

Galaxy VM

Modular Battery Cabinets

Installation

GVMMODBCW, GVMMODBCN

09/2018



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

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

Table of Contents

Important Safety Instructions — SAVE THESE	
INSTRUCTIONS	5
Symbols in This Manual	5
Electromagnetic Compatibility	6
FCC Statement	6
Safety Precautions	6
Battery Safety	9
Symbols Used	10
Specifications	11
Modular Battery Cabinets Weights and Dimensions	11
Torque Specifications	11
Environment	11
Introduction	12
Overview of Supplied Installation Kits	12
Installation Kit 0M-814642	12
Installation Kit 0N-9254	12
Installation Kit 0M-816683	14
Installation Kit 0M-816815	14
Installation Procedure	15
Installation Procedure for Line-Up Modular Battery Cabinet Systems	15
Mechanical Assembly	16
Remove the Modular Battery Cabinets from the Pallet	16
Mount the Rear Anchoring Brackets for Modular Battery Cabinets	20
Position the Modular Battery Cabinets	21
Interconnect the Modular Battery Cabinets	23
Interconnect the Modular Battery Cabinet and the Power Cabinet	28
Connect the Signal Cables	32
Mount the Front Anchoring Brackets on the Modular Battery Cabinets	36
Install Batteries in the Modular Battery Cabinet	37
Install Seismic Kit (Option)	41

Important Safety Instructions — SAVE THESE INSTRUCTIONS

This manual contains important safety instructions for the models Galaxy VM Modular Battery Cabinet Wide and Galaxy VM Modular Battery Cabinet Narrow that should be followed during installation and maintenance.

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.

Symbols in This Manual



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.

Electromagnetic Compatibility

NOTICE

RISK OF ELECTROMAGNETIC DISTURBANCE

This is a product Category C3 according to IEC 62040-2. This is a product for commercial and industrial applications in the second environment - installation restrictions or additional measures may be needed to prevent disturbances. The second environment includes all commercial, light industry, and industrial locations other than residential, commercial, and light industrial premises directly connected without intermediate transformer to a public low-voltage mains supply. The installation and cabling must follow the electromagnetic compatibility rules, e.g.:

- the segregation of cables,
- the use of shielded or special cables when relevant,
- the use of grounded metallic cable tray and supports.

Failure to follow these instructions can result in equipment damage.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All safety instructions in this document must be read, understood and followed.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read all instructions in the Installation Manual before installing or working on this UPS system.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not install the UPS system until all construction work has been completed and the installation room has been cleaned.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- The product must be installed according to the specifications and requirements as defined by Schneider Electric. It concerns in particular the external and internal protections (upstream breakers, battery breakers, cabling, etc.) and environmental requirements. No responsibility is assumed by Schneider Electric if these requirements are not respected.
- After the UPS system has been electrically wired, do not start up the system. Start-up must only be performed by Schneider Electric.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The UPS system must be installed according to local and national regulations. Install the UPS according to:

- IEC 60364 (including 60364-4-41 - protection against electric shock, 60364-4-42 - protection against thermal effect, and 60364-4-43 - protection against overcurrent), **or**
- NEC NFPA 70, **or**
- Canadian Electrical Code (C22.1, Part 1)

depending on which one of the standards apply in your local area.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Install the UPS system in a temperature controlled indoor environment free of conductive contaminants and humidity.
- Install the UPS system on a non-flammable, level and solid surface (e.g. concrete) that can support the weight of the system.

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

⚠ DANGER**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

The UPS is not designed for and must therefore not be installed in the following unusual operating environments:

- Damaging fumes
- Explosive mixtures of dust or gases, corrosive gases, or conductive or radiant heat from other sources
- Moisture, abrasive dust, steam or in an excessively damp environment
- Fungus, insects, vermin
- Salt-laden air or contaminated cooling refrigerant
- Pollution degree higher than 2 according to IEC 60664-1
- Exposure to abnormal vibrations, shocks, and tilting
- Exposure to direct sunlight, heat sources, or strong electromagnetic fields

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

⚠ DANGER**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

Do not drill or cut holes for cables or conduits with the gland plates installed and do not drill or cut holes in close proximity to the UPS.

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

⚠ WARNING**HAZARD OF ARC FLASH**

Do not make mechanical changes to the product (including removal of cabinet parts or drilling/cutting of holes) that are not described in the Installation Manual.

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

NOTICE**RISK OF OVERHEATING**

Respect the space requirements around the UPS system and do not cover the product's ventilation openings when the UPS system is in operation.

Failure to follow these instructions can result in equipment damage.

NOTICE**RISK OF EQUIPMENT DAMAGE**

Do not connect the UPS output to regenerative load systems including photovoltaic systems and speed drives.

Failure to follow these instructions can result in equipment damage.

Battery Safety

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Battery circuit breakers must be installed according to the specifications and requirements as defined by Schneider Electric.
- Servicing of batteries must only be performed or supervised by qualified personnel knowledgeable of batteries and the required precautions. Keep unqualified personnel away from batteries.
- Disconnect charging source prior to connecting or disconnecting battery terminals.
- Do not dispose of batteries in a fire as they can explode.
- Do not open, alter, or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Batteries can present a risk of electric shock and high short-circuit current. The following precautions must be observed when working on batteries

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear protective glasses, gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electric shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

When replacing batteries, always replace with the same type and number of batteries or battery packs.

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

NOTICE

RISK OF EQUIPMENT DAMAGE

- Wait until the system is ready to be powered up before installing batteries in the system. The time duration from battery installation until the UPS system is powered up must not exceed 72 hours or 3 days.
- Batteries must not be stored more than six months due to the requirement of recharging. If the UPS system remains de-energized for a long period, Schneider Electric recommends that you energize the UPS system for a period of 24 hours at least once every month. This charges the batteries, thus avoiding irreversible damage.

Failure to follow these instructions can result in equipment damage.

Symbols Used

	Stand-by
	Hazardous voltage
	Attention or consult accompanying documents
	Output
	Input
	OFF (power disconnection from utility/mains) or output disabled
	ON (power connection to the utility/mains) or output enabled
	Alternating current
	Direct current
	Connection for the neutral conductor on permanently installed equipment
	Earth (ground)

Specifications

NOTICE
<p>HAZARD OF EQUIPMENT DAMAGE</p> <p>Refer to the UPS installation manual for detailed specifications for the UPS system.</p> <p>Failure to follow these instructions can result in equipment damage.</p>

Modular Battery Cabinets Weights and Dimensions

Part	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
Modular battery cabinet wide up to 12 strings (GVMMODBCW) ¹	210 (462) ¹	1970 (77.56)	700 (27.56)	854 (33.62)
Modular battery cabinet narrow up to 6 strings (GVMMODBCN) ¹	139 (305,8) ¹	1970 (77.56)	370 (14.57)	854 (33.62)

Torque Specifications

Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft)
M5	2.5 Nm (1.84 lb-ft)
M6	5 Nm (3.69 lb-ft)
M8	17.5 Nm (12.91 lb-ft)
M10	30 Nm (22 lb-ft)
M12	50 Nm (36.87 lb-ft)
M14	75 Nm (55.31 lb-ft)

Environment

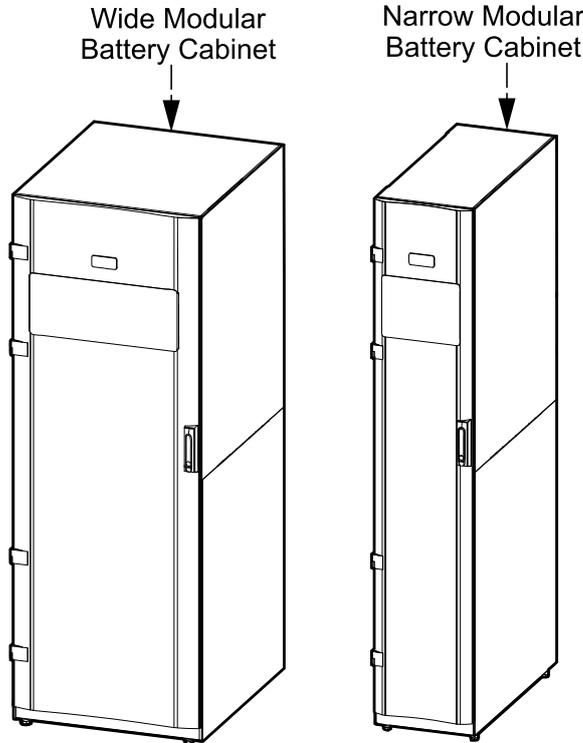
	Operation	Storage
Temperature	0 °C to 40 °C (32 °F to 104 °F)	-15 °C to 40 °C (5 °F to 104 °F)

1. The weight is without batteries. Each battery module string (GVMMBTU) weights 4 x 30 kg (4 x 66 lbs)

Introduction

This manual covers the installation of the Galaxy VM modular battery cabinets. The product range consists of two different modular battery cabinets:

- Wide modular battery cabinet: Containing two battery sections for longer runtime.
- Narrow modular battery cabinet: Containing one battery section.



NOTE: In this manual the graphics reflect the wide modular battery cabinets but the procedures are applicable to all modular battery cabinets.

Overview of Supplied Installation Kits

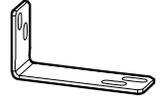
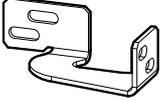
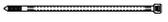
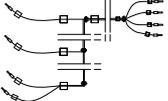
Installation Kit 0M-814642

NOTE: This kit is only shipped with the narrow modular battery cabinet.

Part	Used in	Number of units
Rear anchoring bracket for narrow modular battery cabinet	<i>Mount the Rear Anchoring Brackets for Modular Battery Cabinets, page 20</i>	1 

Installation Kit 0N-9254

Part	Used in	Number of units
Spacer between the I/O cabinet and the modular battery cabinet rear anchoring brackets	<i>Mount the Rear Anchoring Brackets for Modular Battery Cabinets, page 20</i>	1 
Spacer between modular battery cabinet rear anchoring brackets		1 
M8 nut with washer		6 

Part	Used in	Number of units
DC+ interconnection busbar	<i>Interconnect the Modular Battery Cabinets, page 23 and Interconnect the Modular Battery Cabinet and the Power Cabinet, page 28</i>	1 
DC- interconnection busbar		1 
Grounding interconnection busbar		1 
M8 nut with washer		6 
M8 x 20 mm hexagonal torx with washer		6 
Tolerance busbar		6 
Top baying bracket		1 
Top baying bracket		1 
2.5 mm washer		2 
M6 x 16 mm screw		7 
Cable tie	<i>Connect the Signal Cables, page 32</i>	10 
Signal cable 0W11394	<i>Connect the Signal Cables, page 32</i>	1 
Signal cable 0W11395		1 
Signal cable 0W10360	<i>Connect the Signal Cables, page 32</i>	1 

Installation Kit 0M-816683

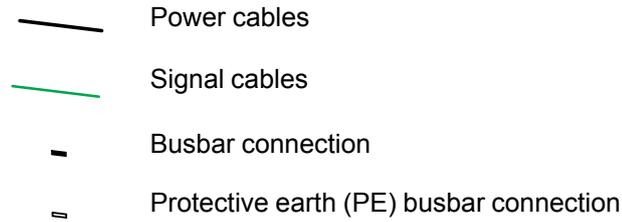
Part	Used in	Number of units
Front anchoring bracket for wide modular battery cabinet	<i>Mount the Front Anchoring Brackets on the Modular Battery Cabinets, page 36</i>	1 

Installation Kit 0M-816815

Part	Used in	Number of units
Front anchoring bracket for narrow modular battery cabinet	<i>Mount the Front Anchoring Brackets on the Modular Battery Cabinets, page 36</i>	1 

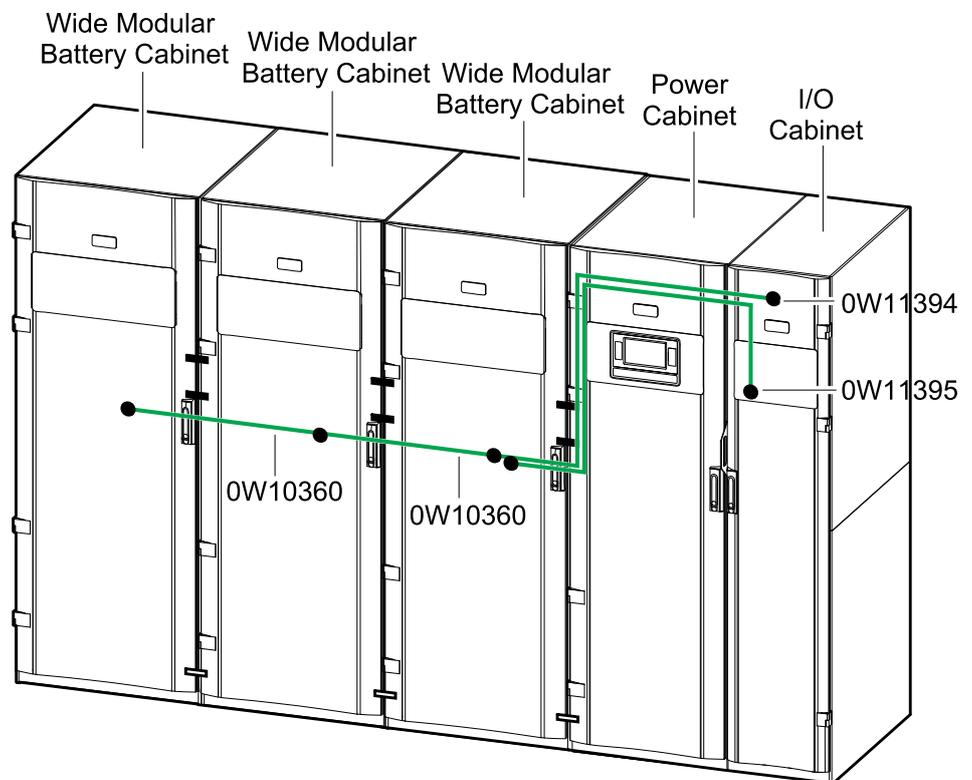
Installation Procedure

For the installation procedures below, these symbols have been used:



Installation Procedure for Line-Up Modular Battery Cabinet Systems

Overview of Busbar and Signal Cable Connections



1. Remove the Modular Battery Cabinets from the Pallet, page 16.
2. Mount the Rear Anchoring Brackets for Modular Battery Cabinets, page 20.
3. Position the Modular Battery Cabinets, page 21.
4. Interconnect the Modular Battery Cabinets, page 23.
5. Interconnect the Modular Battery Cabinet and the Power Cabinet, page 28.
6. Connect the Signal Cables, page 32.
7. Mount the Front Anchoring Brackets on the Modular Battery Cabinets, page 36.
8. Install Batteries in the Modular Battery Cabinet, page 37.
9. Option: Install Seismic Kit (Option), page 41.

