

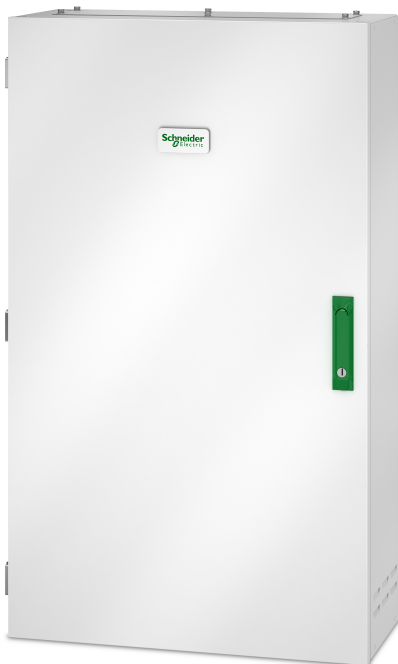
# Galaxy VX

## Battery Breaker Box

### Installation

GVXBBB630AH, GVXBBB1000AH

Latest updates are available on the Schneider Electric website  
9/2023



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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.

Per IEC 62040-1: "Uninterruptible power systems (UPS) -- Part 1: Safety Requirements," this equipment, including battery access, must be inspected, installed and maintained by a skilled person.

The skilled person is a person with relevant education and experience to enable him or her to perceive risks and to avoid hazards which the equipment can create (reference IEC 62040, section 3.102).

## 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**

The battery breaker box 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.**

### **⚠ 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.**

## Electrical Safety


### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Electrical equipment 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 UPS system before working on or inside the equipment.
- Before working on the UPS system, check for hazardous voltage between all terminals including the protective earth.
- The UPS contains an internal energy source. Hazardous voltage can be present even when disconnected from the mains supply. Before installing or servicing the UPS system, ensure that the units are OFF and that mains and batteries are disconnected. Wait five minutes before opening the UPS to allow the capacitors to discharge.
- The UPS must be properly earthed/grounded and due to a high leakage current, the earthing/grounding conductor must be connected first.

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

# Battery Breaker Box Specifications

 **DANGER**

**HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH**  
The battery breaker box must only be used with the Galaxy VX UPS.  
**Failure to follow these instructions will result in death or serious injury.**

	GVXBBB630AH	GVXBBB1000AH
Circuit breaker	Breaker rating: 600 A Ir: 600, Im: 1500	Breaker rating: 1000 A Ir: 1000, Im: 2500
Maximum configuration	1 hour runtime	1 hour runtime
Battery type	Lead-acid	Lead-acid
Maximum battery short-circuit level (kA)	50	50

## Recommended Cables

Recommended cables are based on table B.52.12 and B.52.13 of IEC 60364–5–52 with the following assertions:

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper or aluminium conductors
- Installation method F

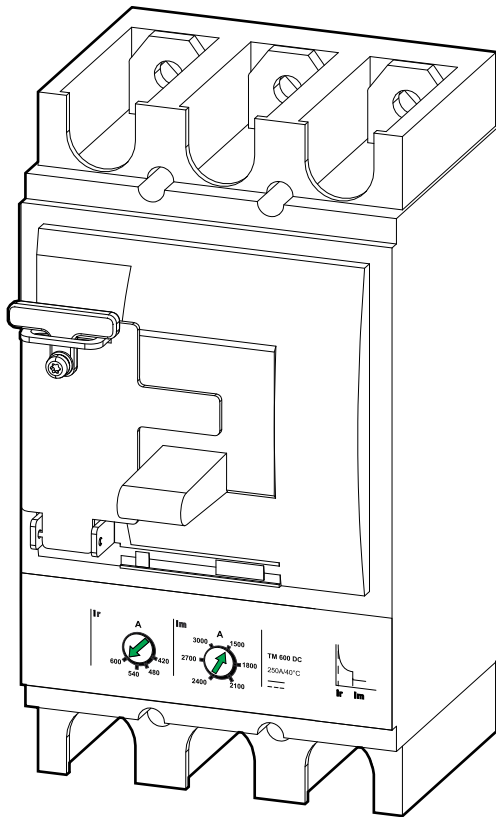
If the ambient temperature is greater than 30 °C, larger conductors are to be selected in accordance with the correction factors of the IEC.

**NOTE:** Refer to the UPS Installation Manual for recommended cable sizes.

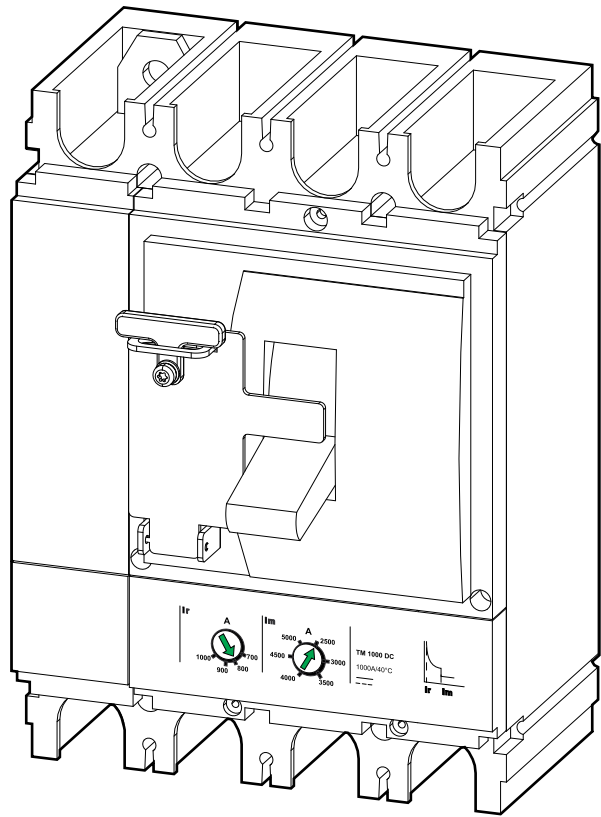


## Trip Settings

**Trip Settings in GVXBBB630AH**



**Trip Settings in GVXBBB1000AH**



	500 kW		625 kW		750 kW	
Number of Strings	Battery Breaker Rating (A)	Ir Setting	Battery Breaker Rating (A)	Ir Setting	Battery Breaker Rating (A)	Ir Setting
1	NA	NA	NA	NA	NA	NA
2	1000	0.7	1000	0.9	1000	1
3	600	0.8	600	1	1000	0.7
4	600	0.7	600	0.8	600	0.9
5	600	0.7	600	0.7	600	0.7
6	600	0.7	600	0.7	600	0.7
7	600	0.7	600	0.7	600	0.7
8	600	0.7	600	0.7	600	0.7

