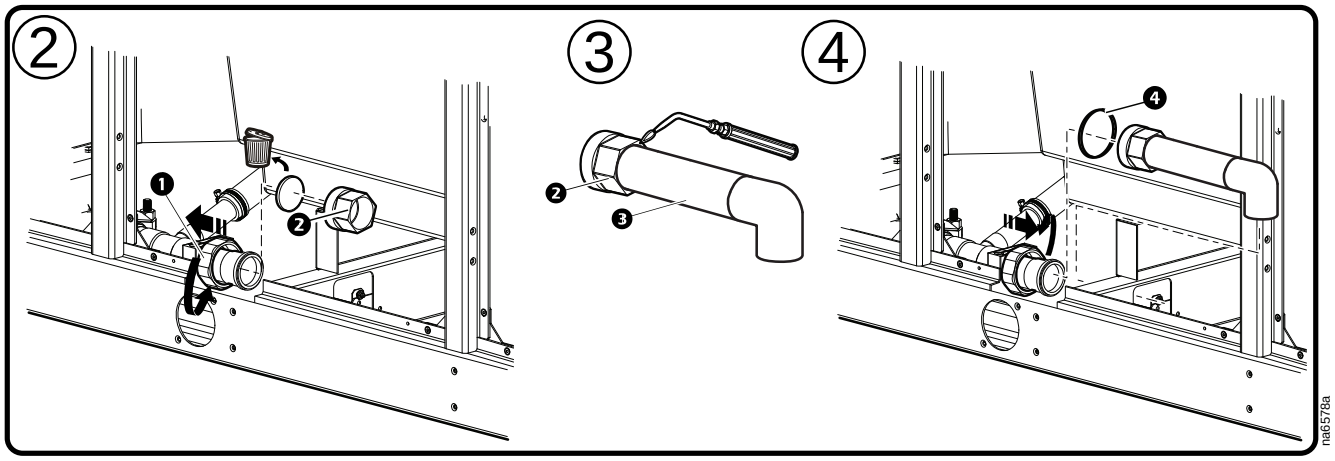
See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA filter.



2. Remove the cover plate.
3. Loosen the union nut (❶) and remove the union tailpiece (❷).

   NOTE: Make sure the gasket (❹) inside the pipe is not damaged and remains in place. Gasket may be replaced with gasket included in the ship-loose kit. Discard the blanking panel.
4. Braze the field-supplied piping (❸) onto the union tailpiece (❷).
5. Reconnect the union tailpiece and field-supplied piping to the unit piping with the union nut.


2
1
2
3
2
3
4
4
na6578a

Electrical Connections

⚠⚠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

ELECTRICAL HAZARD

- 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 HAZARD

Before obtaining access to terminals, all supply circuits must be disconnected.

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

⚠WARNING

PERSONAL PROTECTIVE EQUIPMENT REQUIRED

During installation, authorized personnel must wear approved personal protective equipment (PPE).

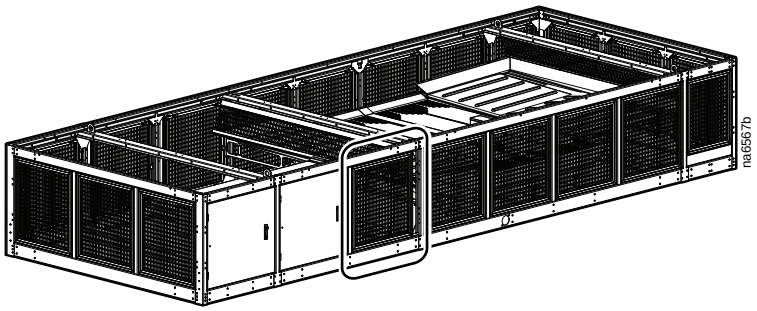
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Customer Wiring Connections

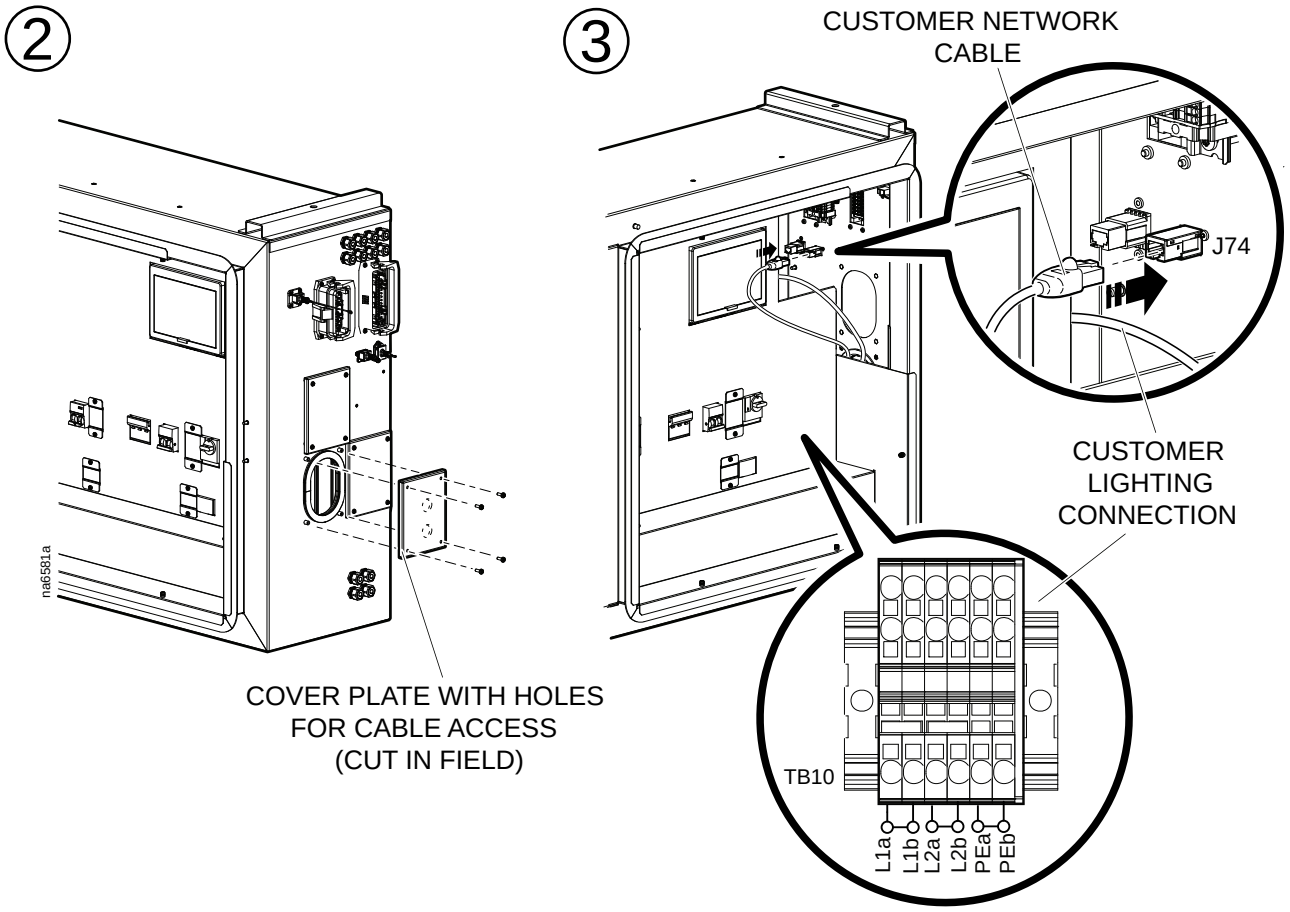
NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA filter to access the connections.