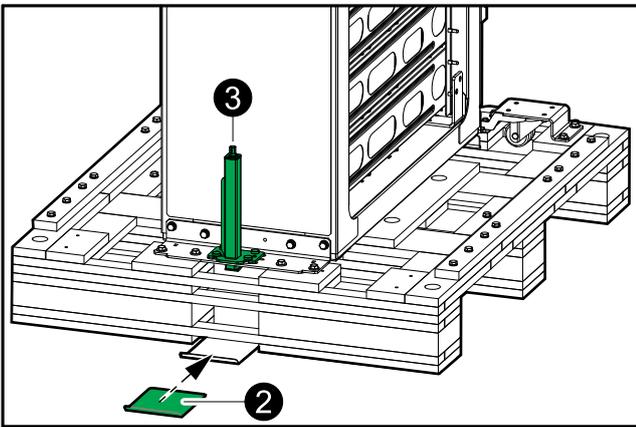
Mechanical Assembly

Remove the Modular Battery Cabinets from the Pallet

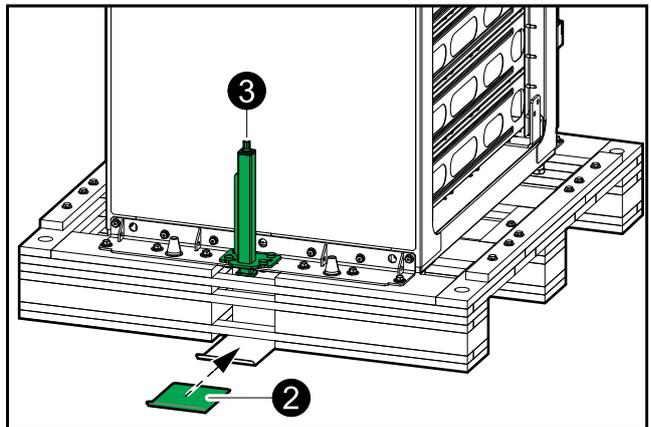
NOTICE
HAZARD OF EQUIPMENT DAMAGE
Ensure that the floor is level and can support the weight of the jack when it carries the cabinet.
Failure to follow these instructions can result in equipment damage.

1. Take the installation kit 0M-816661 shipped on the I/O cabinet pallet.
2. Place the floor protection plate under the pallet on the rear of the cabinet.

Rear View of the Narrow Cabinet



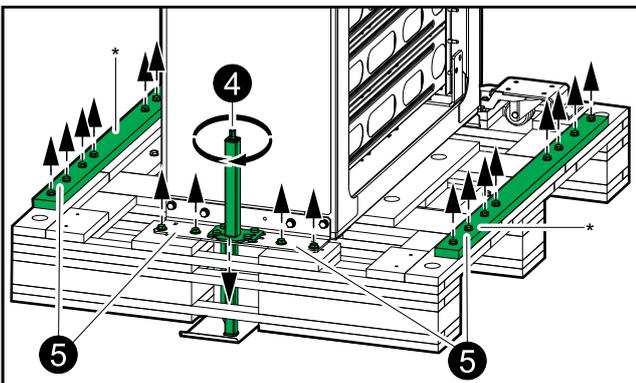
Rear View of the Wide Cabinet



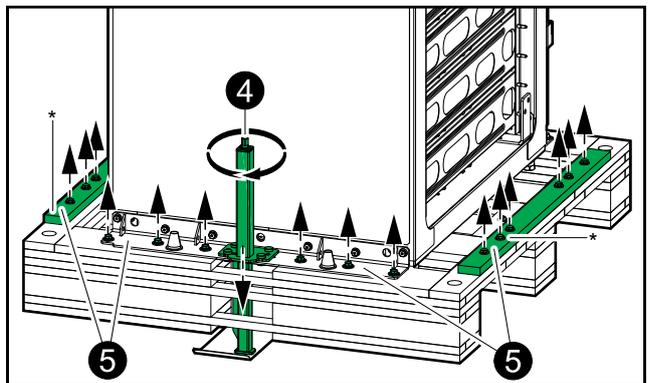
3. Place the jack from the installation kit in the hole in the transport bracket on the rear of the cabinet.
4. Use a drilling machine with the provided hexagonal socket to activate the jack, slide it into position in the bracket, and to lift the pallet to the top position.

NOTE: Reduce the drill torque to minimum to prevent kickback.

Rear View of the Narrow Cabinet

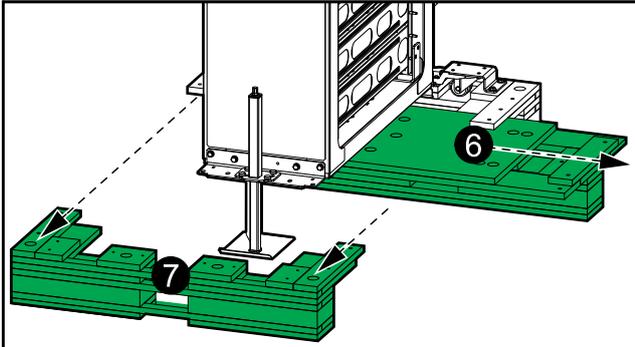


Rear View of the Wide Cabinet

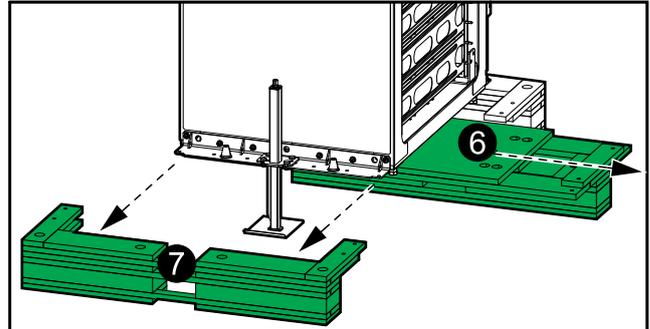


5. Loosen and remove the bolts shown on the drawing that attach the transport bracket and the wooden plates to the pallet. Save the pallet parts marked with * for step 8.
6. Remove the middle pallet part.

Rear View of the Narrow Cabinet



Rear View of the Wide Cabinet



⚠ WARNING

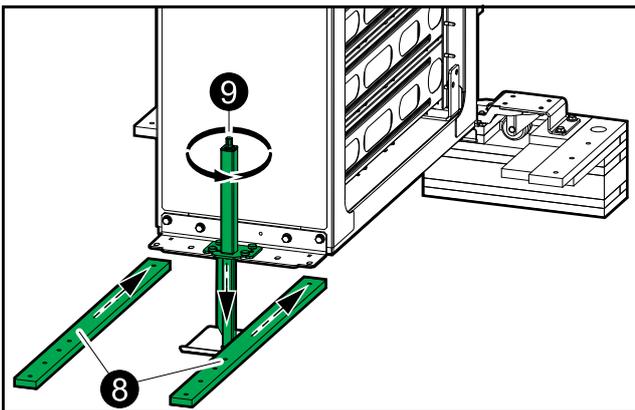
HAZARD OF SERIOUS INJURY

Do not put your hands or feet under the pallet while removing the wooden side part.

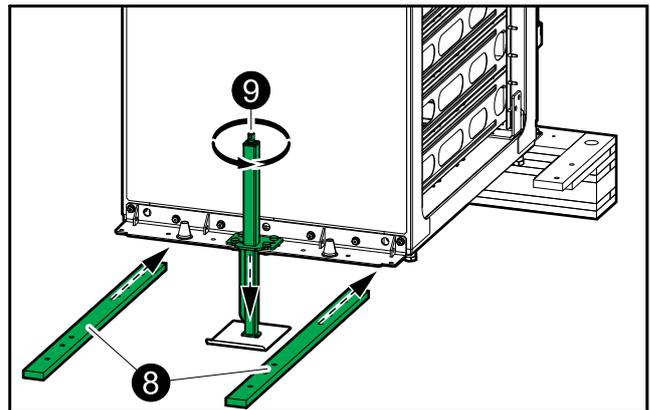
Failure to follow these instructions can result in death, serious injury, or equipment damage.

7. Remove the rear pallet part.
8. Place the pallet parts from step 5 as a support under the metal bracket.

Rear View of the Narrow Cabinet

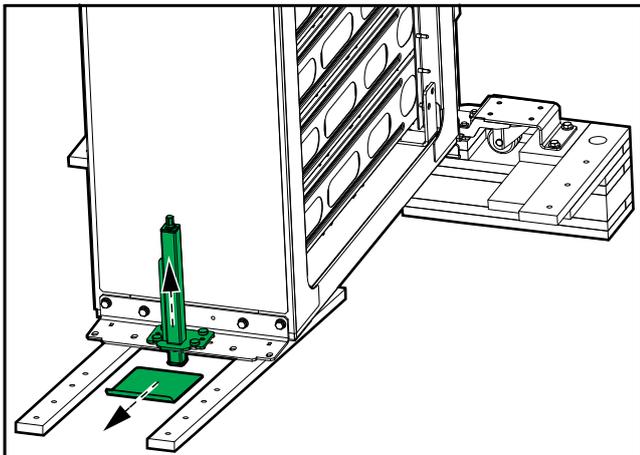
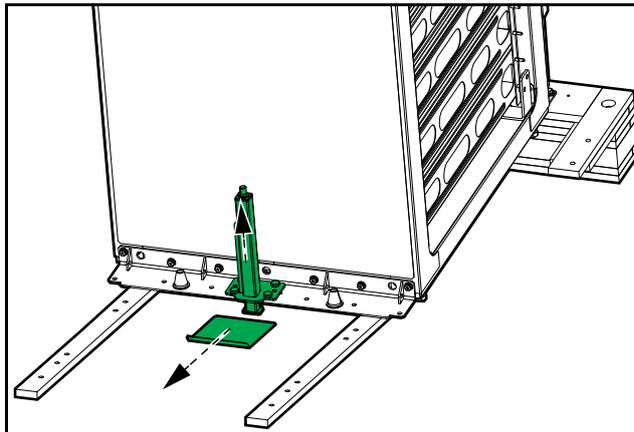


Rear View of the Wide Cabinet

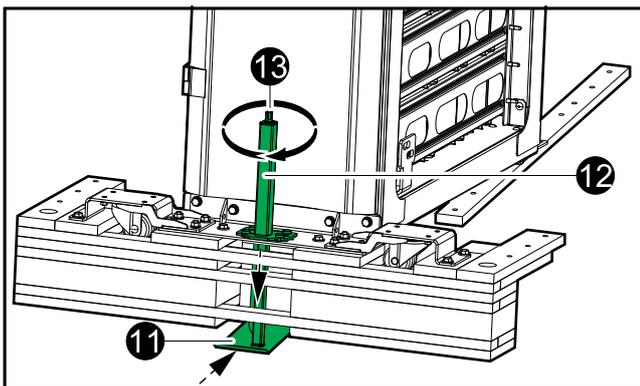
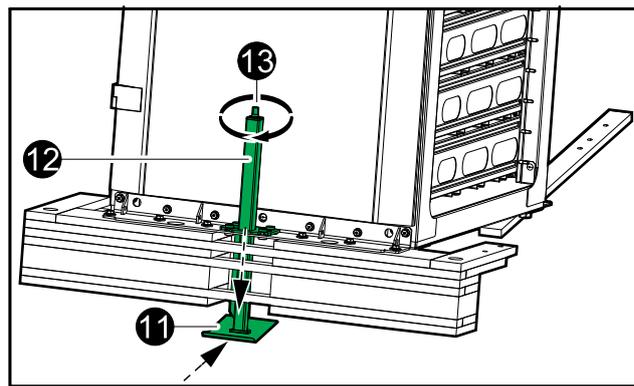


9. Lower the cabinet down onto the support using the jack and the drilling machine.

10. Remove the floor protection plate and the jack.

Rear View of the Narrow Cabinet**Rear View of the Wide Cabinet**

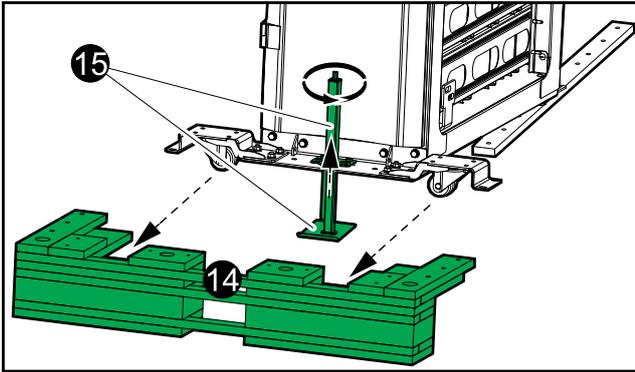
11. Place the floor protection plate under the pallet on the front of the cabinet.