	1000 kW		1250 kW		1500 kW	
Number of Strings	Battery Breaker Rating (A)	Ir Setting	Battery Breaker Rating (A)	Ir Setting	Battery Breaker Rating (A)	Ir Setting
1	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA
3	1000	1	NA	NA	NA	NA
4	1000	0.7	1000	0.9	1000	1
5	600	1	1000	0.7	1000	0.9
6	600	0.8	600	1	1000	0.7
7	600	0.7	600	0.9	600	1
8	600	0.7	600	0.8	600	0.9

## Battery Breaker Box Shipping Weights and Dimensions

Commercial reference	Weight kg	Height mm <sup>1</sup>	Width mm	Depth mm
GVXBBB630AH	75	540	840	1220
GVXBBB1000AH	80	540	840	1220

## Battery Breaker Box Weights and Dimensions

Commercial reference	Weight kg	Height mm	Width mm	Depth mm
GVXBBB630AH	55	1100	650	280
GVXBBB1000AH	60	1100	650	280

## Environment



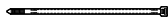

	Operating	Storage
Temperature	0 °C to 40 °C	-25 °C to 55 °C
Relative humidity	5-95% non-condensing	10-80% non-condensing
Elevation	0-3000 m	
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

## Compliance

Safety	IEC 62040-1: 2017, Edition 2.0, Uninterruptible Power Systems (UPS) - Part 1: Safety requirements
Performance	IEC 62040-3: 2011-03, 2nd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements
Environmental	IEC 62040-4: 2013-04, 1st edition Uninterruptible Power Systems (UPS) - Part 4: Environmental aspects – Requirements and reporting
Markings	CE
Earthing system	TN-C, TN-S, TT
Overvoltage category	OVCIII
Protective class	I
Pollution degree	2

1. The product is packaged in a horizontal position, so the shipping height and depth dimensions differ from the product itself.

## Overview of Installation Kit 0H-1491

Part	Used in	Number of units
M10 x 30 torx with washer	Mount the Battery Breaker Box to the Wall, page 13 and Connect the Power Cables, page 17	15 
M10 nut with washer		15 
Cable ties for signal cables	Connect the Power Cables, page 17	5 
Cable tie for power cables		30 

# Installation Procedure

## ⚡ ⚠ DANGER

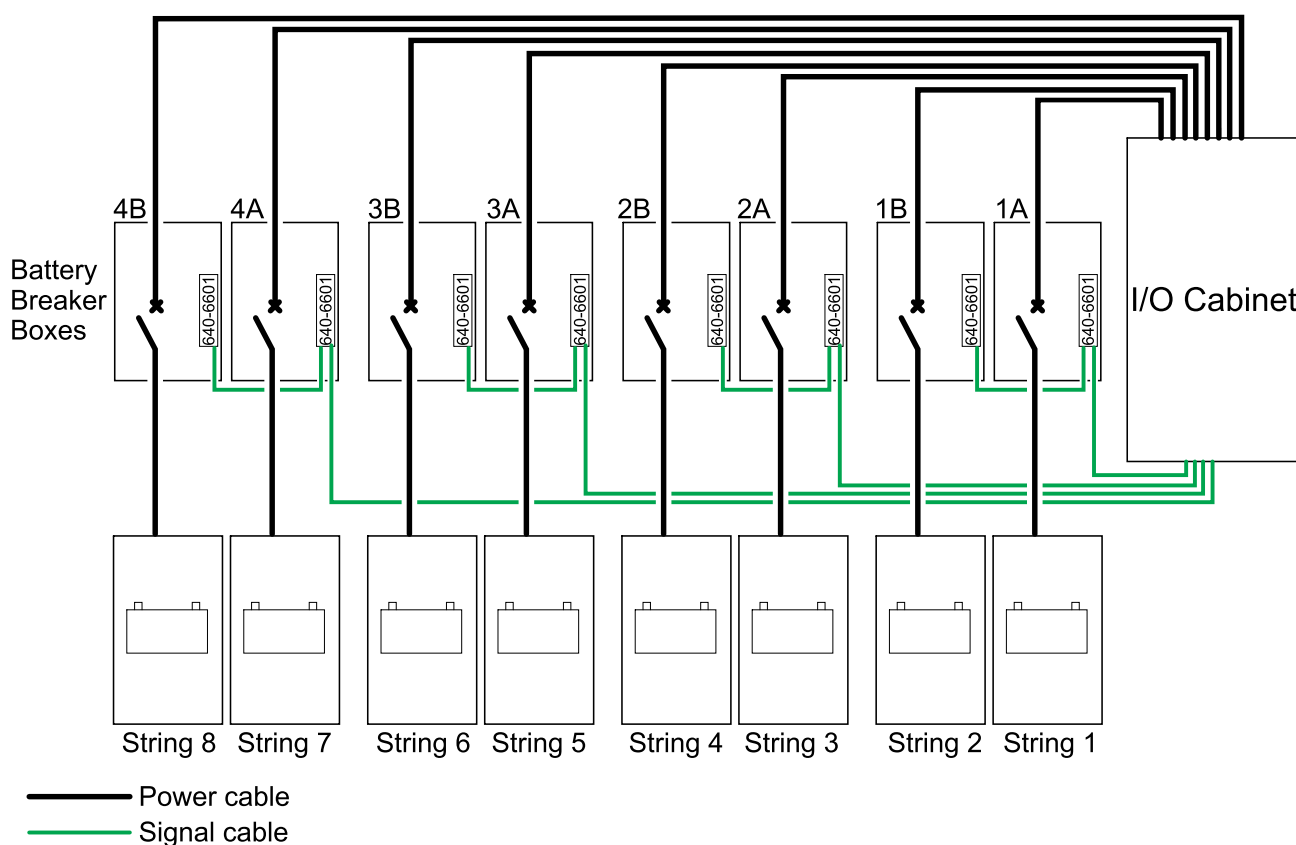
### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Place the battery breaker box as close to the battery bank as possible to limit the length of unprotected battery cable.