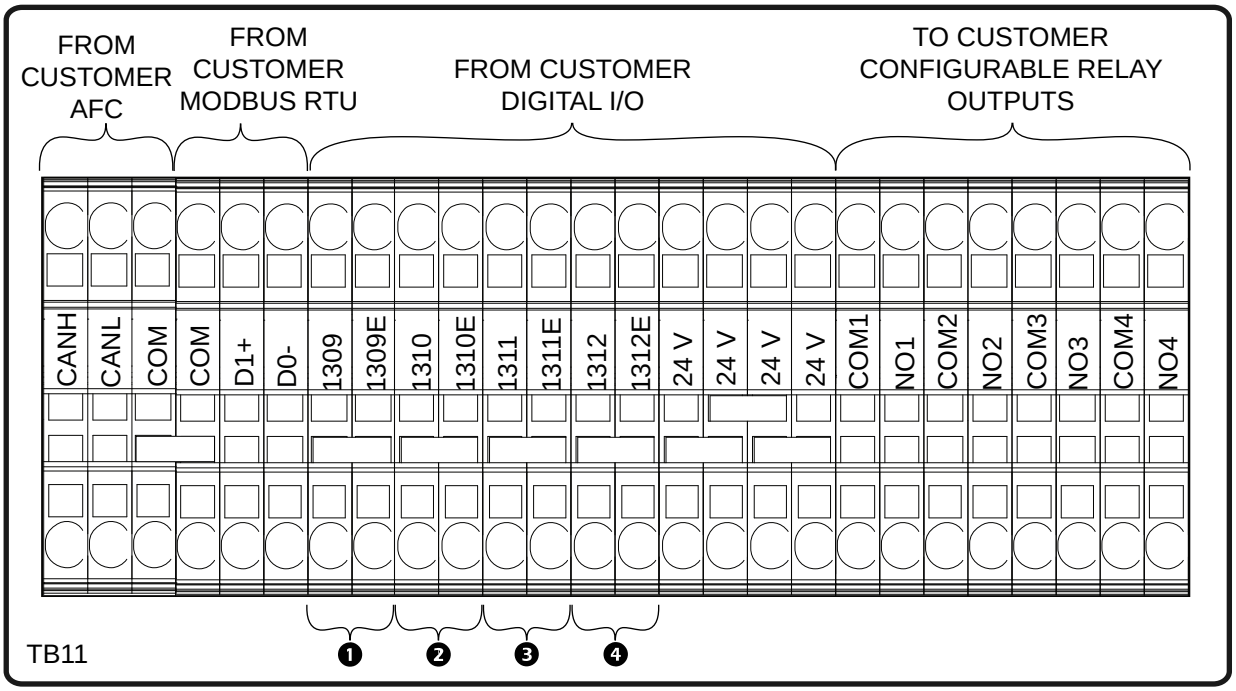


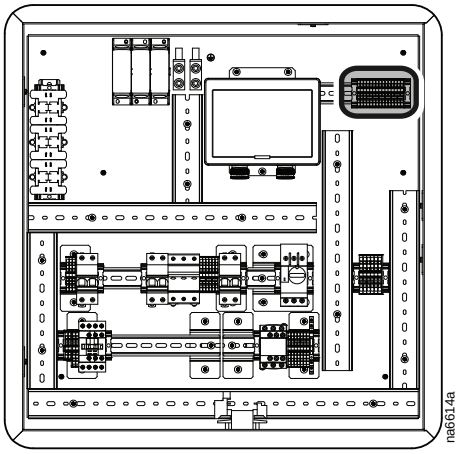
2. Remove a cover plate (or multiple cover plates) and cut holes for cable access into the electrical panel.
3. Connect customer power for lighting (behind protective panel) and the customer network cable.



See the wiring schematics included with the unit for more information on wiring connections.

Configurable Input Connections





NOTE: Panel shown is the lower section customer connection electrical panel.

Item	Description
1	Remote on/off
2	Smoke/fire/water sensor
3	Damper status
4	Reserved