Front View of the Narrow Cabinet**Front View of the Wide Cabinet**

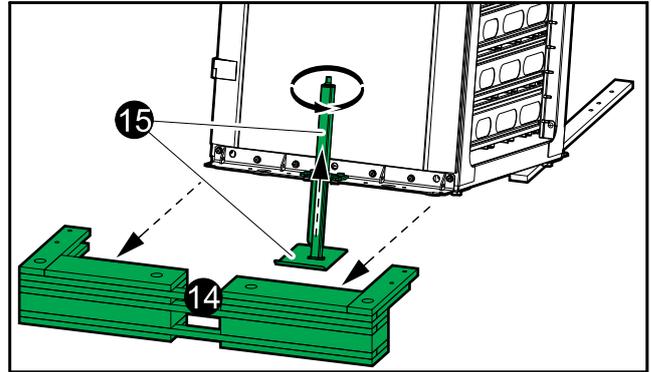
12. Place the jack in the hole in the transport bracket on the front of the pallet.
13. Use a drilling machine with the provided hexagonal socket to activate the jack, slide it into position in the bracket, and to lift the pallet to the top position.

- Loosen the bolts that attach the transport bracket to the pallet and remove the front pallet part.

Front View of the Narrow Cabinet



Front View of the Wide Cabinet



⚠ WARNING

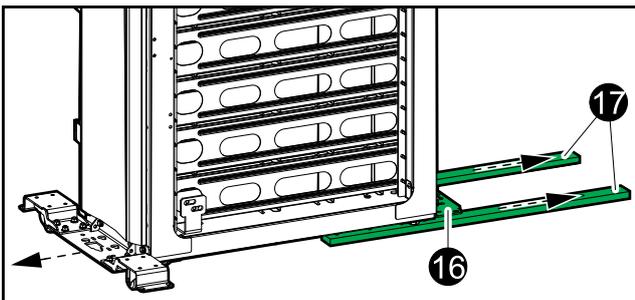
HAZARD OF SERIOUS INJURY

Do not put your hands or feet under the pallet while removing the wooden side part.

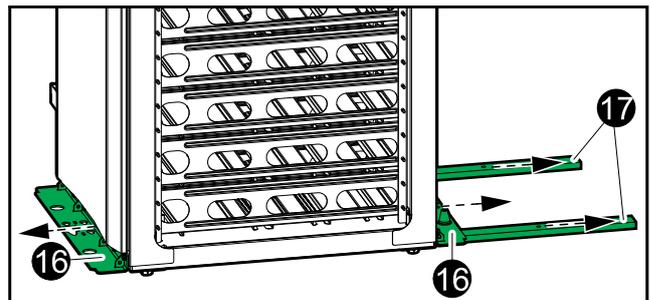
Failure to follow these instructions can result in death, serious injury, or equipment damage.

- Use the jack to lower the cabinet onto the floor until the wheels connect with the floor. Remove the jack and the floor protection plate.
- Remove the rear anchor for the narrow battery cabinet and the front and rear anchor for the wide battery cabinet.

Side View of the Narrow Cabinet



Side View of the Wide Cabinet



17. Wheel the cabinet away and remove the remaining pallet parts. The cabinet can now be moved on the built-in wheels to the installation area.

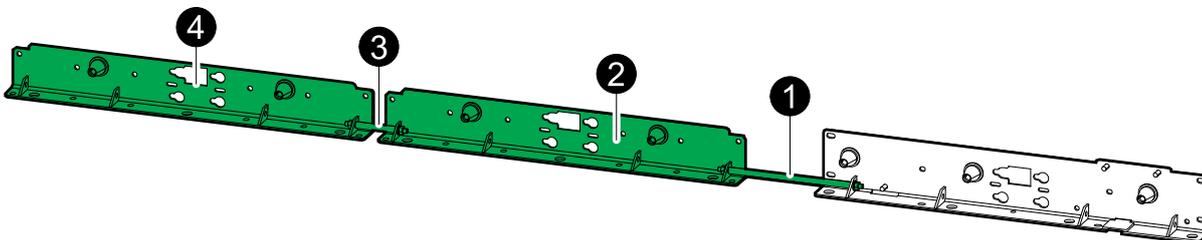
⚠ WARNING
HAZARD OF SERIOUS INJURY
Be carefully of uneven floors and doorsteps when moving the cabinet on its wheels to avoid overbalancing and tipping the cabinet.

Mount the Rear Anchoing Brackets for Modular Battery Cabinets

NOTE: This procedure is applicable for both narrow and wide modular battery cabinets.

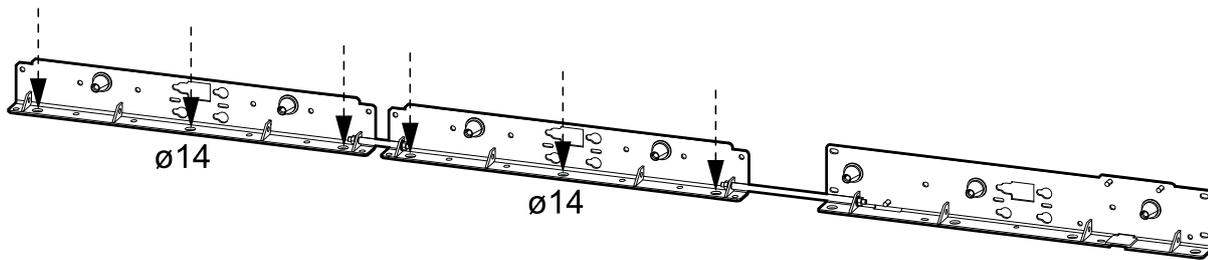
⚠ DANGER
HAZARD OF TILTING
All front and rear anchoring brackets must be installed.
Failure to follow these instructions will result in death or serious injury.

⚠ DANGER
HAZARD OF ELECTRICAL SHOCK, EXPLOSION OR ARC FLASH
Leave the UPS system covered while creating anchoring holes to prevent dust or other conductive parts in the system.
Failure to follow these instructions will result in death or serious injury.



1. Mount the long spacer from the installation kit to the rear anchoring bracket of the I/O cabinet and power cabinet and fasten with an M8 nut.
2. Remove the bracket from the rear of the modular battery cabinet.
 - For wide modular battery cabinets use this bracket as rear anchoring bracket and mount it to the spacer using an M8 nut.
 - For narrow modular battery cabinets take the bracket from the installation kit 0M-814642 and mount it to the spacer using an M8 nut.
3. If a second modular battery cabinet is available, take the short spacer from the installation kit and attach it to the left side of the modular battery cabinet anchoring bracket.
4. Remove the bracket from the rear of the modular battery cabinet and connect to the short spacer.
5. Repeat the procedure for the remaining rear anchoring brackets.
6. Place the rear anchoring bracket assembly in the final installation area and mark the anchoring hole locations.

7. Drill anchoring holes according to national and local requirements and anchor the assembly to the floor.

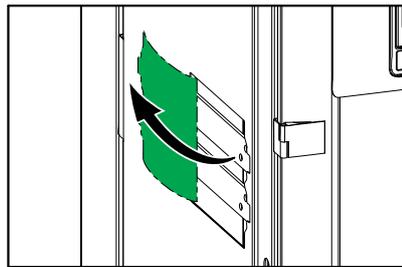


Position the Modular Battery Cabinets

NOTE: The rear anchoring brackets must be mounted before performing this task.

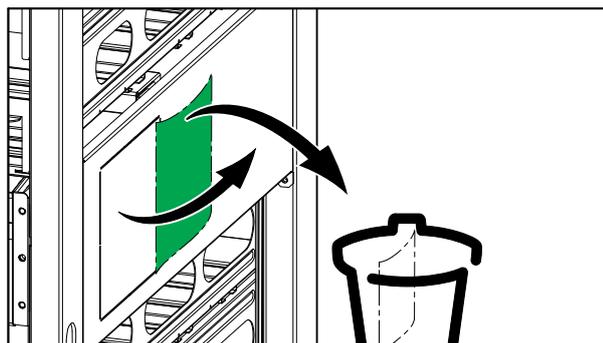
1. Remove the two side panels from the left side of the power cabinet. Save the panels for later use.
2. Open the isolation cover in the left side of the power cabinet.

Front View of the Power Cabinet



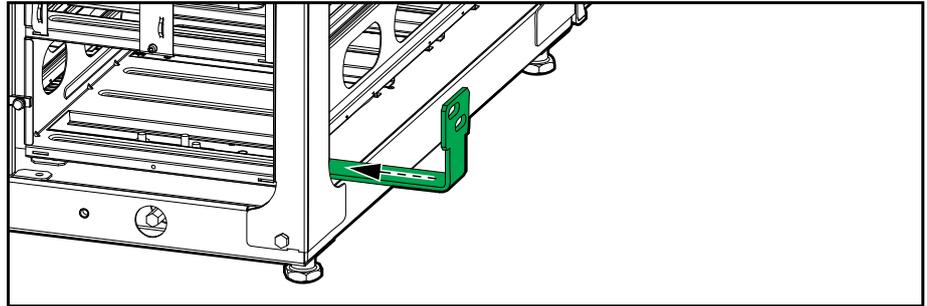
3. Remove the isolation cover from the sides of the modular battery cabinets that will be placed up against another cabinet.

Front View of the Modular Battery Cabinet



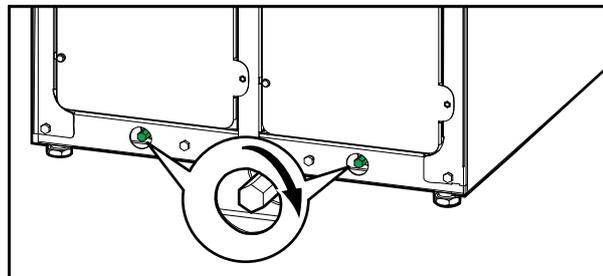
4. Take the PE busbar from the installation kit and slide it into the modular battery cabinet and over the two studs.

Front View of Modular Battery Cabinet



5. Push the modular battery cabinets into position against the rear anchoring bracket – the cabinet will connect to the conic outcroppings on the bracket.
6. Fasten the cabinets to the rear anchoring bracket by tightening the two bolts on the front of the modular battery cabinets.

Front View of the Modular Battery Cabinet



7. Lower the cabinet front feet until they connect with the floor – use a bubble-leveler to ensure that the cabinets are level.
8. Install the two side panels removed in step 1 on the left side of the leftmost modular battery cabinet.

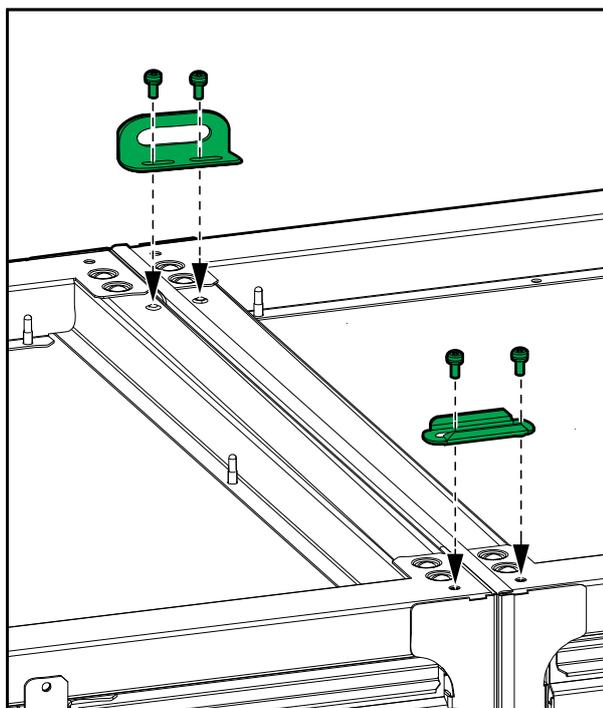
Interconnect the Modular Battery Cabinets

The parts used in this procedure are provided in the installation kit 0N-9254.