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

**NOTE:** The maximum distance between the temperature sensor and the battery breaker box is 2.4 m due to the length of the supplied cable.

### Overview of Signal Cables and Power Cables for Configuration with Eight Battery Strings



1. Mount the Battery Breaker Box to the Wall, page 13.
2. Prepare the Battery Breaker Box for Cables, page 15.
3. Connect the Power Cables, page 17.
4. Connect the Signal Cables between the I/O Cabinet and the Battery Breaker Boxes, page 22.
5. Final Installation Steps, page 24.

For moving or decommissioning the battery breaker box after installation has been completed, see Decommission or Move the Battery Breaker Box to a New Location, page 25.

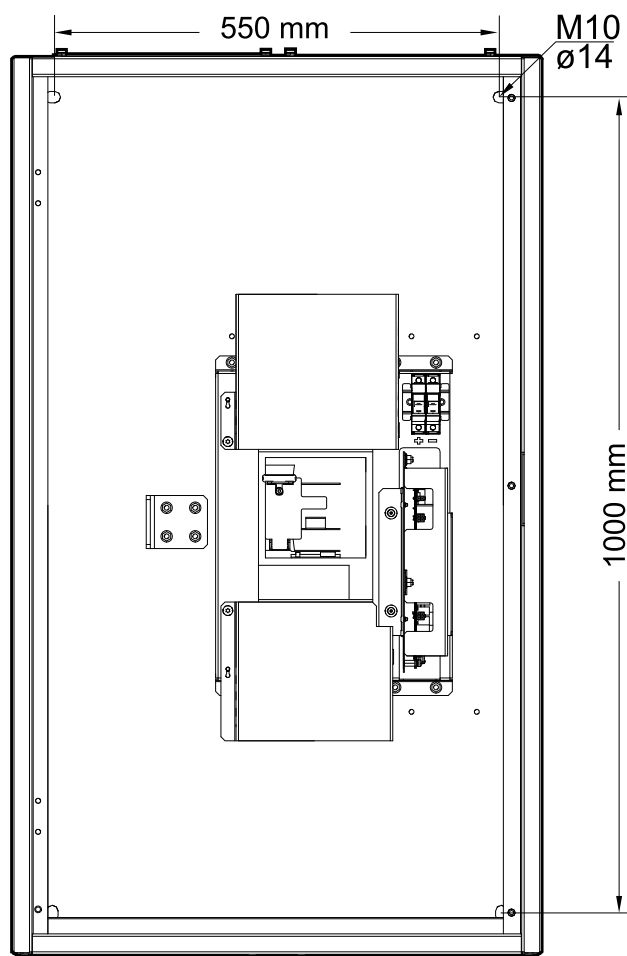
## Mount the Battery Breaker Box to the Wall

### ⚠ CAUTION

#### RISK OF INJURY OR EQUIPMENT DAMAGE

- Mount the battery breaker box to a wall or a rack that is structurally sound and able to support the weight of the unit.
- Use appropriate hardware for the type of wall to mount the battery breaker box to the wall.

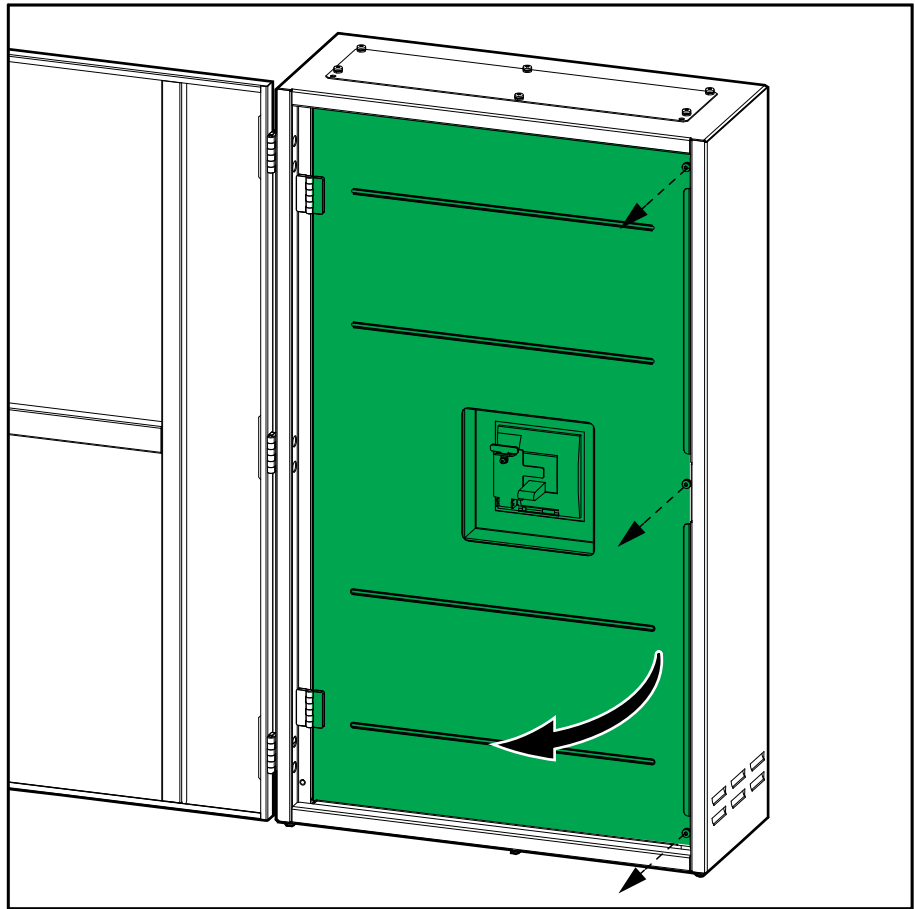
**Failure to follow these instructions can result in injury or equipment damage.**



1. Measure and mark the four mounting hole locations on the wall.
2. Drill holes in each of the four marked locations.
3. Open the front door of the battery breaker box.
4. Lockout/Tagout the battery breaker in the OFF (open) position.