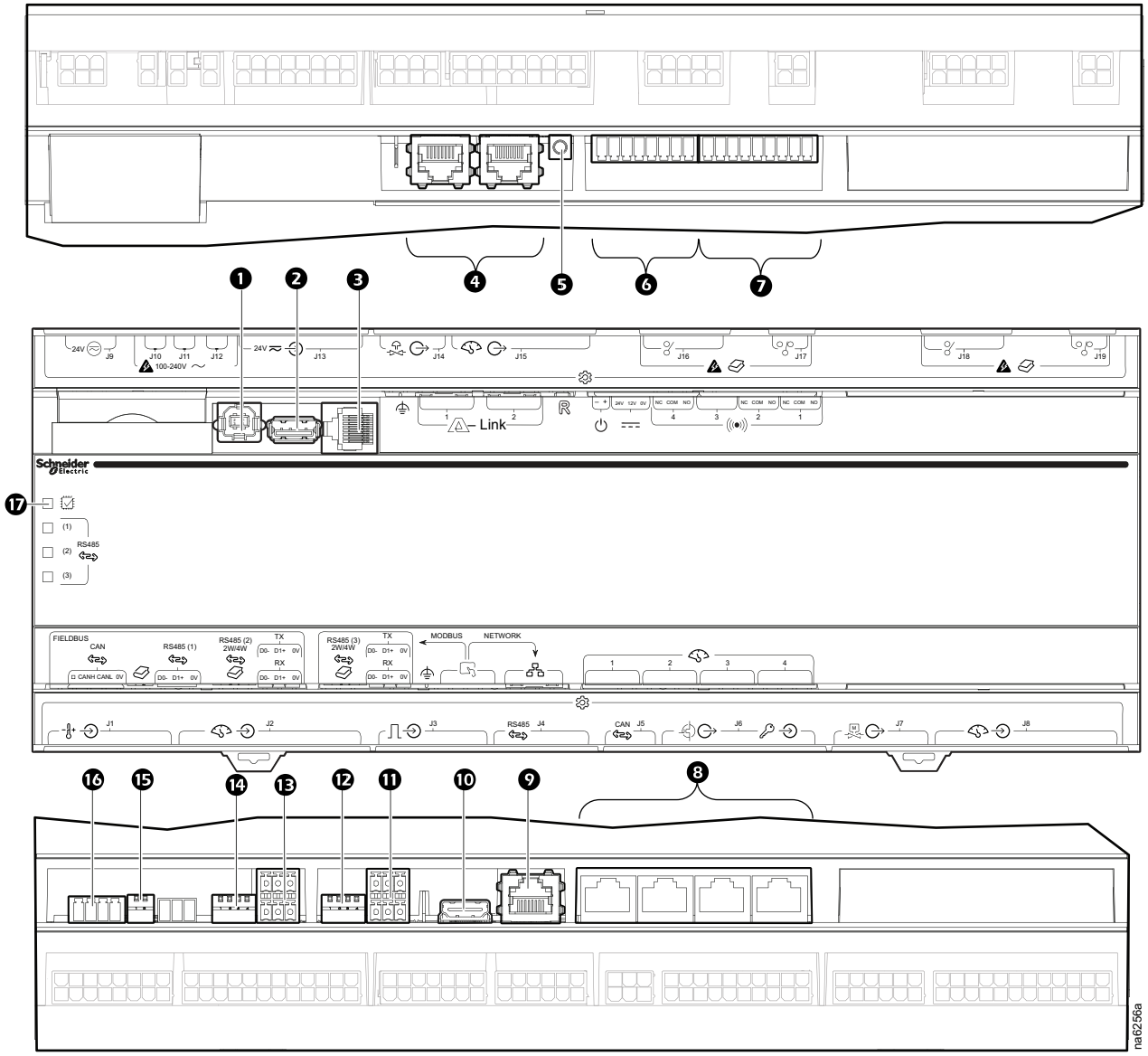
Modbus

The unit supports Modbus RTU. The Modbus termination is set via a dip switch on the controller located in the service vestibule. Position 3 should be placed in the down position to apply termination (⓬ in the table below). Make sure that positions 1 and 2 are in the down position.

NOTE: This information is for a 2-wire Modbus connection.

NOTE: The upper section electrical panel is located inside the service vestibule.

NOTE: This dip switch is set in the factory and can be checked during commissioning and start-up of the unit.



Item	Description
❶	USB device port
❷	USB host port
❸	Serial port
❹	A-Link ports
❺	Reset button
❻	Output relay 4/standby input
❼	Output relay 1–3
❽	Universal sensor ports
❾	Network connection

Item	Description
❿	Touch screen display connection
⓫	Modbus connection
⓬	Modbus configuration switches
⓭	Fieldbus Modbus connection
⓮	Fieldbus Modbus configuration switches
⓯	Fieldbus CANbus configuration switches
⓰	Fieldbus CANbus connection
⓱	Processor status LED

Discrete Inputs

The digital inputs are for connection to safety devices, alarms, device status indictors, and remote control signals. These inputs are all optically isolated from the other terminals and operate at 24 VAC, which is provided at the terminal block.

For each input, there are two (2) associated terminal blocks, e.g., 1309 and 1309E. For a 250–kW unit, the connection can be made to either terminal block, as the terminal blocks are connected with a jumper.

For a 500–kW system, there are two (2) options for the digital input connections:

- Option 1 (default)
  - For any digital input, a single field connection can be made to the appropriate terminal block connection for either the main or expansion module, as the input is internally connected between the two (2) modules. For example, this would allow for a single remote on/off connection to be made to a 500–kW system, which will then control both the main and expansion module.
- Option 2
  - For any digital input, separate field connections can be made to the appropriate terminal block connection(s) for either the main or expansion module, and then the associated jumper is removed from the terminal blocks. This allows for independent control of each of the two (2) modules. For example, this would allow for two separate remote on/off connections to be made to a 500–kW system: one (1) for the main module and one (1) for the expansion module.

The default configuration for all of the inputs is normally open such that if no device is connected, the unit does not alarm. The configuration can be changed from the display interface, change the setting for **Remote On/Off Normal State**, **Smoke Fire Water Normal State**, or **Damper Status Normal State** from **Normally Open** to **Normally Closed** on the **Main > Main Module/Exp Module > Service > HW CFG** screen.

Active Flow Controller (AFC) Installation

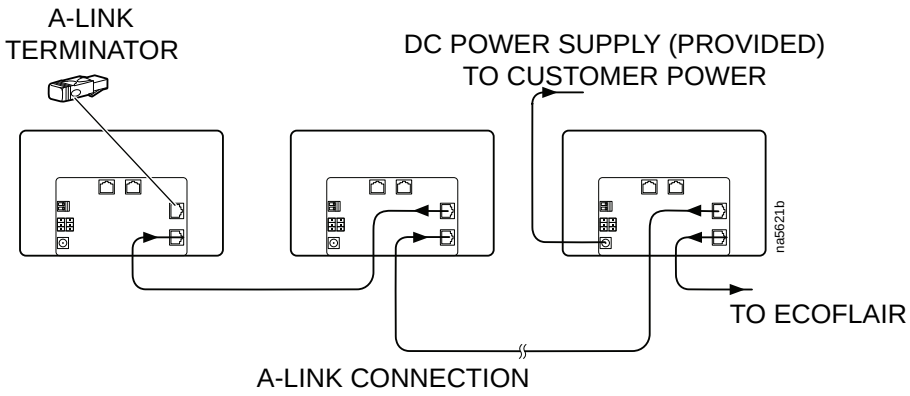
Active Flow Controller devices should be connected directly to an Ecoflair Indirect Air Economizer only if a single 250-kW unit is being installed. If more than one 250-kW Ecoflair unit or a 500-kW Ecoflair unit is being installed, an Automation Server must be used. Up to four (4) AFC devices can be connected to a single 250-kW unit.

See the *Active Flow Controller User Manual* to install the AFC in the IT space and for component identification of the AFC unit.

Communication and Electrical Connections

NOTE: The maximum cable length is 305 m (1000 ft).

NOTE: It is recommended to connect the power supply to the AFC that is connected directly to the Ecoflair unit.



Ecoflair-to-AFC Connections

The recommended type of cable is CAT-5 or equivalent. The maximum cable length is 305 m (1000 ft).

See *Configurable Input Connections, page 70* for terminal block layout.

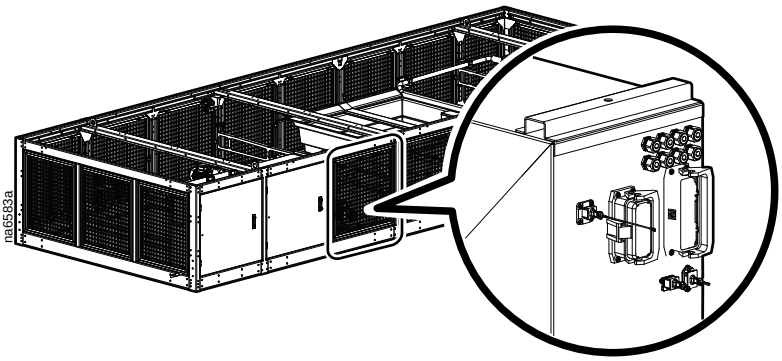
AFC RJ-45 Pin	Ecoflair TB12 Terminal Block
1	CANH
2	CANL
4 and 5	0V (COM)