1. Install top baying brackets between all modular battery cabinets.

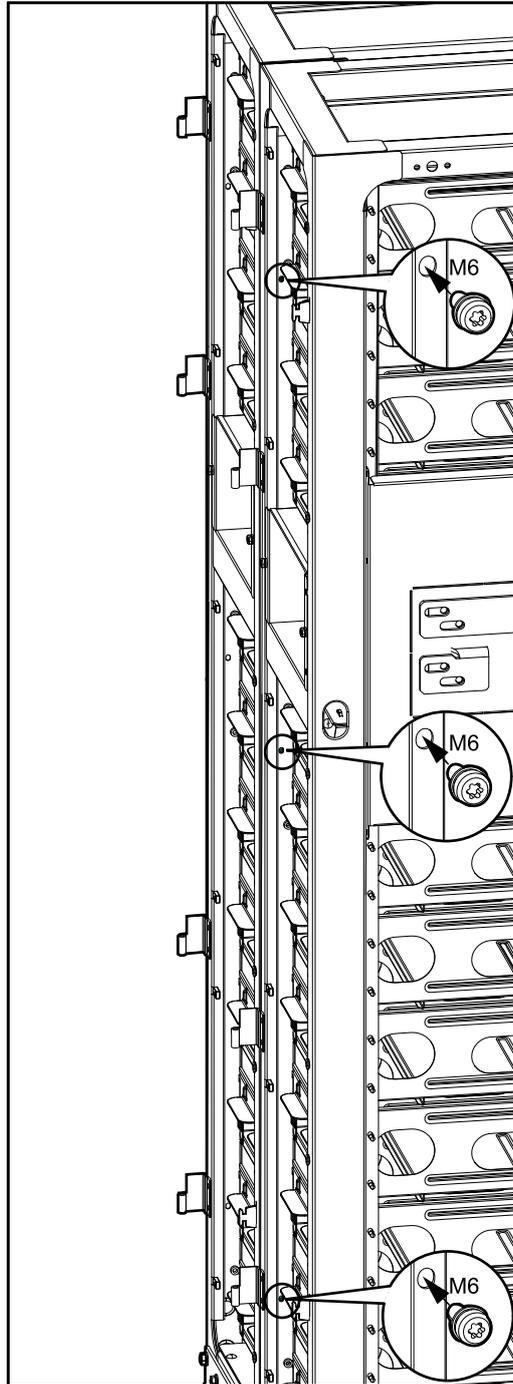
NOTE: If the seismic kit is part of your installation, do not install the top baying bracket.

Top Front View of the Modular Battery Cabinets



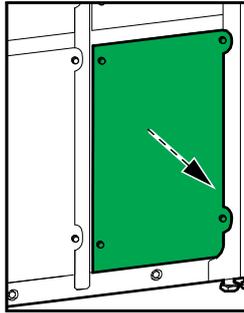
2. Mount the three M6 screws from the installation kit from right to left in the three marked positions to tighten the two cabinets together.

Side View of Two Modular Battery Cabinets



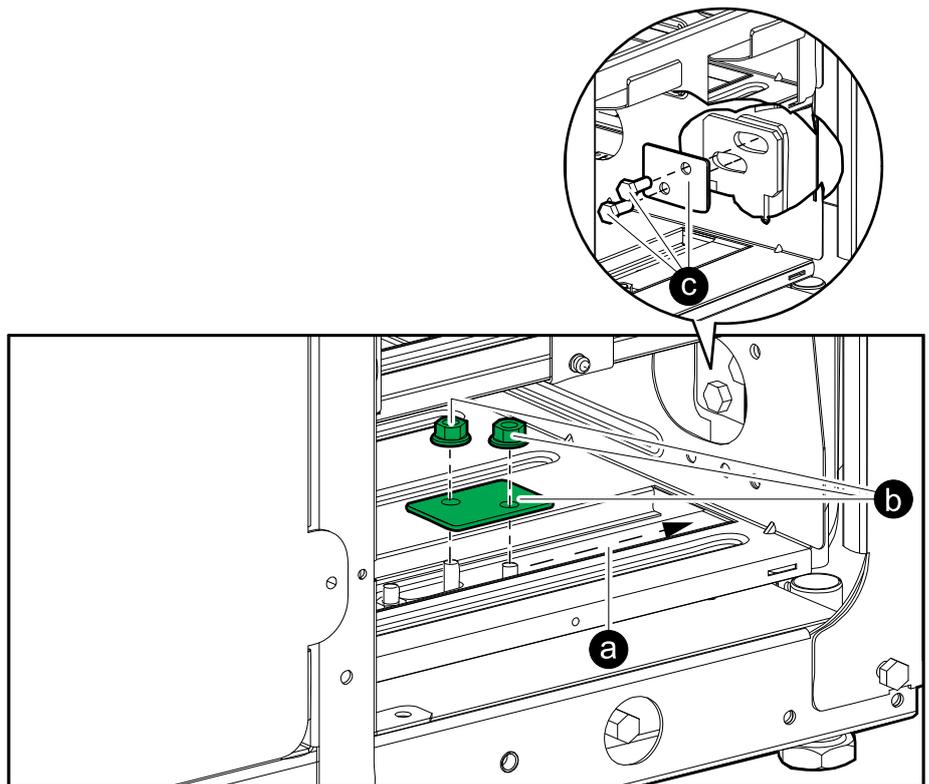
- Remove the battery cover in the bottom right corner of each modular battery cabinet.

Front View of the Modular Battery Cabinet



- Remove the battery securing bracket in the bottom right corner of each modular battery cabinet. For more information on how to remove the battery securing bracket, see *Install Batteries in the Modular Battery Cabinet*, page 37.
- Install the PE busbar assemblies between all modular battery cabinets in the system:

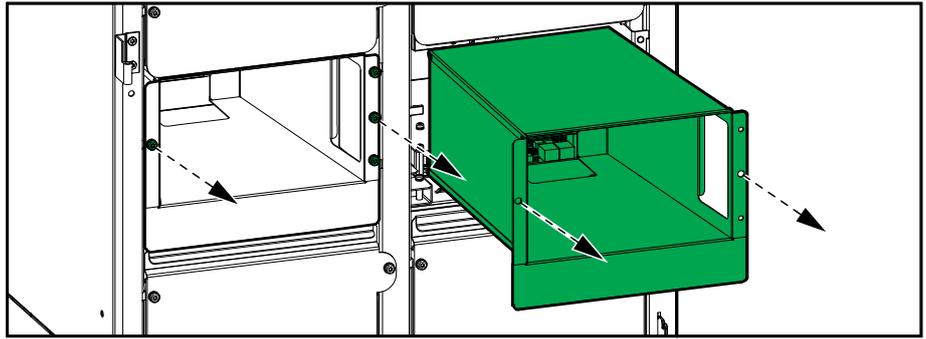
Front View of the Modular Battery Cabinet



- Push the PE busbar to the right until the busbar slides onto the studs in the adjacent cabinet.
- Place the small busbar onto the studs and secure with two bolts.
- Slide the other small busbar onto the studs in the adjacent cabinet and secure with two screws.

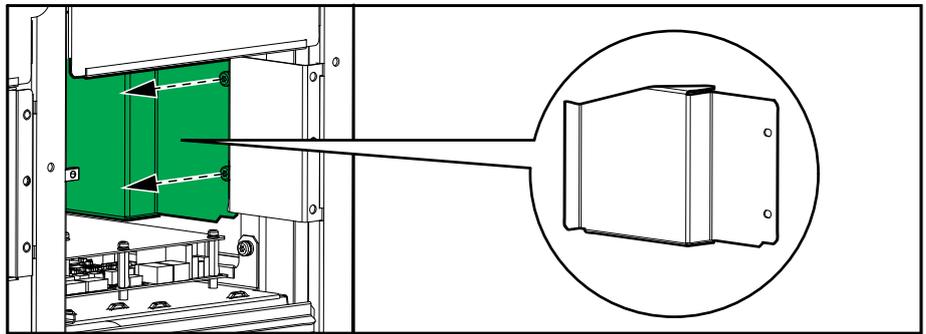
6. Remove the protection box(es) in the middle of each modular battery cabinet.

Front View of the Modular Battery Cabinet



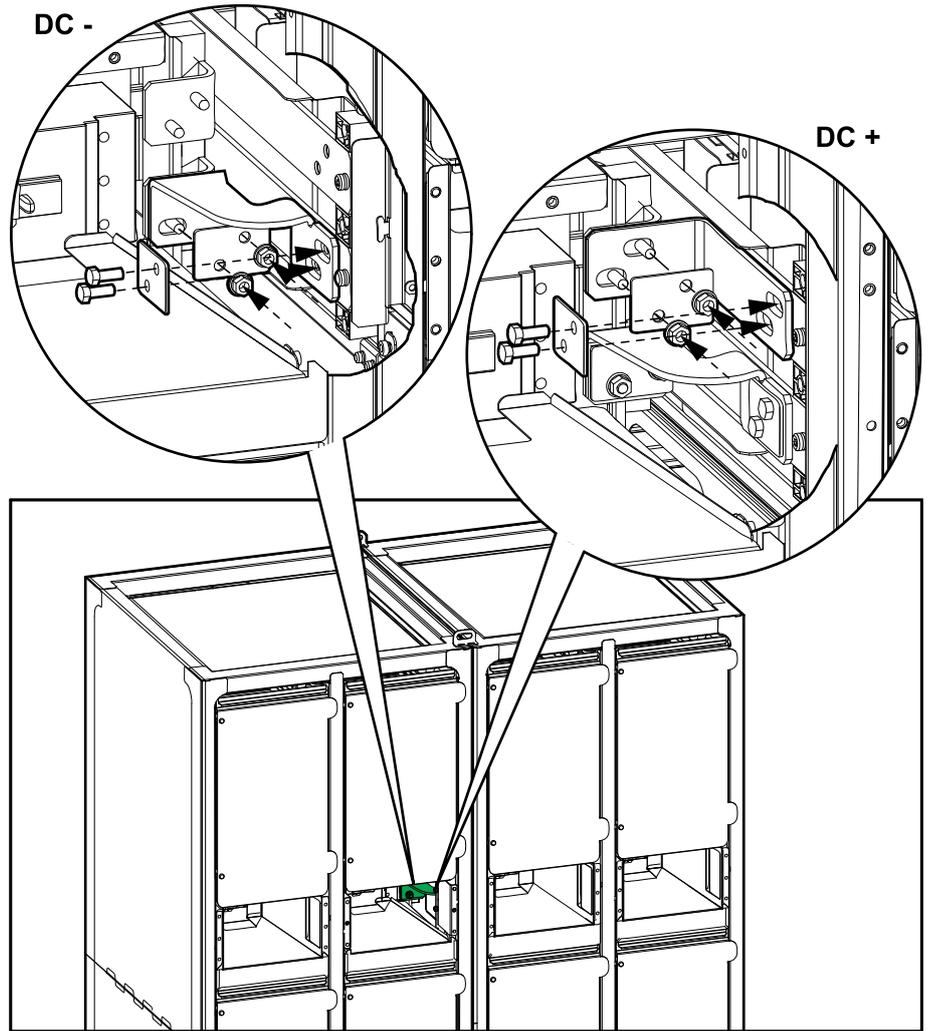
7. Remove the protection cover in the right side of each modular battery cabinet.

Front View of the Modular Battery Cabinet



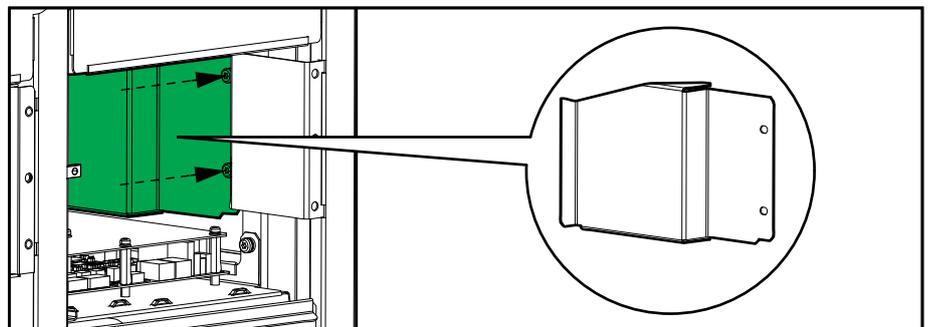
8. Install the DC + and DC – busbar assemblies between all modular battery cabinets.

Front View of the Modular Battery Cabinet



9. Reinstall the protection covers in the right side of each modular battery cabinets. Leave the cover off the modular battery cabinet that will be connected to the power cabinet.