5. Loosen the three screws and open the dead front panel.

#### Front View of Battery Breaker Box



6. Lift the battery breaker box, position it against the wall and line it up with the four holes. Fasten with four M10 screws.

**NOTE:** Four M10 x 30 torx and nuts are supplied for mounting the battery breaker box to a battery rack. If the battery breaker box is mounted to a wall, use suitable mounting equipment.

### ⚠ CAUTION

#### HEAVY LOAD

The battery breaker box is heavy (60 kg). Use appropriate tools to safely lift the battery breaker box.

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

# Prepare the Battery Breaker Box for Cables

## ⚡⚠ DANGER

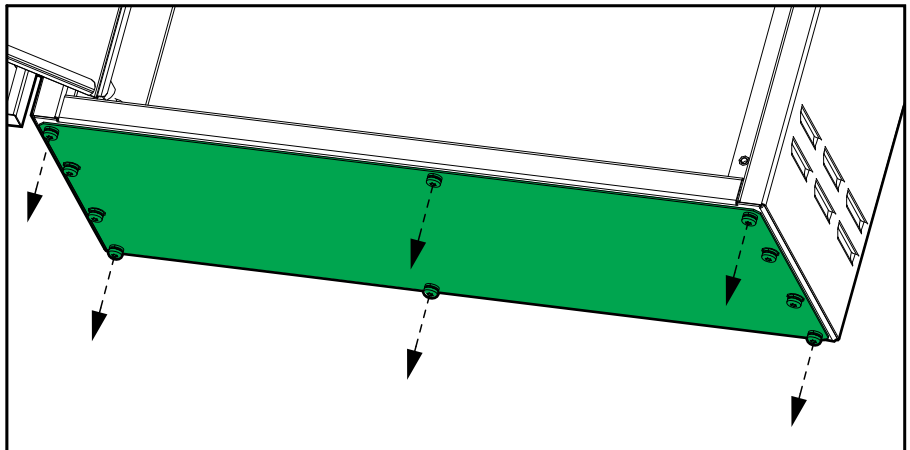
### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

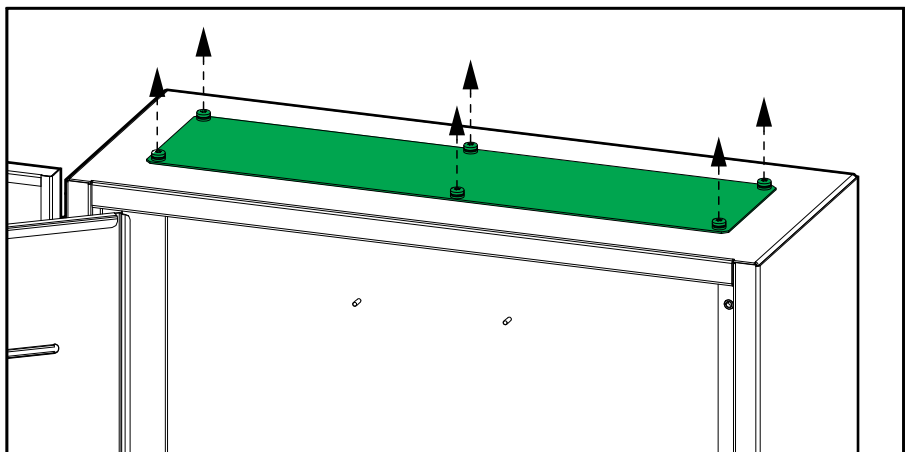
1. Remove the bottom gland plate.

#### Front Bottom View of Battery Breaker Box



2. If the cables from the I/O cabinet should be routed through the top, remove the top gland plate.

#### Front View of Battery Breaker Box



3. Drill or punch holes for cables or grommets (not provided).

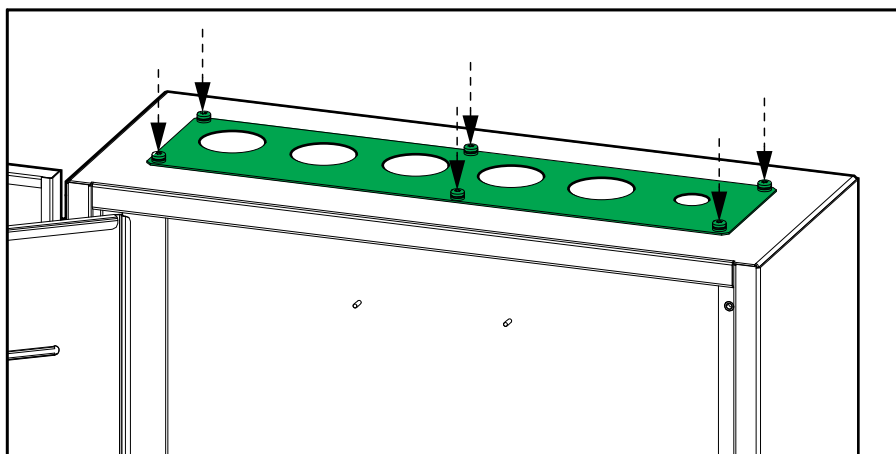
4. Install grommets (if applicable) and refit the gland plate(s).