Upper-to-Lower Section Analog I/O, DIgital I/O, and Communication Connections

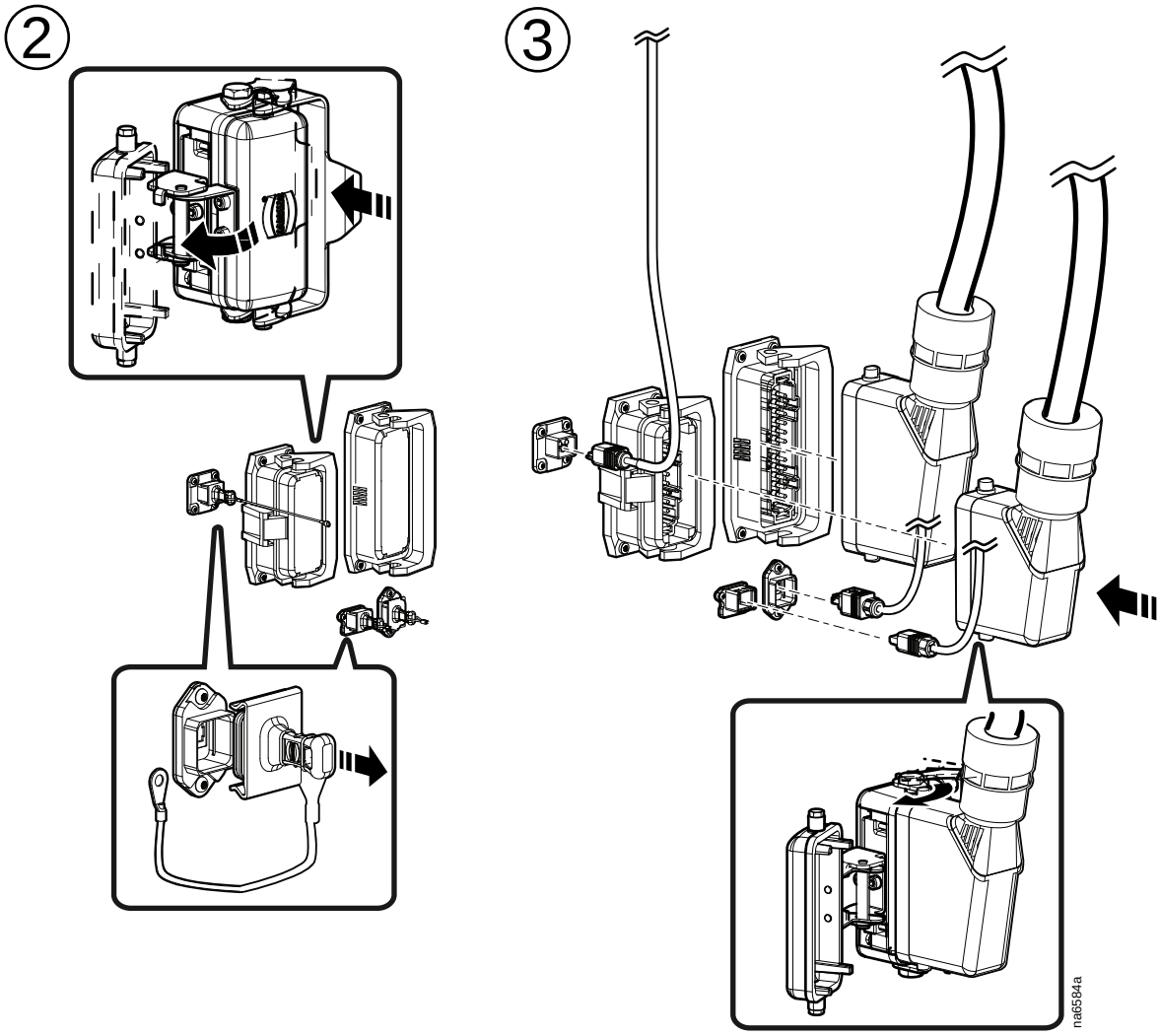
NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.

1. Remove the air mesh panel or OA filter to access the connections.



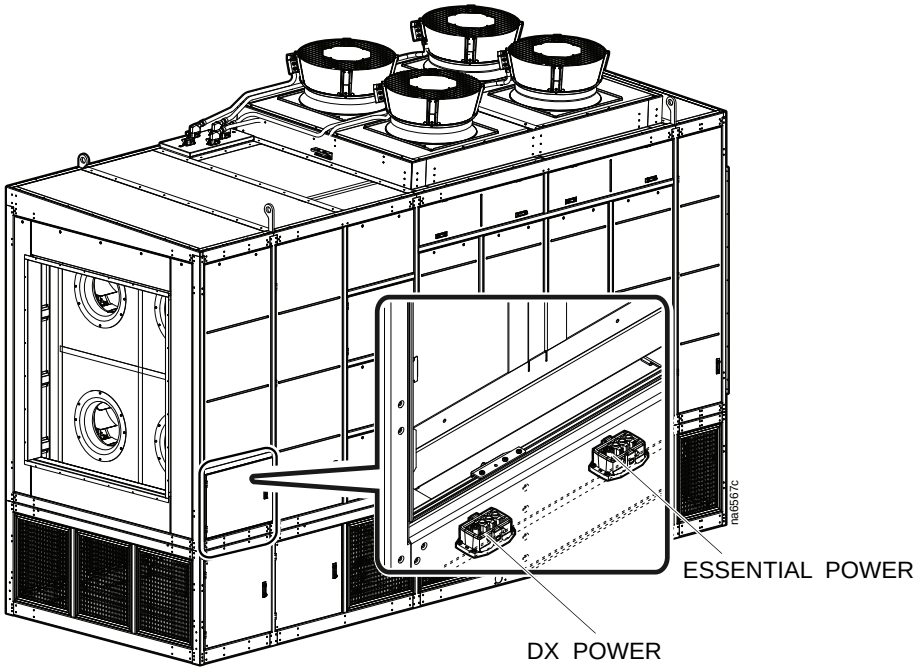
2. Remove the protective covers from the communication connections.
3. Make communication connections from the upper section to the lower section.



Upper-to-Lower Section Power Connections

NOTE: Some components not shown for easier viewing.

1. Open the door on the upper section to access the power connection.



2. Connect the DX and essential power connections.

   NOTE: The DX power connection is only available if the unit has the DX trim cooling option.

Power Connection—Lower Section

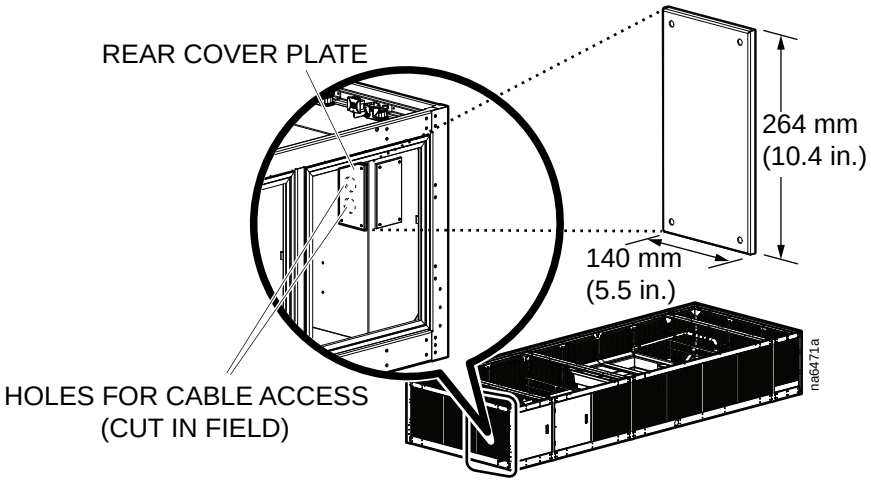
The Ecoflair Indirect Air Economizer unit provides three options for routing power to the unit through the electrical panel: rear access, side access, or bottom access.