Front View of the Modular Battery Cabinet

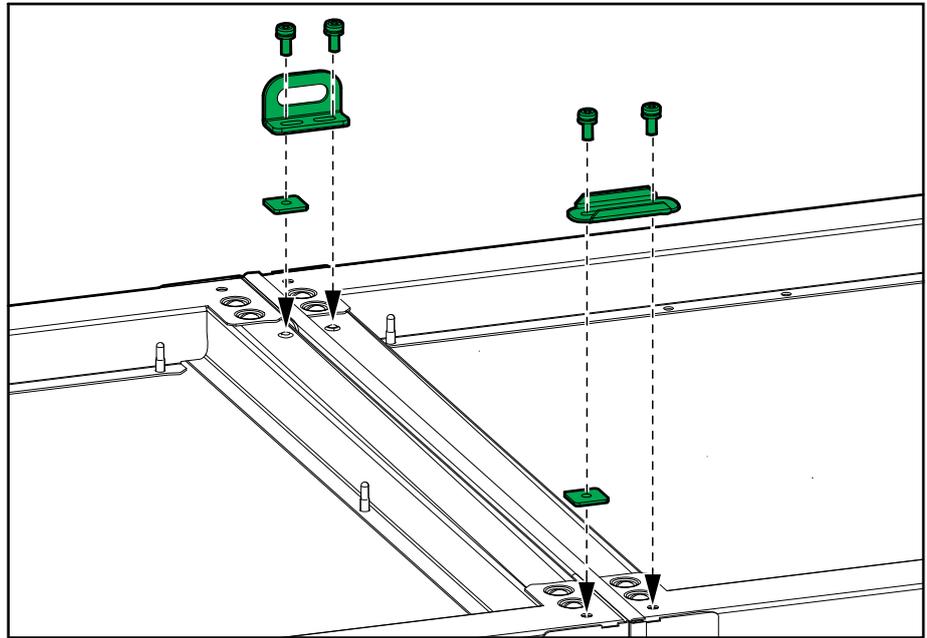


Interconnect the Modular Battery Cabinet and the Power Cabinet

1. Place the washer on the rightmost modular battery cabinet and install the top baying brackets between the modular battery cabinet and the power cabinet.

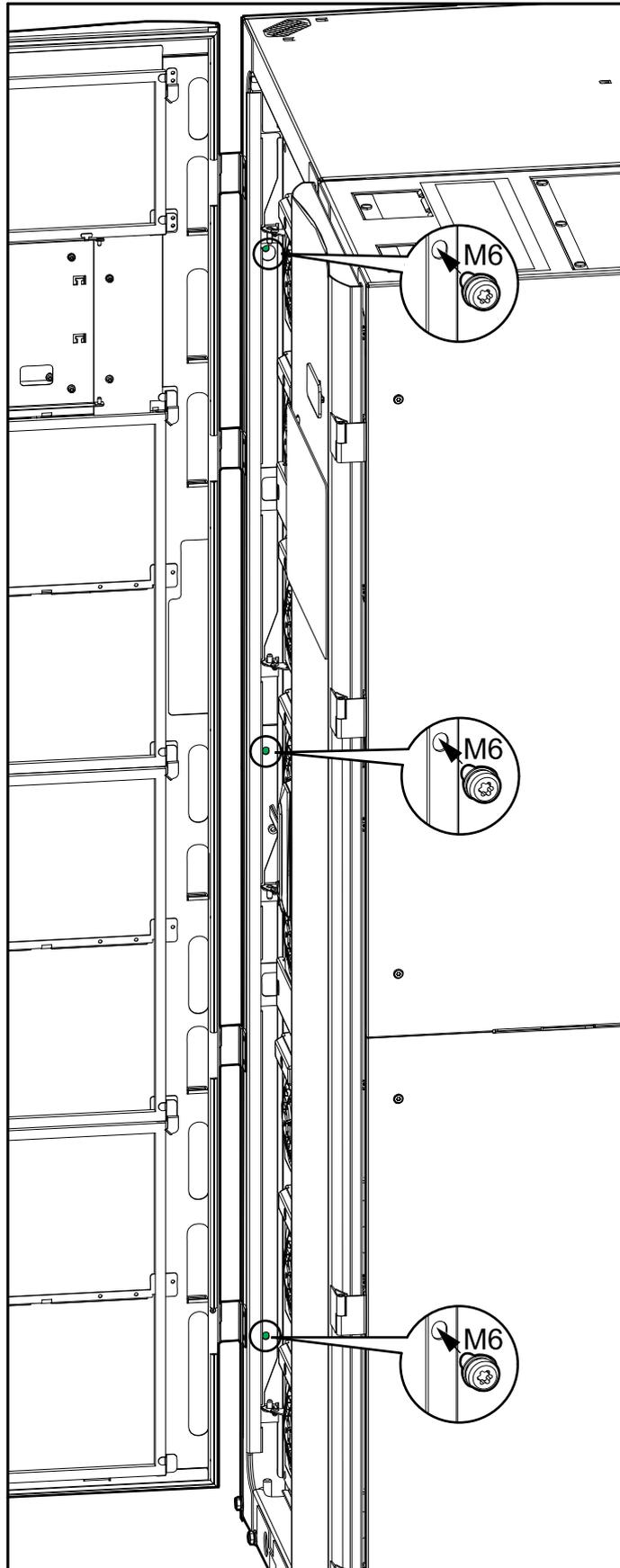
NOTE: If the seismic kit is part of your installation, do not install the top baying bracket.

Front View of the Modular Battery Cabinet and the Power Cabinet



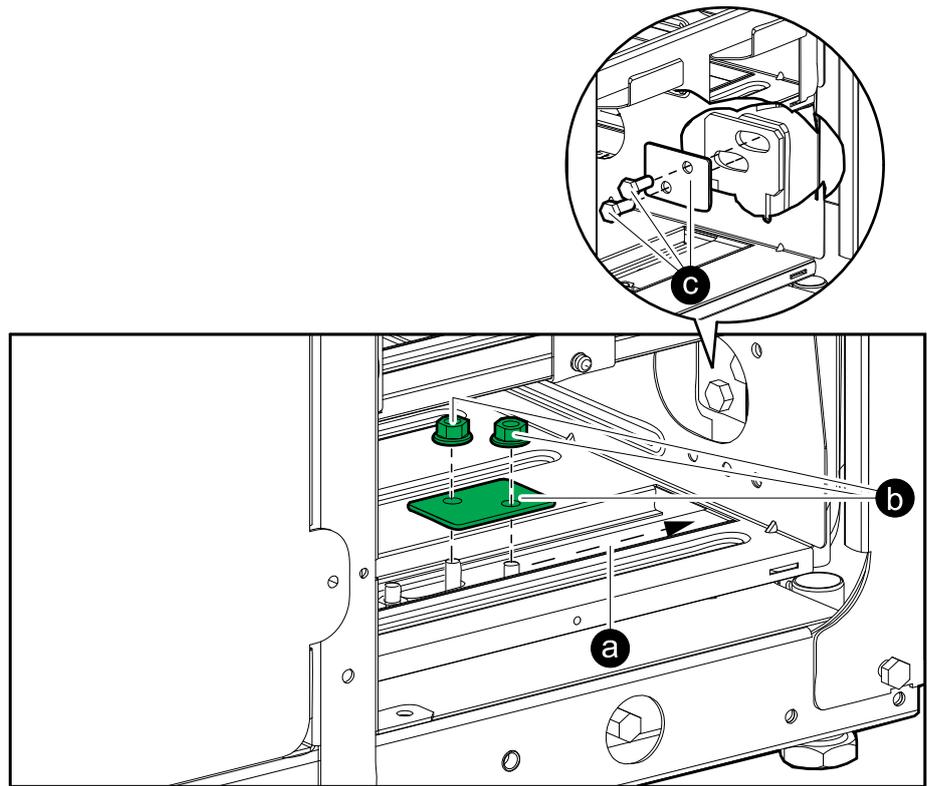
2. Mount the three M6 screws from the installation kit in the three marked positions from the power cabinet side to tighten the two cabinets together.

Side View of the Power Cabinet



3. Install the PE busbar assembly between the rightmost modular battery cabinet and the power cabinet:

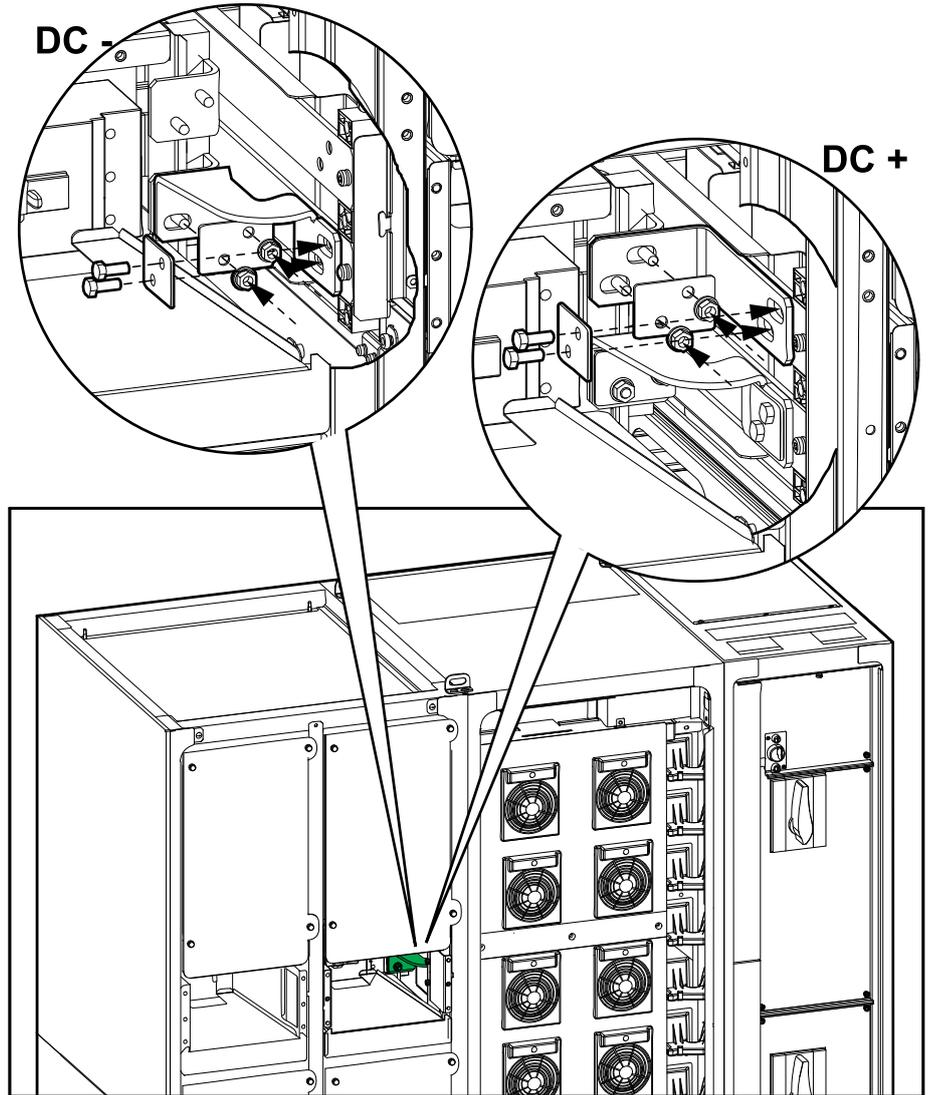
Front View of the Modular Battery Cabinet



- a. Push the PE busbar to the right until the busbar slides onto the studs in the adjacent cabinet.
- b. Place the small busbar onto the studs and fasten with two bolts.
- c. Slide the other small busbar onto the studs in the adjacent cabinet and fasten with two screws.

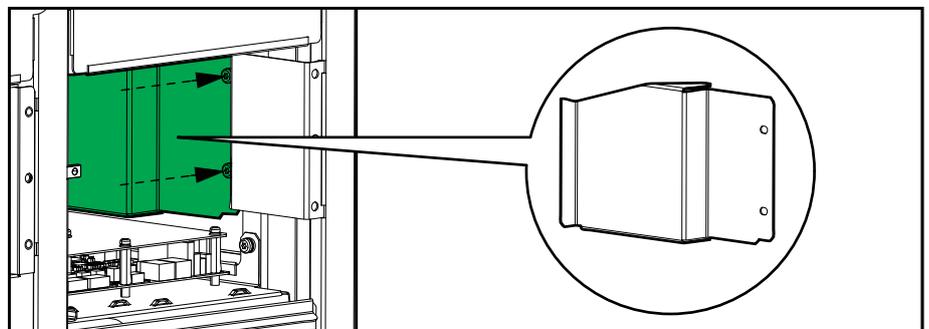
4. Install the DC + and DC – busbar assemblies between the rightmost modular battery cabinet and the power cabinet.