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

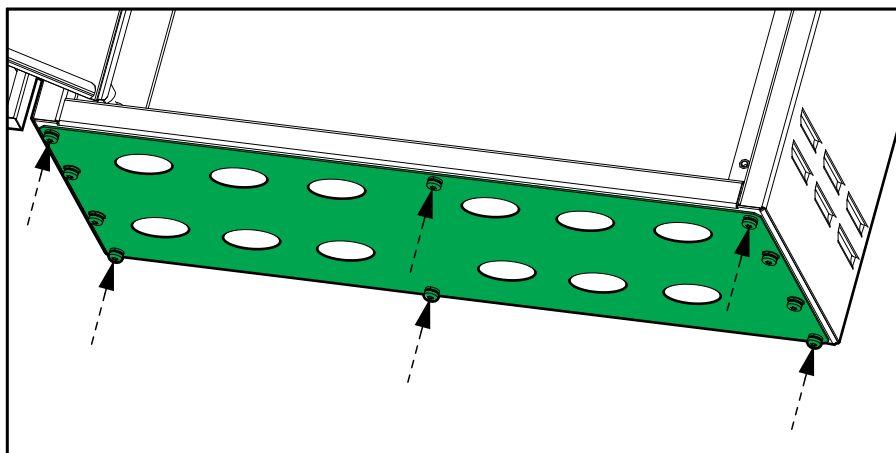
Ensure that there are no sharp edges that can damage the cables.

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

**Front View of Battery Breaker Box**



**Front Bottom View of Battery Breaker Box**





## Connect the Power Cables

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

Perform a total power off of the UPS system before connecting the battery cables to the battery breaker box.

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

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

For TT and TN systems each stand alone cabinet of the system must be individually connected to the protective earthing terminal in the distribution board that supplies the system.

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

### **WARNING**

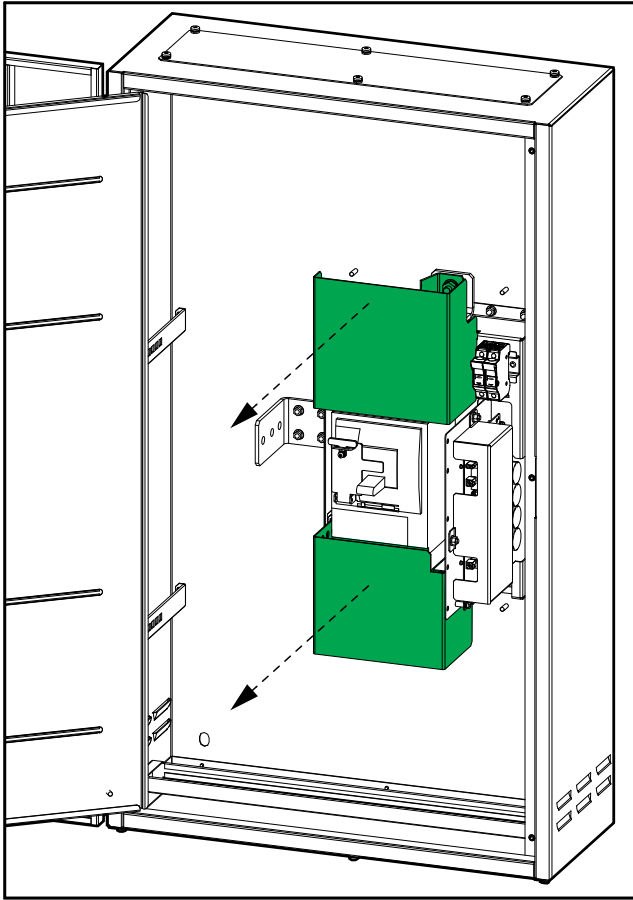
#### **HAZARD OF ARC FLASH**

Use the provided M10 bolts and nuts to connect the power cables.

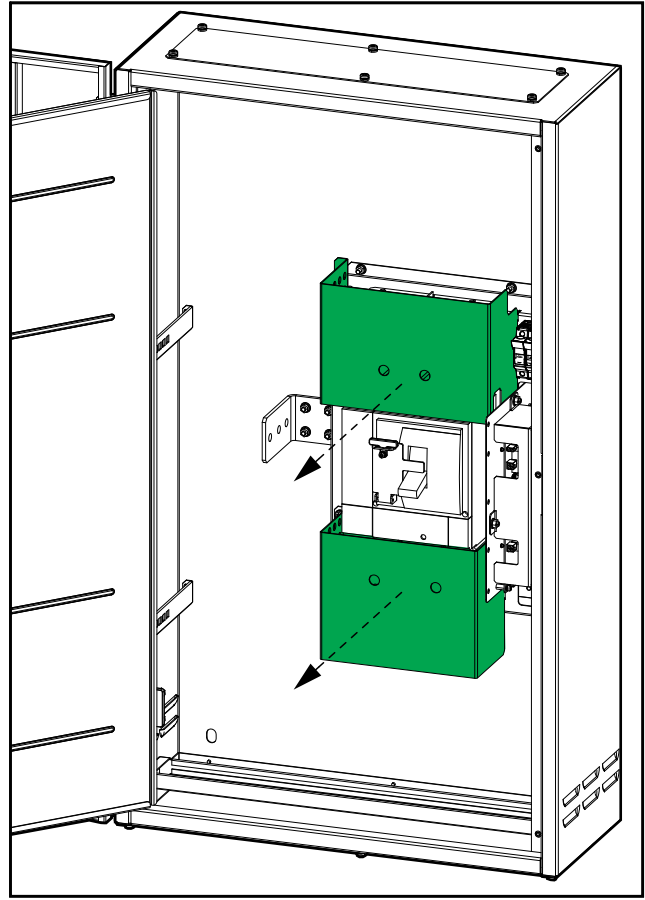
**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

1. Loosen the screw of each inner cover and lift the covers up and out of the battery breaker box.

**Front View of the Battery Breaker Box  
GVXBBB630AH**



**Front View of the Battery Breaker Box  
GVXBBB1000AH**



2. Route the battery cables from the I/O cabinet through either the top or bottom of the battery breaker box and connect.