Connection Option 1

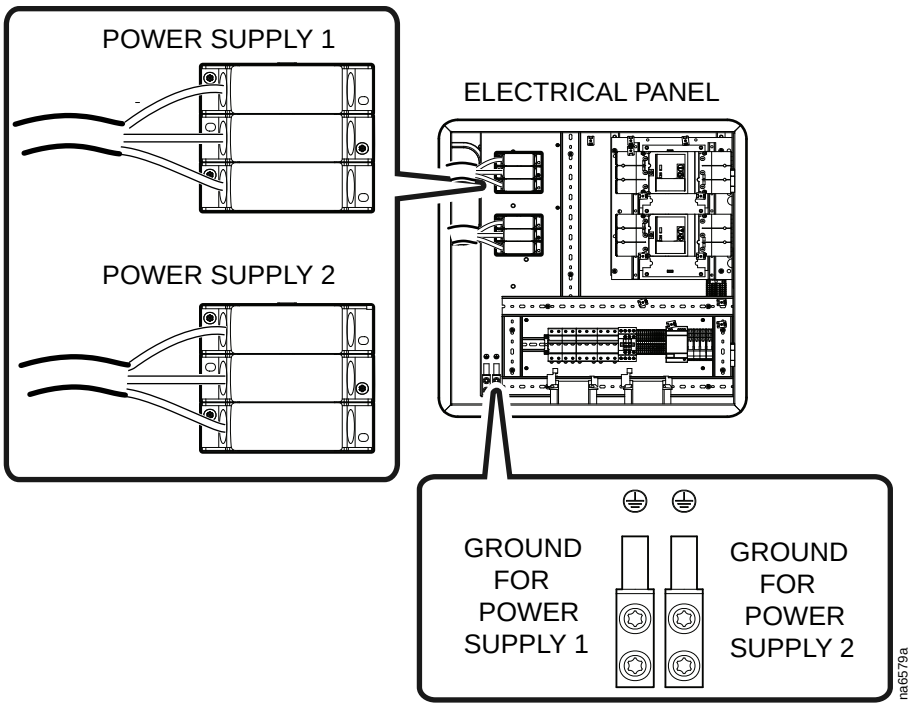
Power cables to the unit can be routed through a hole made by the installer in the cover plate on the rear side of the electrical panel. The cover plate can be removed to make creation of the hole easier.

NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.



NOTE: For units with a single power supply, only power supply 1 will be present.

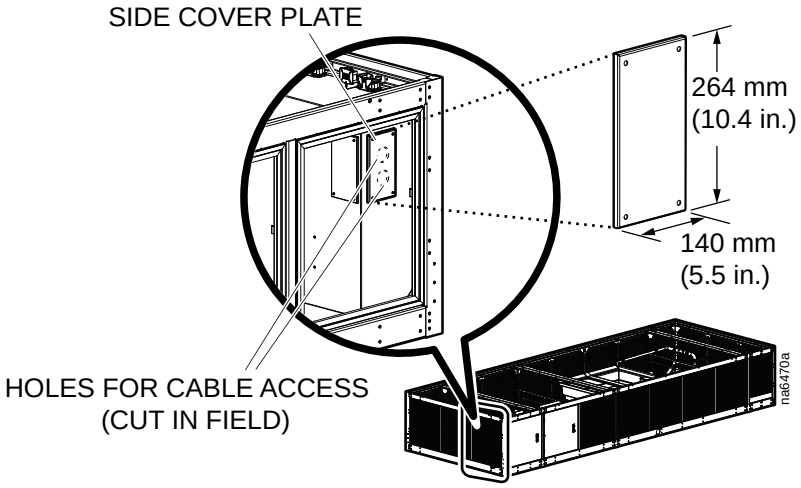


Connection Option 2

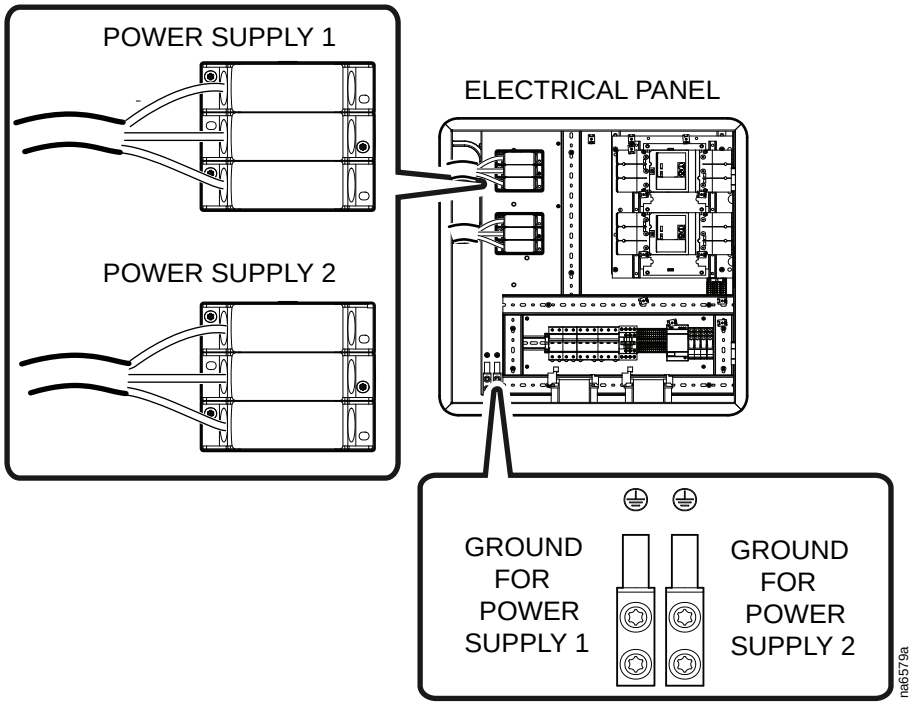
Power cables to the unit can be routed through a hole made by the installer in the cover plate on the side of the electrical panel. The cover plate can be removed to make creation of the hole easier.

NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.



NOTE: For units with a single power supply, only power supply 1 will be present.