Front View of the Modular Battery Cabinet, the Power Cabinet and the I/O Cabinet



5. Reinstall the protection cover in the right side of the rightmost modular battery cabinet.

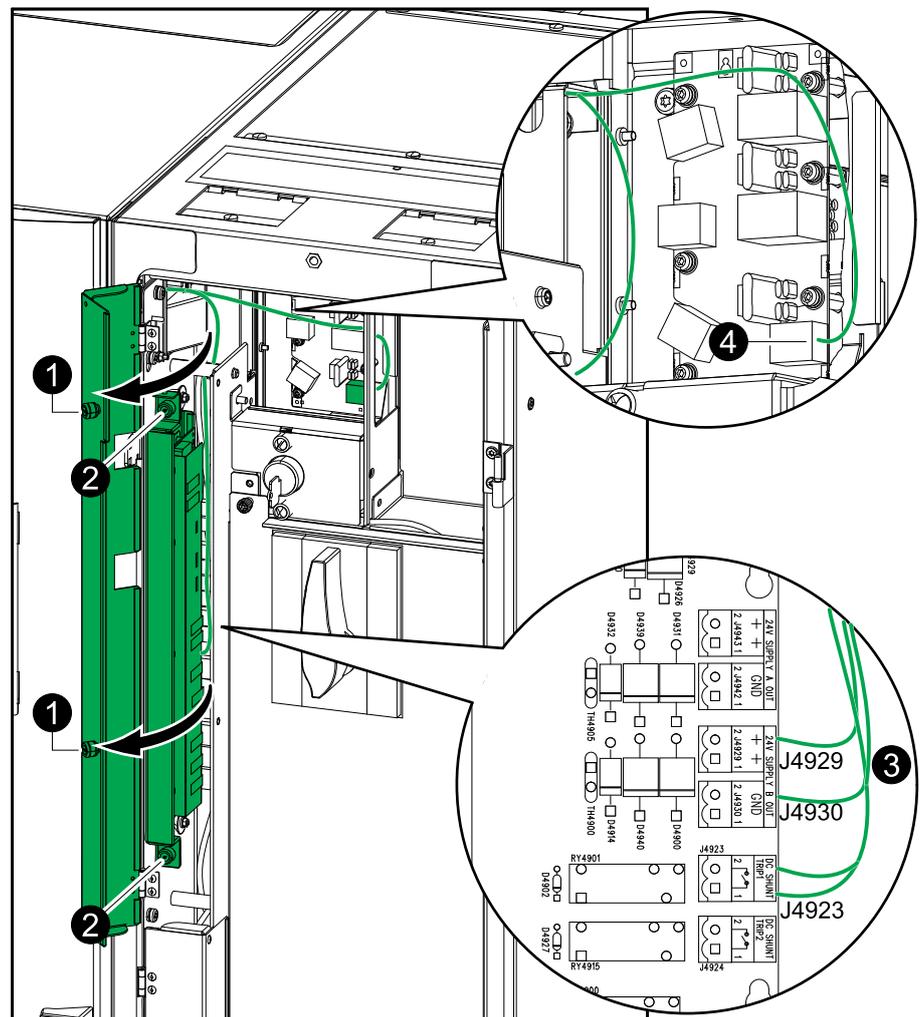
Front View of the Modular Battery Cabinet



Connect the Signal Cables

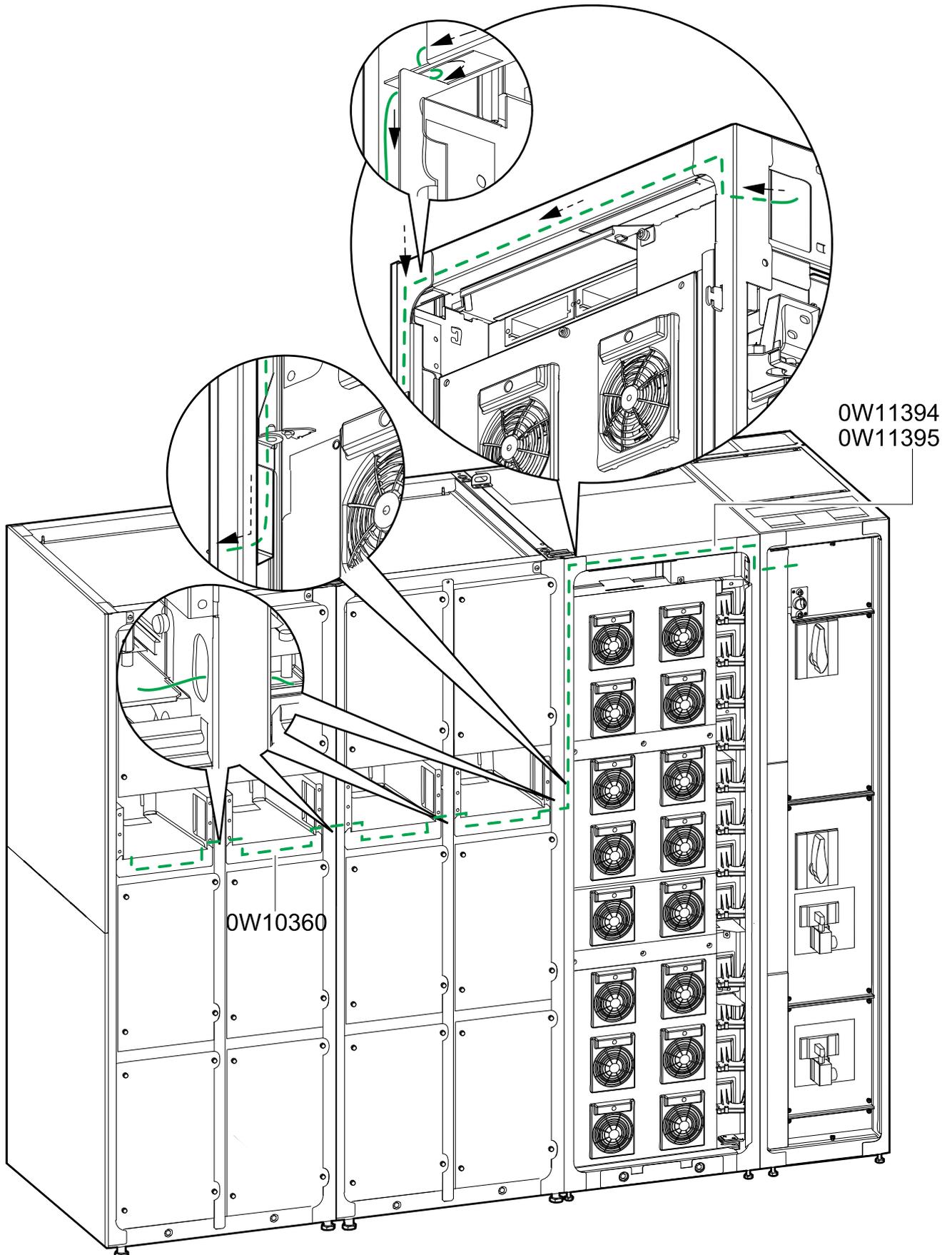
1. Loosen the thumb screws and open the cover in the left side of the I/O cabinet.
2. Loosen the two screws and pull out the top interface board.
3. Connect the combined signal cable 0W11395 in the I/O cabinet:
 - a. Connect the 24 V power supply cable to the J4929–2 terminal.
 - b. Connect the ground cable to the J4930–2 terminal.
 - c. Connect the DC shunt trip cable to the J4923–1 and J4923–2 terminals.
4. Remove terminator from the ABUS terminal J5752 and connect the ABUS cable 0W11394 to the J5752 terminal. Save the terminator for installation in the last modular battery cabinet.

Front View of the I/O Cabinet



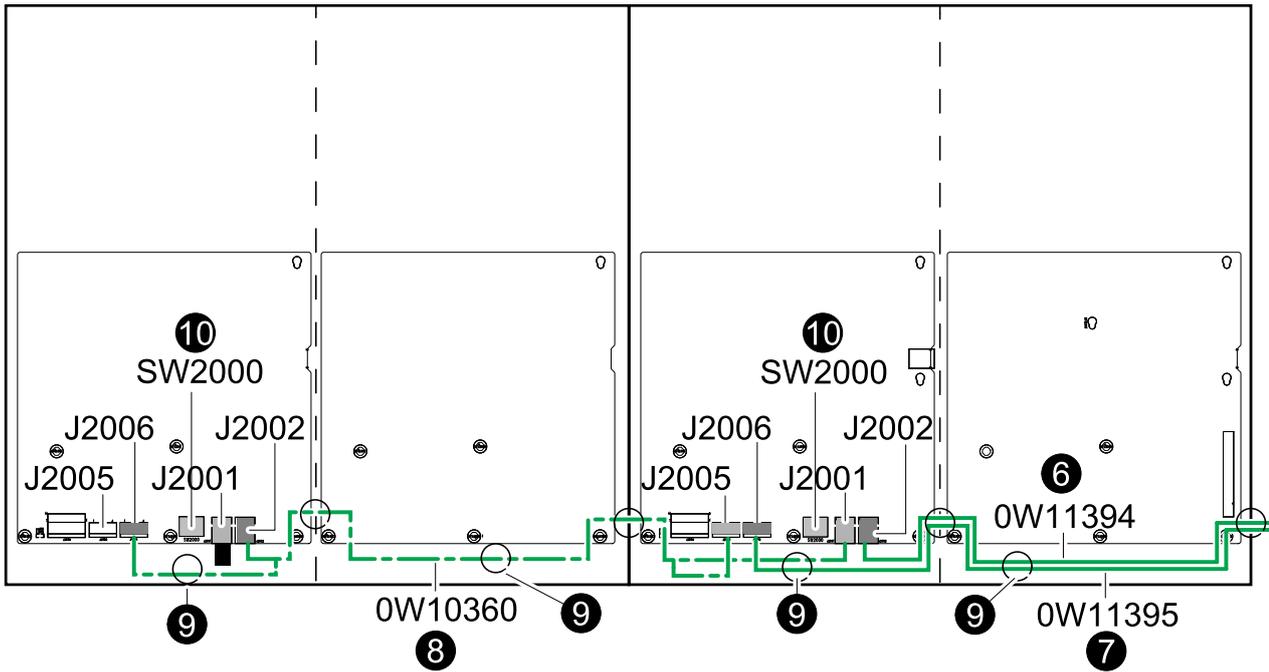
5. Route the signal cables 0W11394 and 0W11395 as shown on the illustration to the rightmost modular battery cabinet.

Front View of the System



6. Connect the ABUS cable 0W11394 to the J2002 terminal in the rightmost modular battery cabinet.

Top View of the Signal Cable Connections in the Modular Battery Cabinets

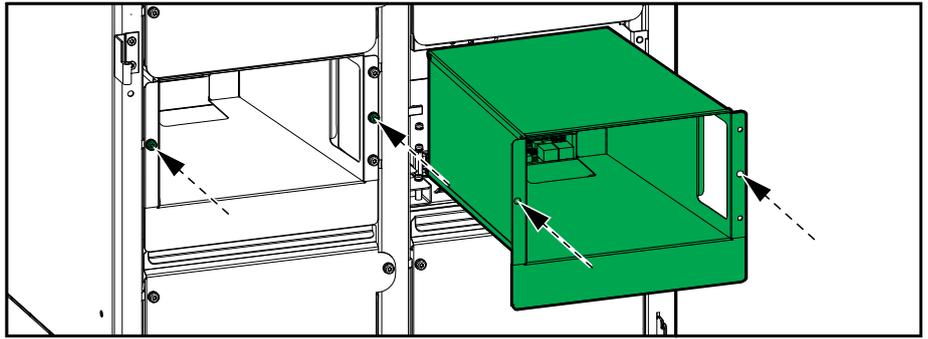


7. Connect the DC shunt trip cable 0W11395 to the J2006 terminal in the rightmost modular battery cabinet.
8. Connect the combined signal cable 0W10360 between all modular battery cabinets:
 - a. Connect the ABUS cables from the J2001 terminal to the J2002 terminal in the next modular battery cabinet. Install terminator from the I/O cabinet in the J2001 terminal of the last modular battery cabinet.
 - b. Connect the DC shunt trip cables from the J2005 terminal to the J2006 terminal in the next modular battery cabinet.
9. Fasten the signal cables using the provided cable ties.
10. Set the address of each modular battery cabinet on the battery monitoring card from left to right starting from 1.

S2000	
No address	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 1	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 2	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 4	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 6	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 7	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Cabinet 8	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4

11. Reinstall the protection box and fasten with screws.

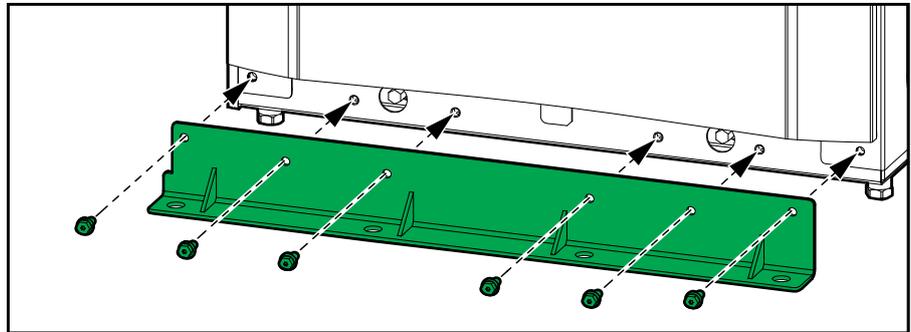
Front View of the Modular Battery Cabinet



Mount the Front Anchoring Brackets on the Modular Battery Cabinets

1. Fasten the front anchoring bracket to the front of the modular battery cabinets using the six provided bolts.

Front View of the Modular Battery Cabinet



2. Anchor the brackets to the floor.

NOTE: Floor anchoring bolts are not supplied.

Install Batteries in the Modular Battery Cabinet

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Batteries can present a risk of electric shock and high short-circuit current. The following precautions must be observed when working on batteries

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear protective glasses, gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electric shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).

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

⚠ WARNING

RISK OF EQUIPMENT DAMAGE

Wait until the system is ready to be powered up before installing batteries in the system. The time duration from battery installation until the UPS system is powered up must not exceed 72 hours or 3 days.

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

⚠ WARNING

HAZARD OF TILTING

When the modular battery cabinets are not fully populated, install the batteries from the bottom and up, and distribute evenly in each cabinet.