## ⚠️ DANGER

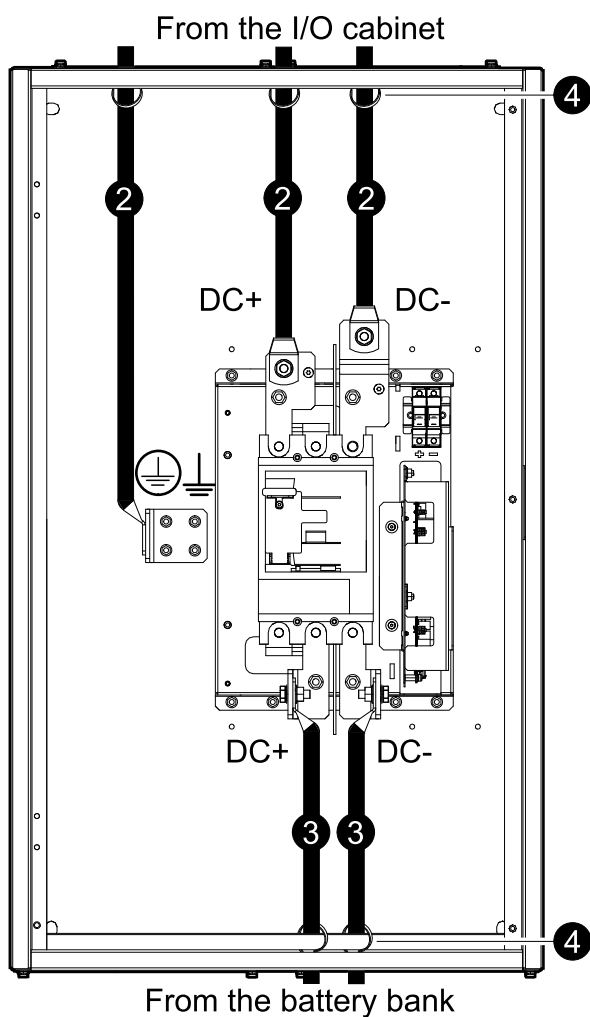
### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Reinstall the inner cover in the top of the battery breaker box before proceeding.

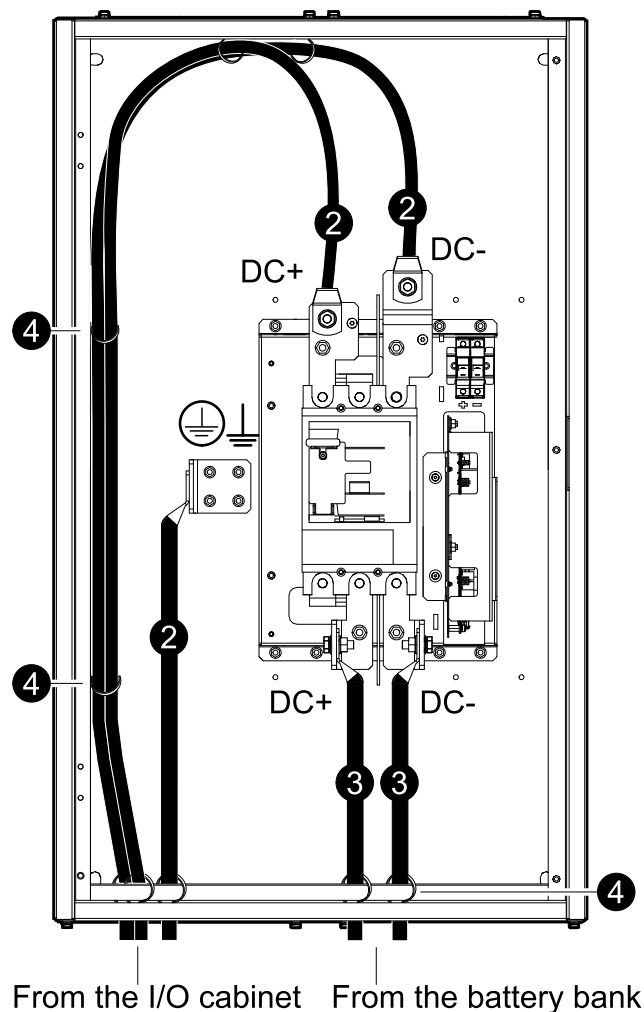
**Failure to follow these instructions will result in death or serious injury.**