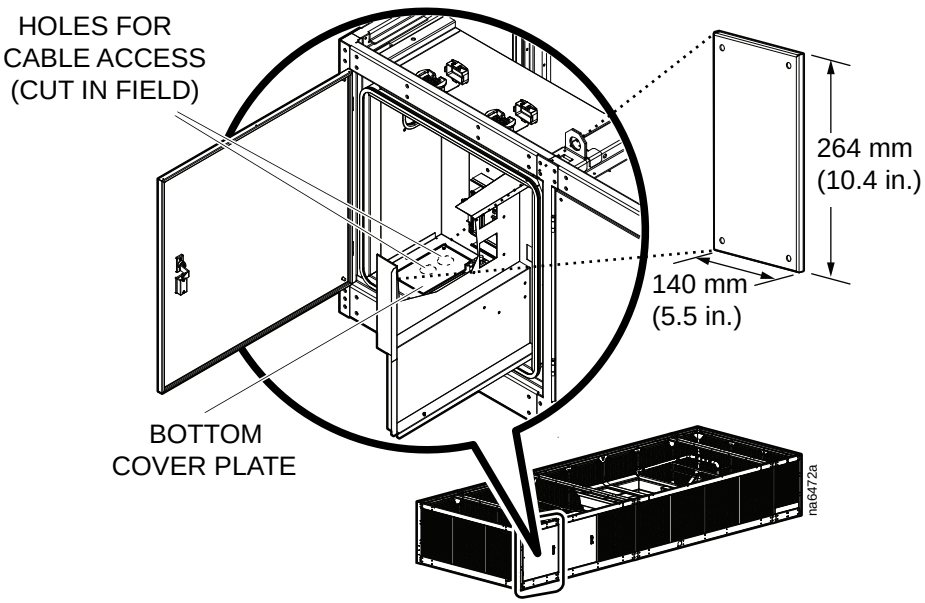


Connection Option 3

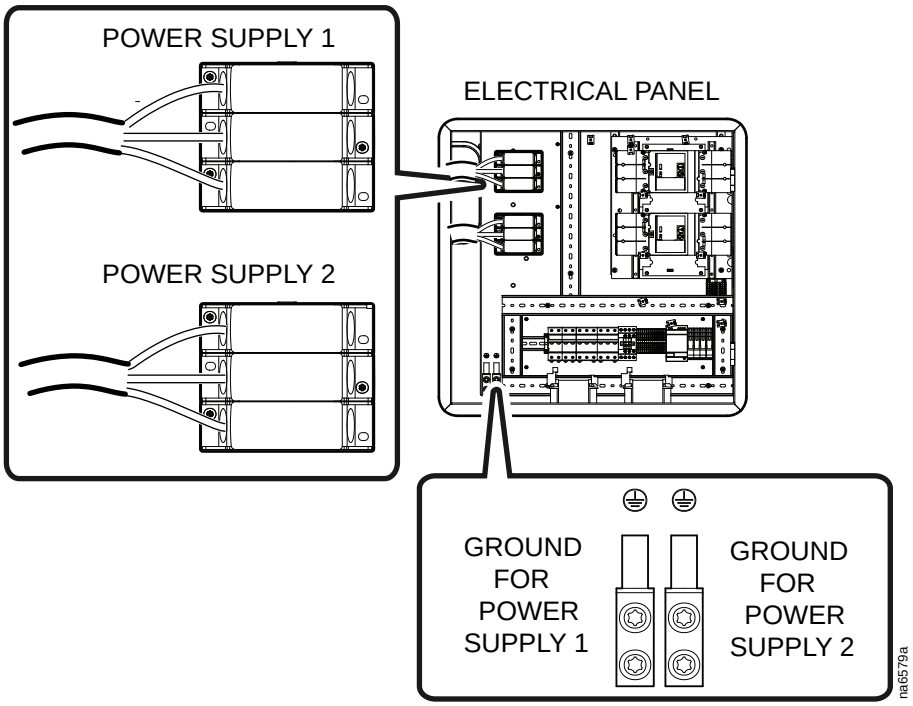
Power cables to the unit can be routed through a hole made by the installer in the cover plate on the bottom of the electrical panel. The cover plate can be removed to make creation of the hole easier. The bottom cover plate is accessible from inside the electrical panel.

NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel or filter removal instructions.



NOTE: For units with a single power supply, only power supply 1 will be present.

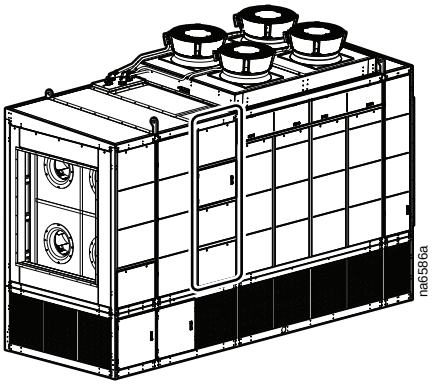


Display Interface Location

The display interface may be moved to a lower access location to provide better access for the user.

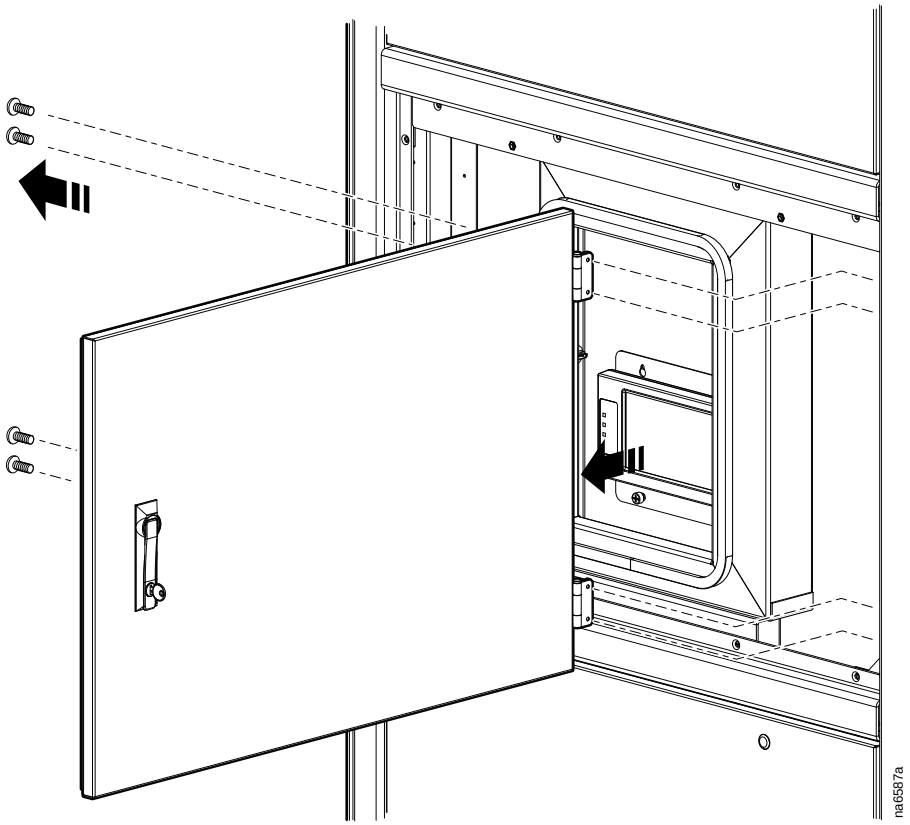
NOTE: Some components not shown for easier viewing.