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

NOTICE

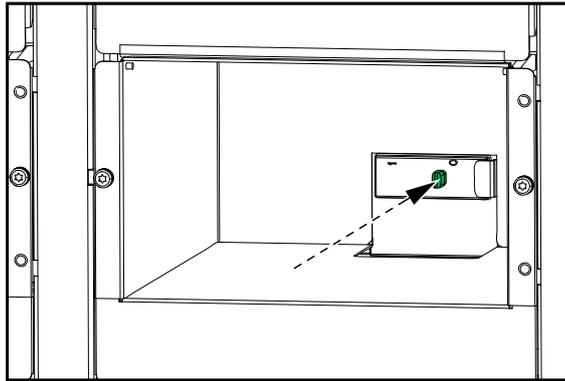
HAZARD OF EQUIPMENT DAMAGE

- Ensure that the data code and the manufacturing dates are the same for all batteries in a battery string.
- Use ONLY 0G-GVMBTU batteries in the modular battery cabinet.

Failure to follow these instructions can result in equipment damage.

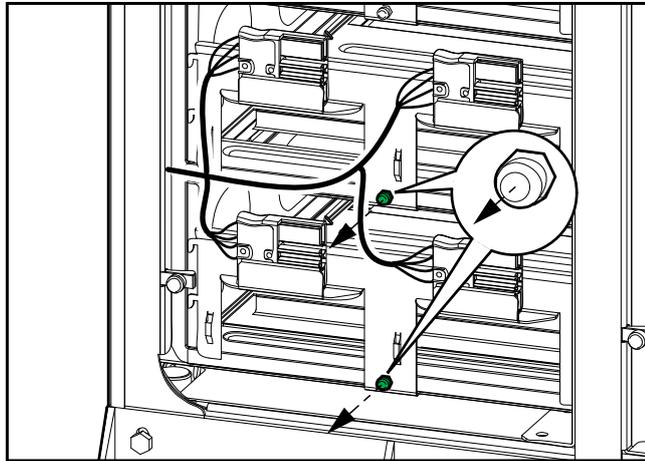
1. Lock out/tag out the battery breaker(s) in open position.

Front View of the Modular Battery Cabinet



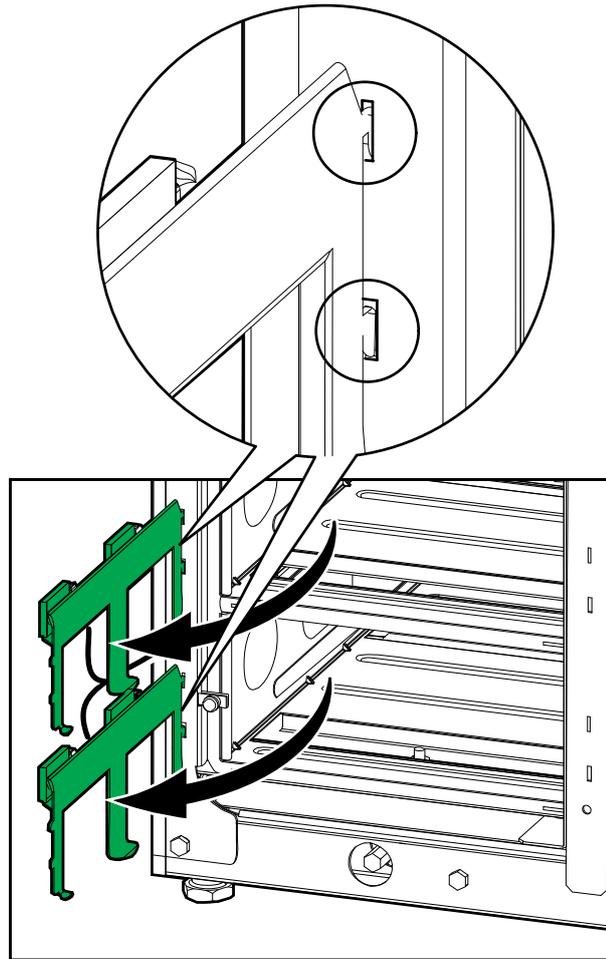
2. Loosen the bolts and remove the battery securing brackets.

Front View of the Modular Battery Cabinet



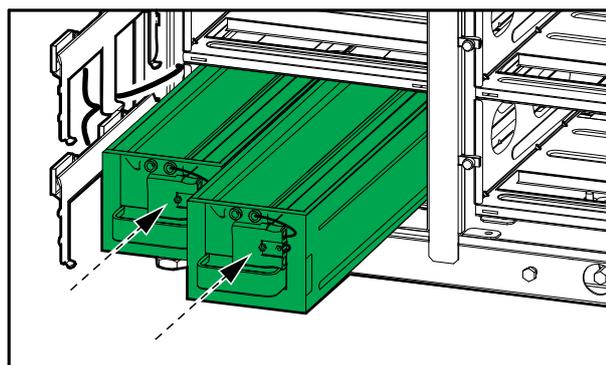
3. Lift the brackets free and hang them from the holes in the cabinet frame.

Front View of the Modular Battery Cabinet



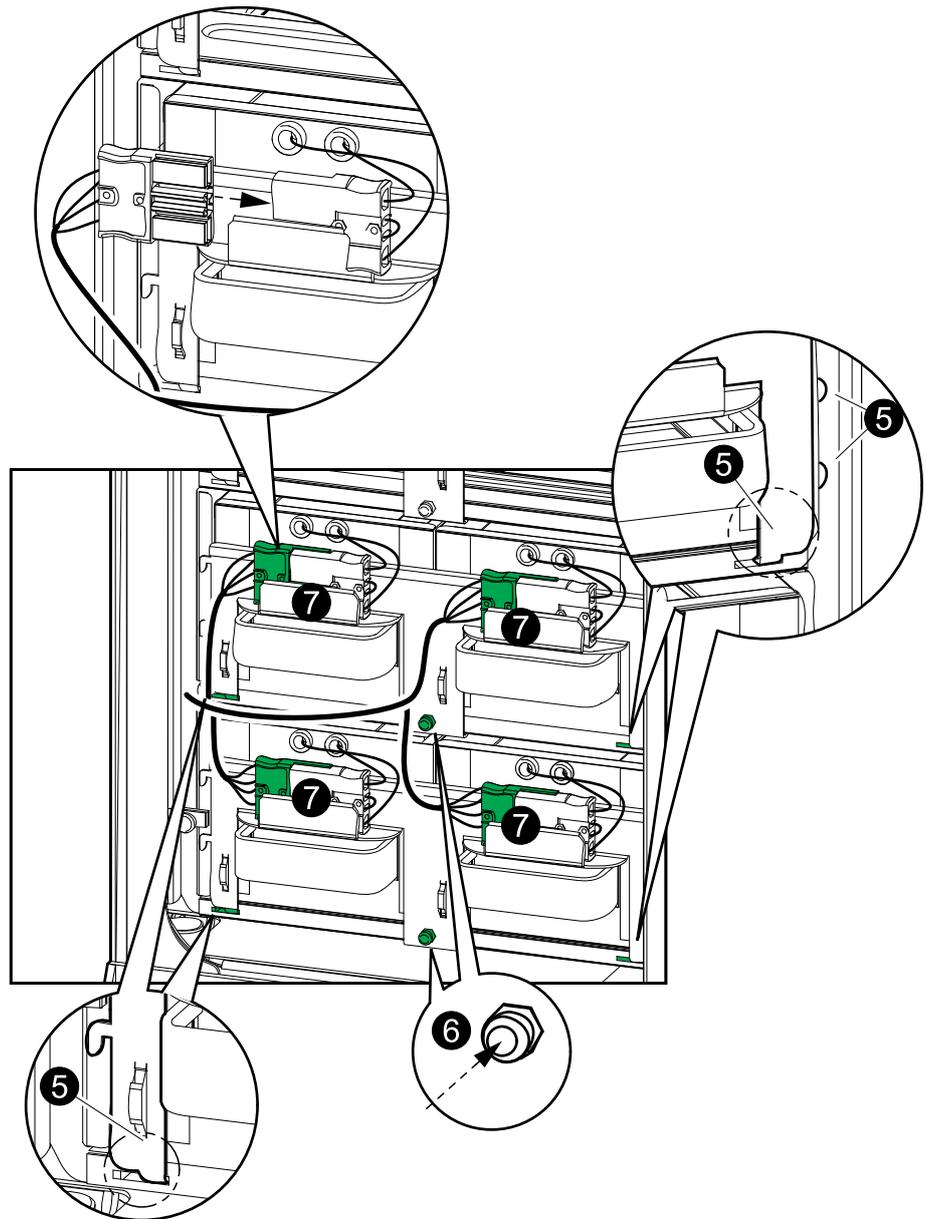
4. Place two batteries on the shelf and push first the left battery and then the right battery into the cabinet.

Front View of the Modular Battery Cabinet



- Reinstall the battery securing brackets by first pushing them into the holes in the right frame and then in the shelf.

Front View of the Modular Battery Cabinet



- Fasten the battery securing brackets with bolts.
- Connect the battery cables.
- Reinstall all covers removed and close the front doors.

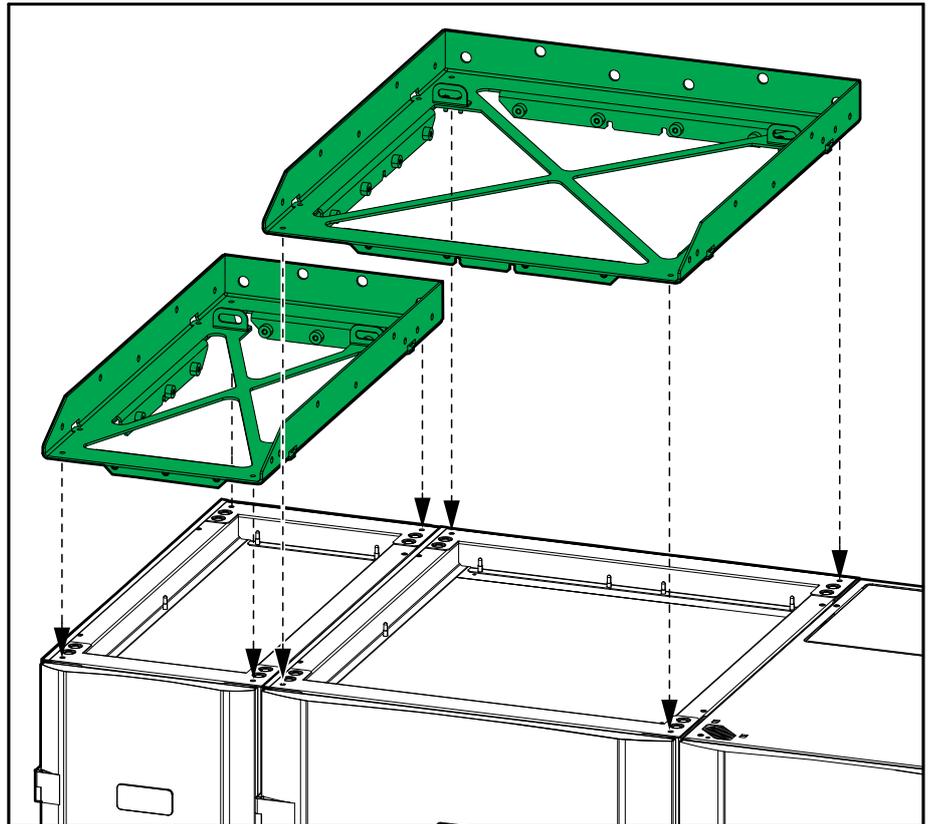
Install Seismic Kit (Option)

NOTE: The modular battery cabinet must be connected to a load bearing wall. The maximum gap between the cabinet and the wall must not exceed 30 mm.

NOTE: The below procedure shows how to install the seismic kit on a narrow and a wide modular battery cabinet. The procedure is applicable for all combinations of modular battery cabinets.

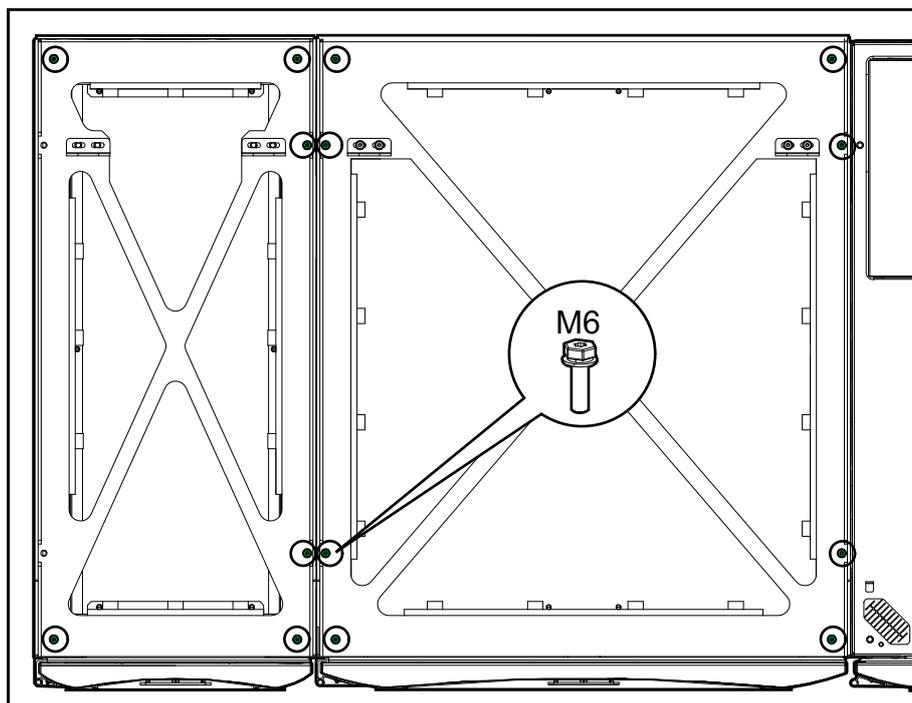
1. Place the seismic kit parts on top of the modular battery cabinets.