#### Battery Breaker Box GVXBBB630AH

Cables from the I/O Cabinet Routed through the Top

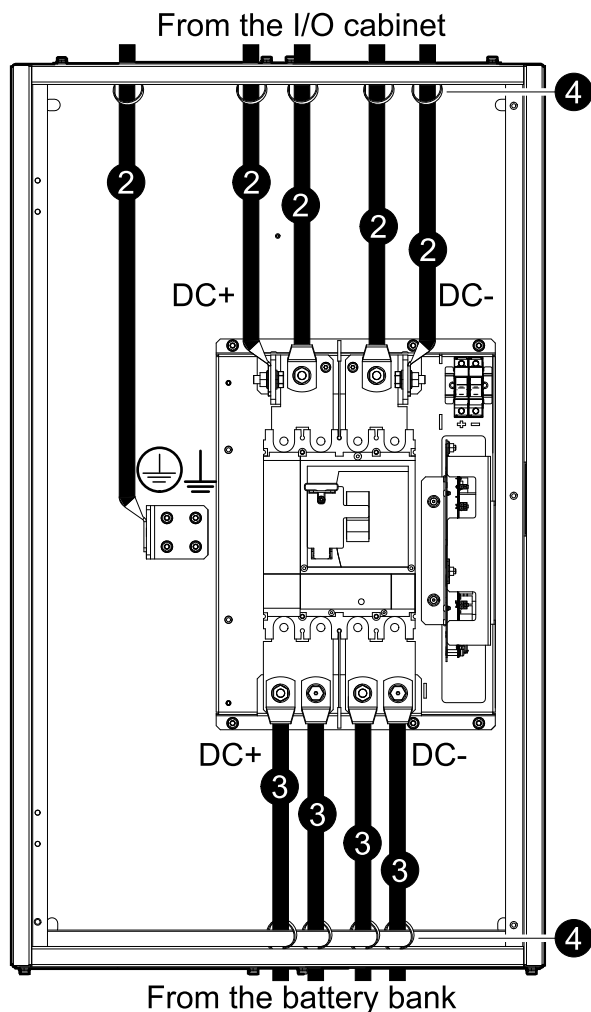


Cables from the I/O Cabinet Routed through the Bottom

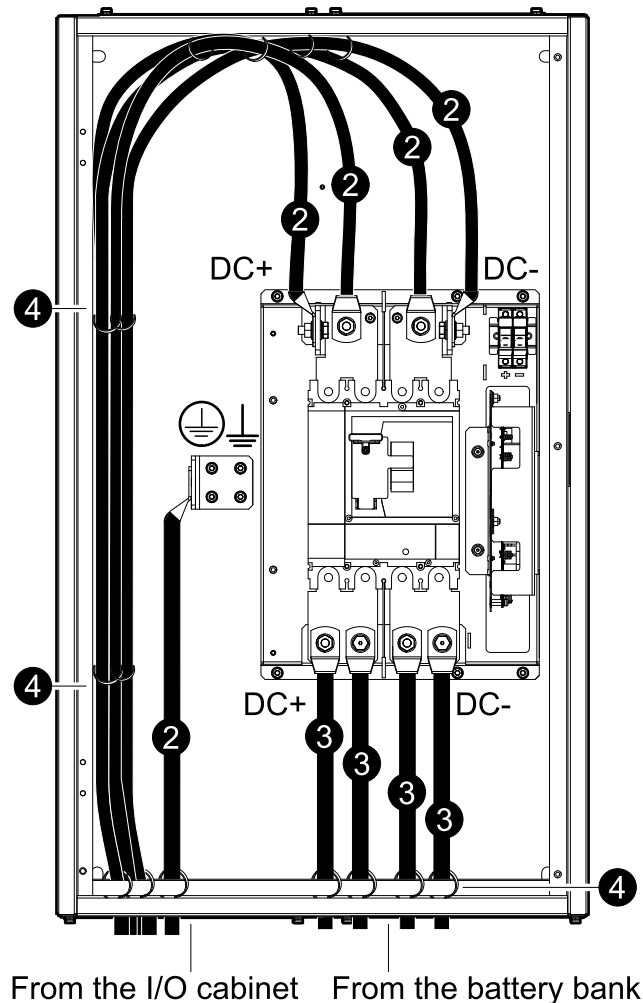


## Battery Breaker Box GVXBBB1000AH

Cables from the I/O Cabinet Routed through the Top



Cables from the I/O Cabinet Routed through the Bottom



3. Route the battery cables from the battery bank through the bottom of the battery breaker box and connect.

### **⚡ DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Reinstall the inner cover in the bottom of the battery breaker box before proceeding.
- Ensure correct polarity.

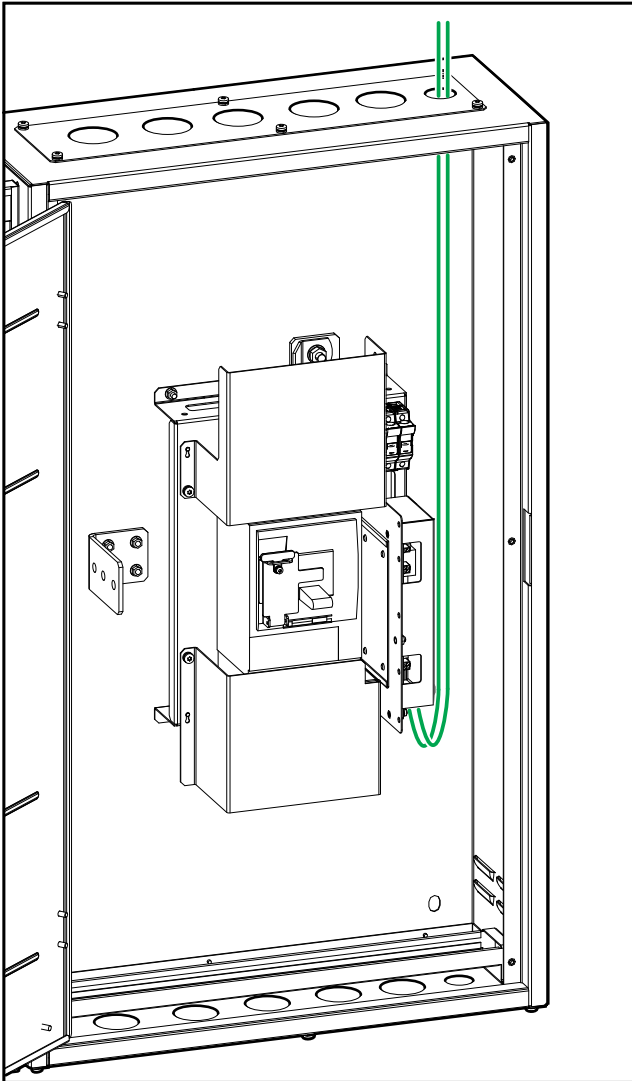
**Failure to follow these instructions will result in death or serious injury.**

4. Attach the cables to the cables reliefs in the left side, the top, and the bottom of the battery breaker box.
5. Install the temperature sensors 0M-1160 in the battery room. Two temperature sensors are provided with the UPS.

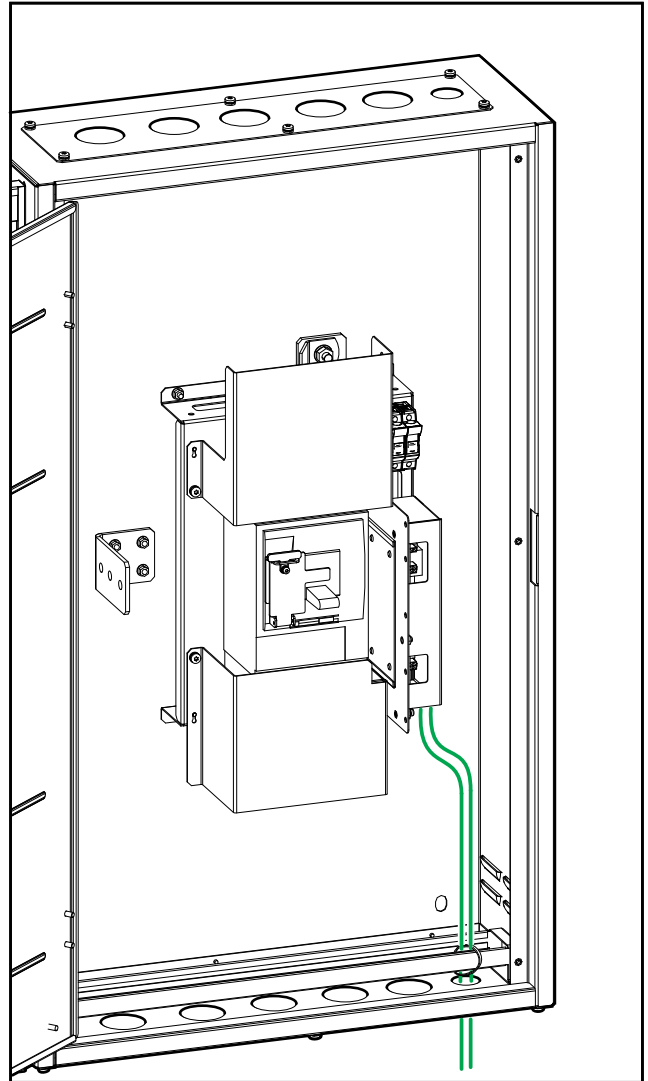
**NOTE:** The maximum distance between the temperature sensor and the battery breaker box is 2.4 m due to the length of the supplied cable.