See *Panel Removal, page 55* for panel removal instructions.

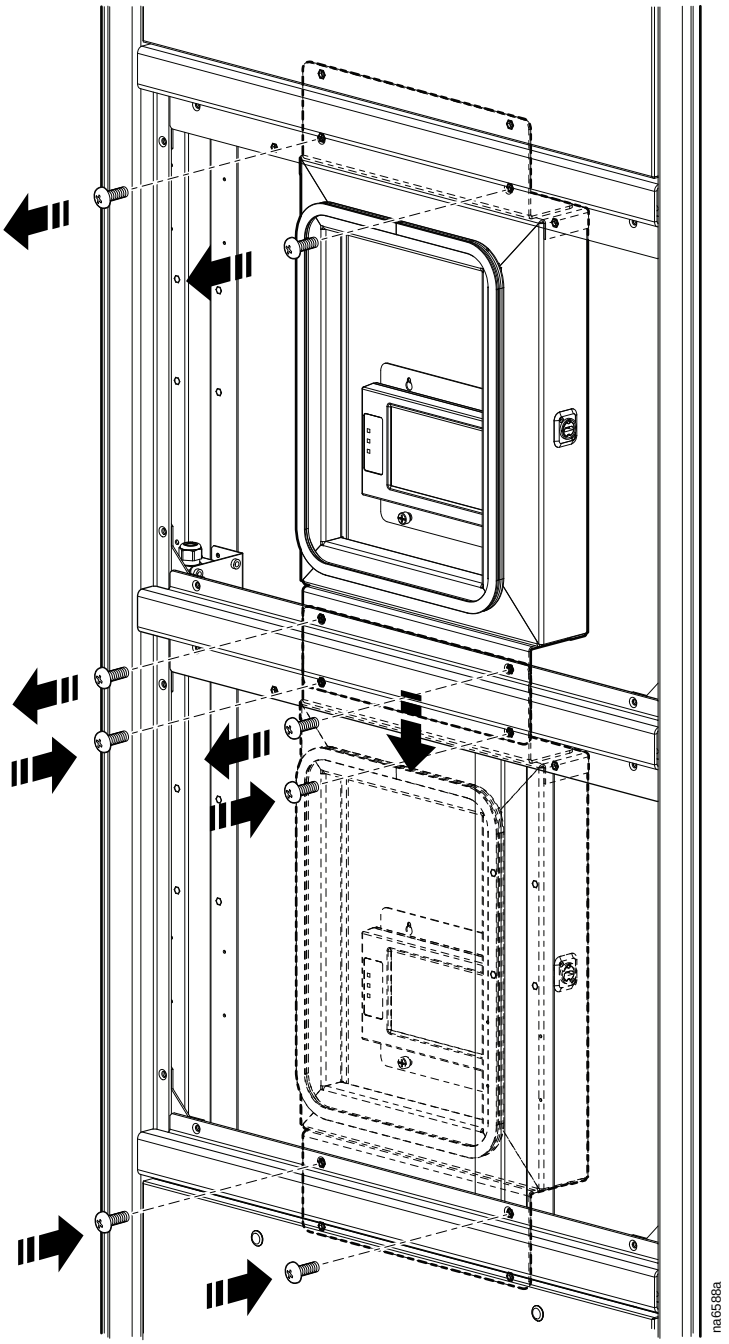


1. Remove the display interface access door and the external panel covering the new display interface location.

   NOTE: The display interface may be relocated to only the space directly below the original position.



2. Move the display interface box from its current location to its new location.



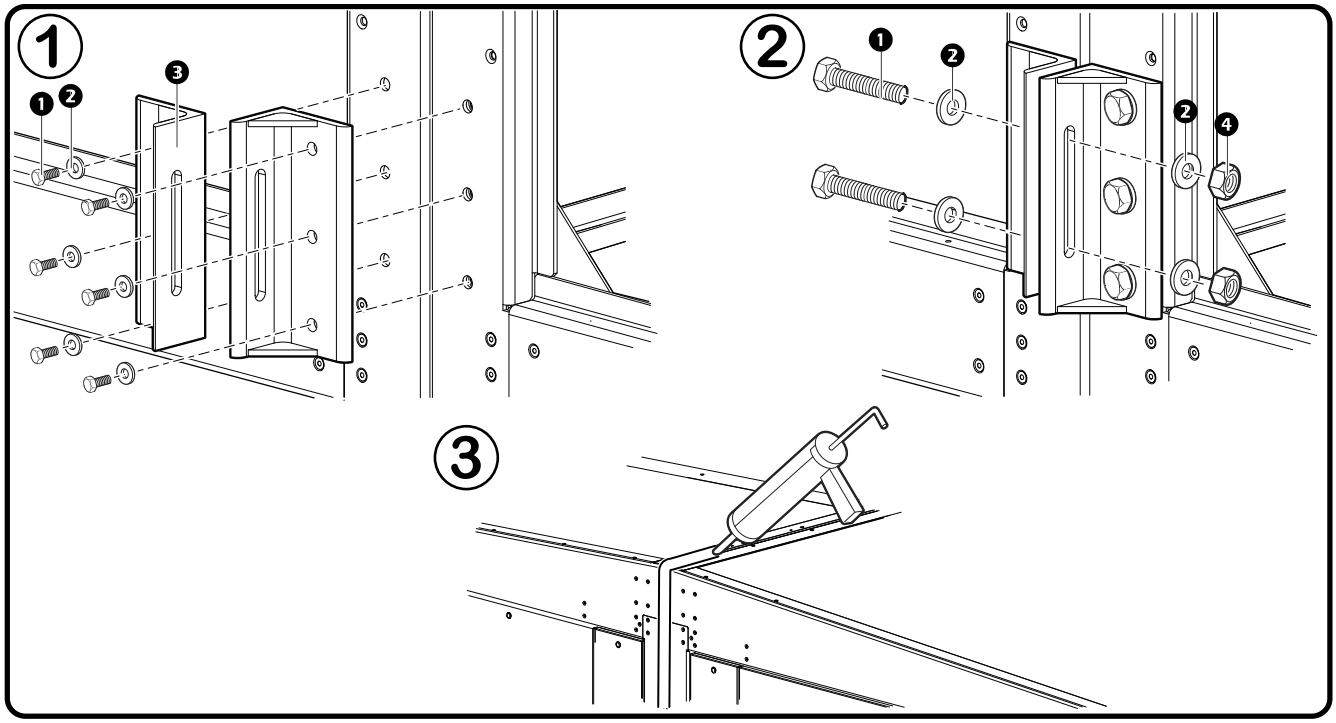
3. Replace the display interface access door in front of the new display location and the external panel in front of the previous display interface location.