Front View of the Narrow and the Wide Modular Battery Cabinets



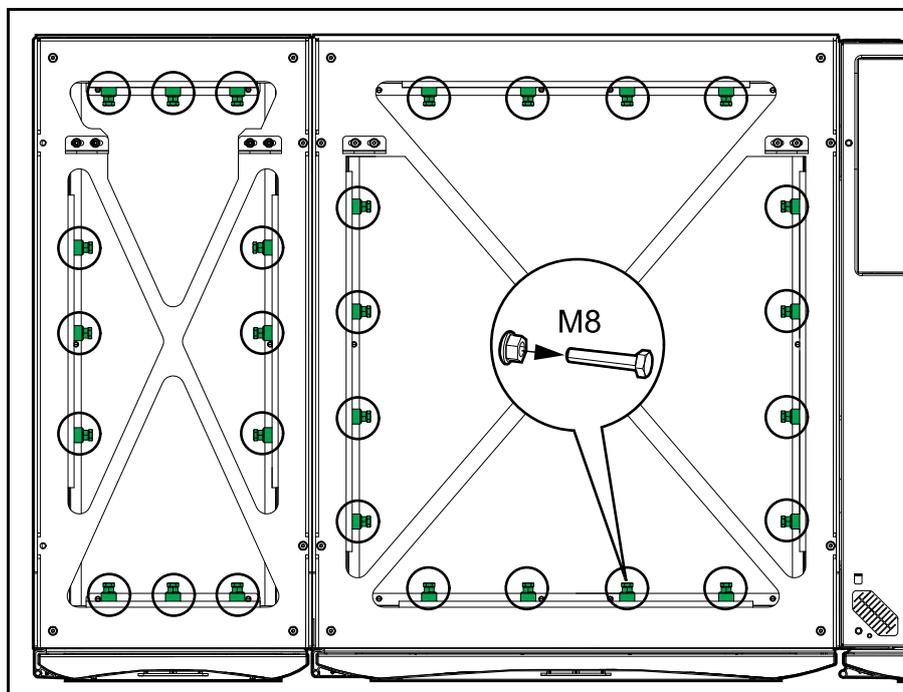
2. Fasten the seismic kit parts to the top of the modular battery cabinets with the provided M6 screws.

Top View of the Narrow and the Wide Modular Battery Cabinets



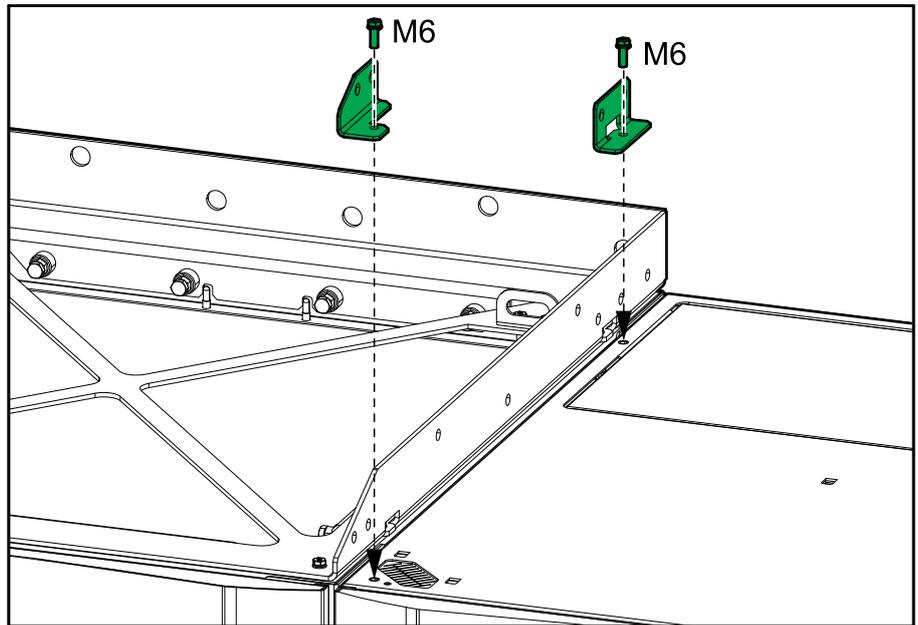
3. Fasten the seismic kit parts to the top of the modular battery cabinets with the provided M8 nuts and screws.

Top View of the Narrow and the Wide Modular Battery Cabinets



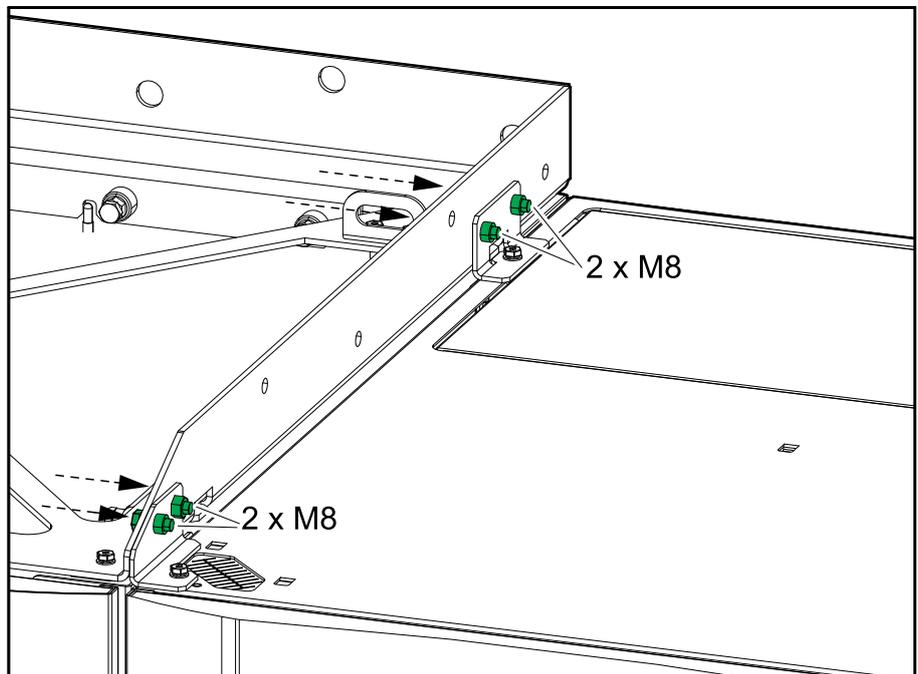
- Place the two top anchoring brackets between the modular battery cabinet and the power cabinet. Fasten to the power cabinet with the provided M6 screws.

Front View of the Wide Modular Battery Cabinet and the Power Cabinet



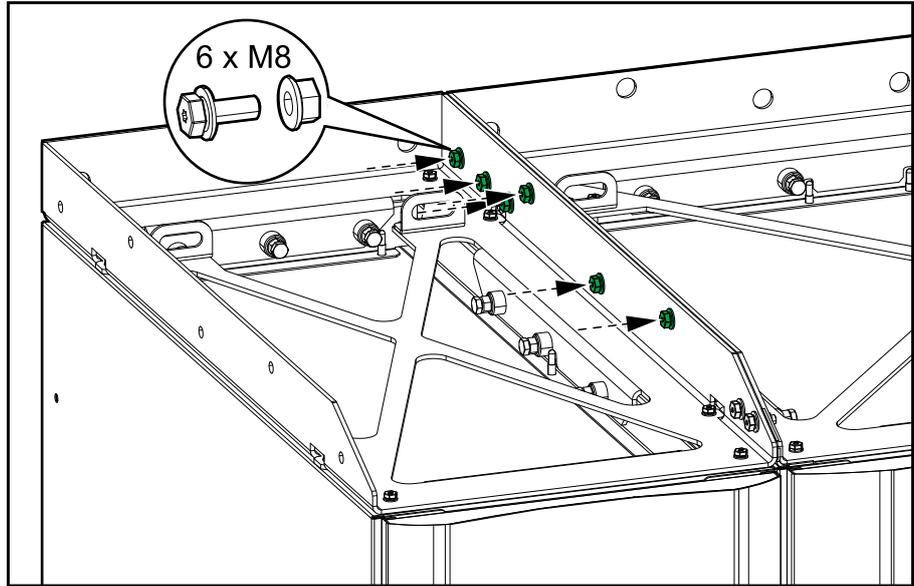
- Fasten the top anchoring bracket to the seismic kit part with the provided M8 screws.

Front View of the Wide Modular Battery Cabinet and the Power Cabinet



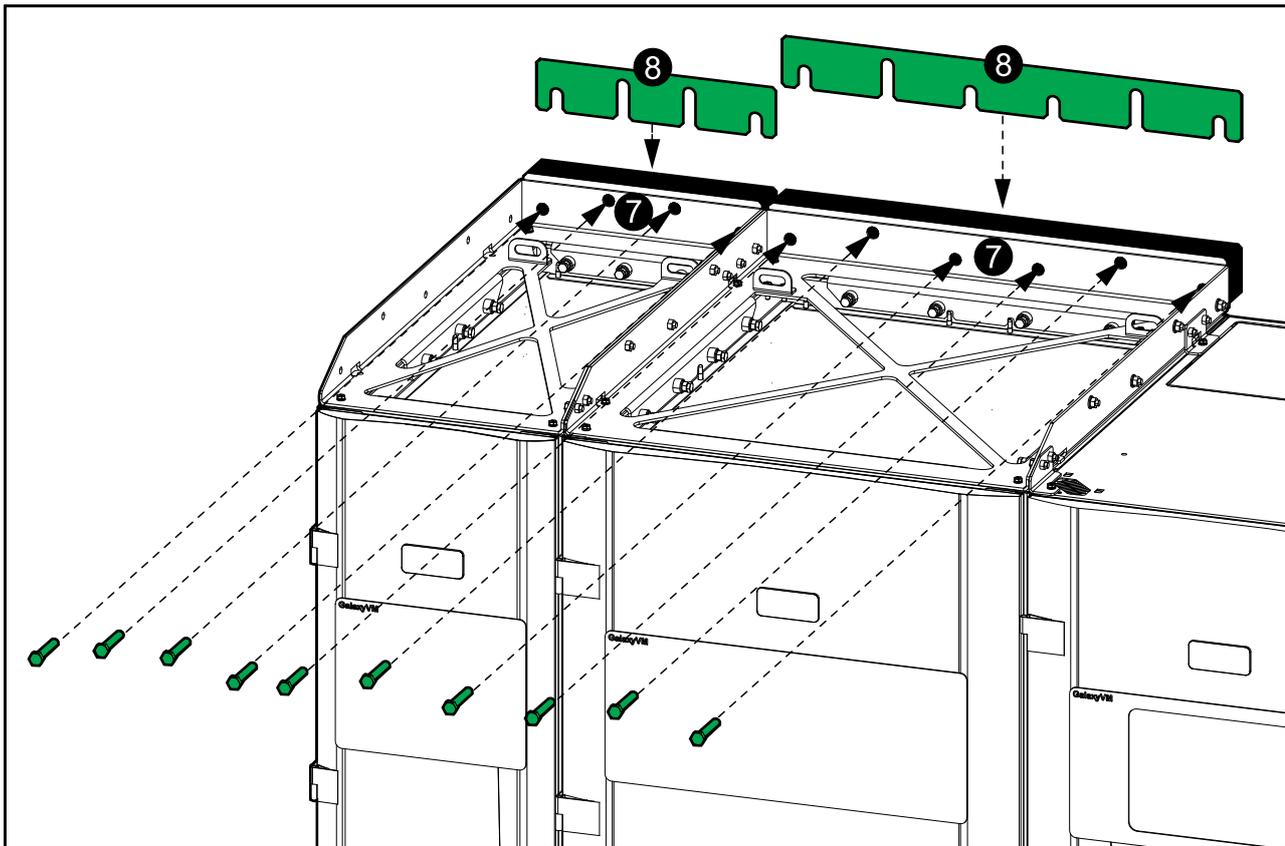
6. In systems with more than one modular battery cabinet, assemble the seismic kit parts with the provided M8 bolts and nuts.

Front View of the Narrow and the Wide Modular Battery Cabinets



7. Fasten the seismic kit parts to the wall using M12 bolts (not provided).

Front View of the Narrow and the Wide Modular Battery Cabinets



8. Place the provided plates over the M12 bolts between the seismic kit parts and the wall to fill up the gap between the wall and the modular battery cabinets.

Schneider Electric
35 rue Joseph Monier
92500 Rueil Malmaison
France

+ 33 (0) 1 41 29 70 00

www.schneider-electric.com

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