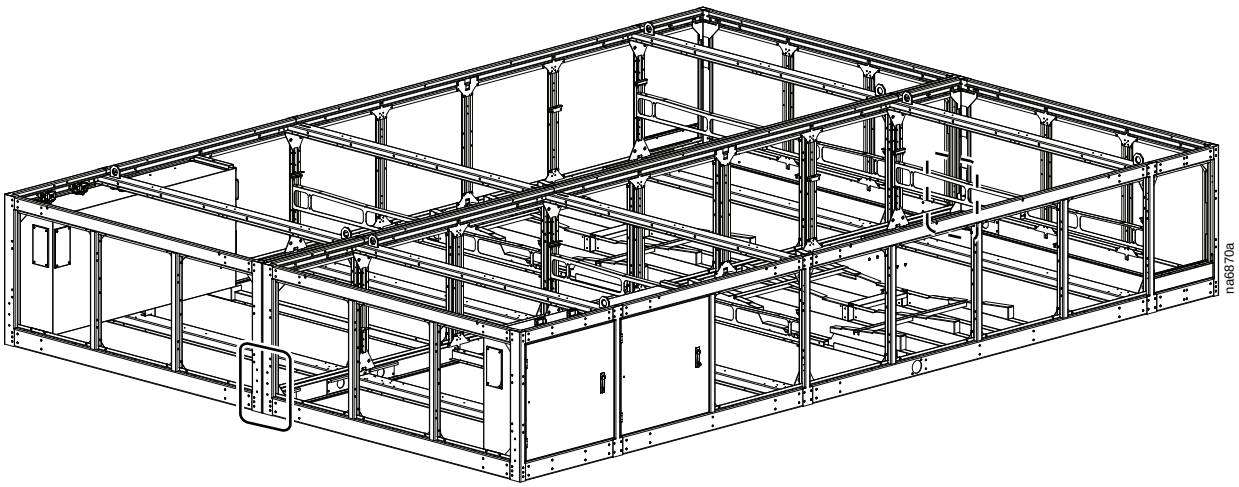
IAEC50*** Connections

Mechanical Connections

NOTE: Upper sections and some components not shown for easier viewing.

1. Attach the brackets (❸) to the supply and return air sides of the lower sections with the M10x30 bolts (❶) and washers (❷).
2. Connect the brackets with the M10x30 bolts (❶), washers (❷), and hex nuts (❹).
3. Use caulk on the seam between the two IAEC25*** sections.

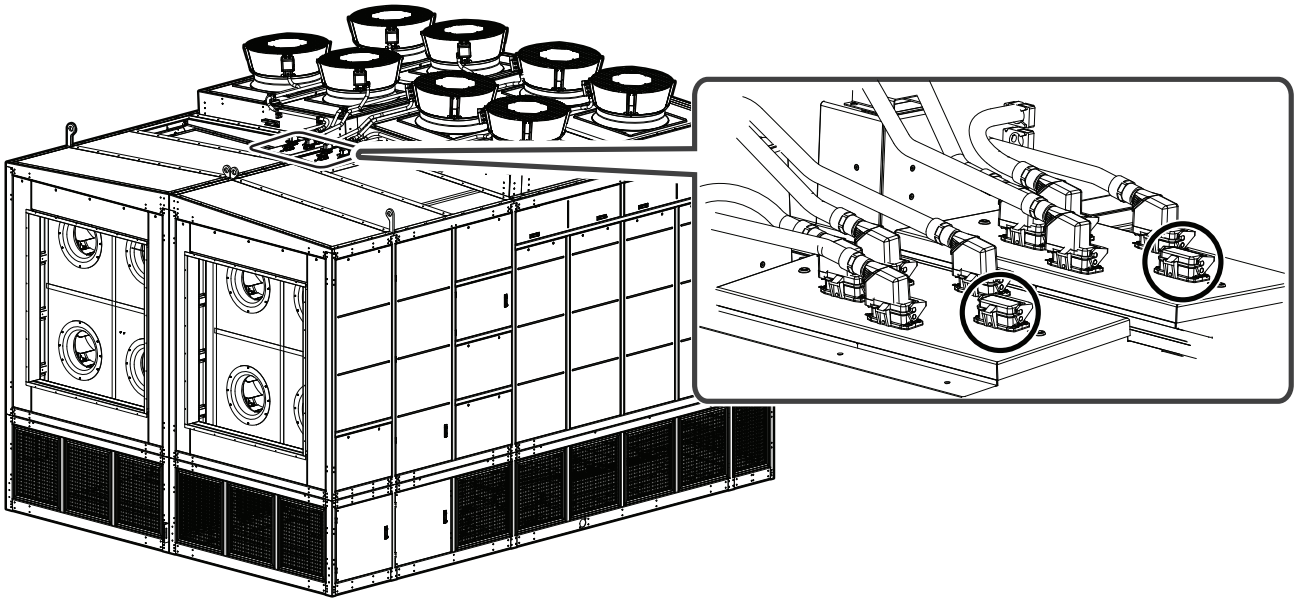


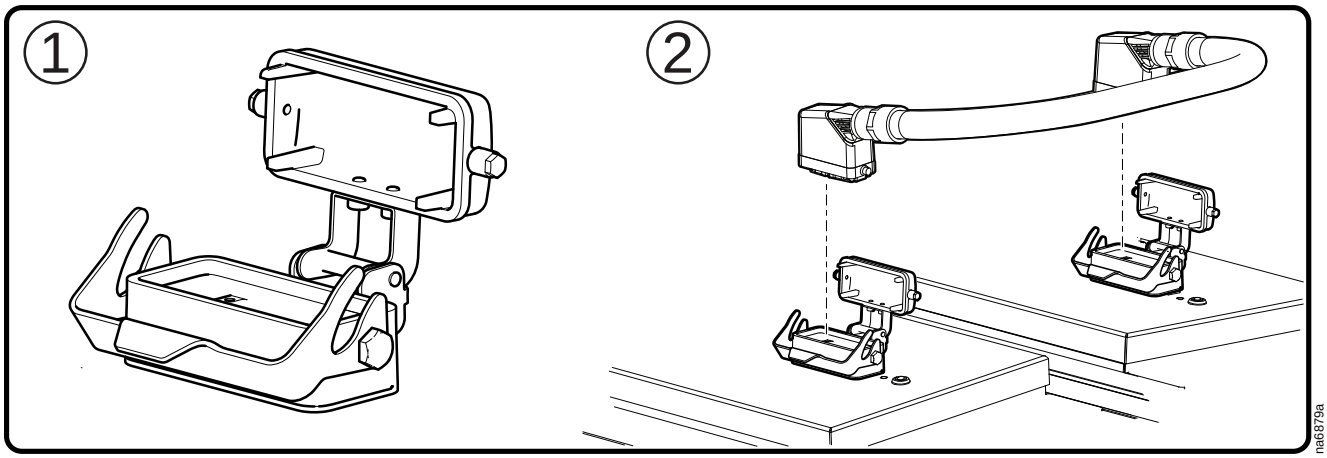


Communication Connections

NOTE: Some components not shown for easier viewing.

1. Open the communication connection port on the top of each unit.
2. Connect the communication cable between the two sections.





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/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.

Schneider Electric
35 rue Joseph Monier
92500 Rueil Malmaison
France

+ 33 (0) 1 41 29 70 00

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.

© 2017 – 2019 Schneider Electric. All rights reserved.

990-9964C-001 / 06MM0350@00B0120