6. Connect the temperature sensor to the terminals J3803-3 and J3803-4 in the battery breaker box.

**Front View of Battery Breaker Box with Signal Cables Routed through the Top**



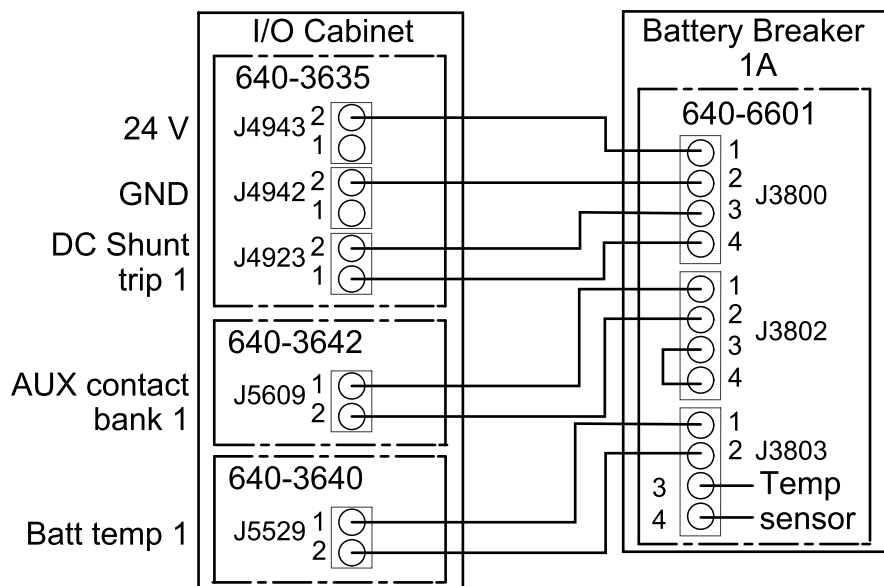
**Front View of Battery Breaker Box with Signal Cables Routed through the Bottom**



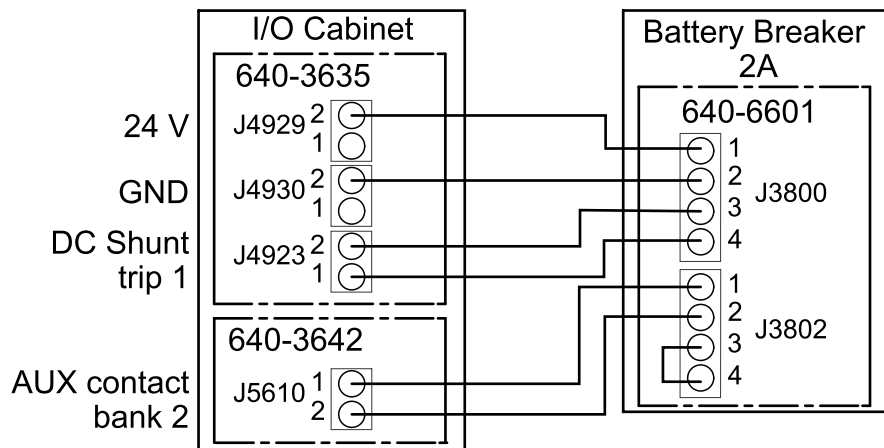
## Connect the Signal Cables between the I/O Cabinet and the Battery Breaker Boxes

**NOTE:** In the example below the two provided temperature sensors are installed in battery breaker box 1 and battery breaker box 3. The temperature sensors can be installed in any of the battery breaker boxes.

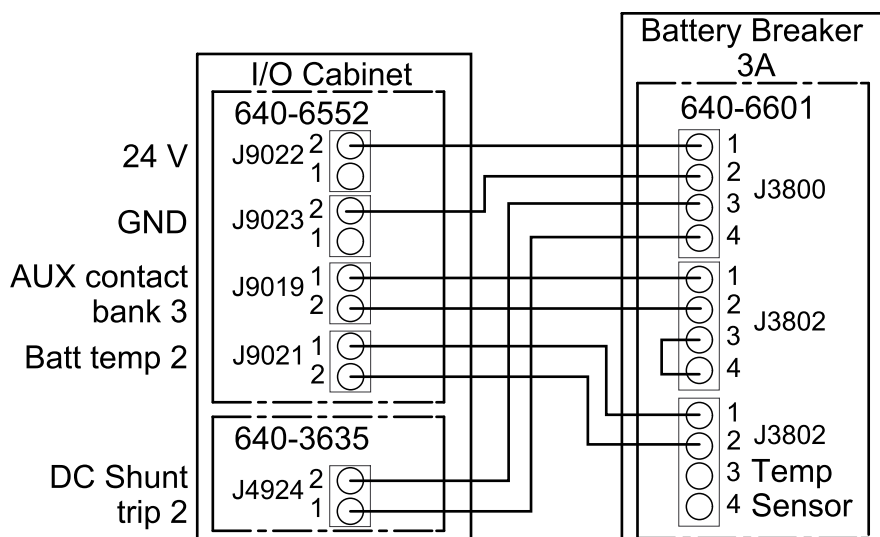
1. Connect the signal cables between the I/O cabinet and battery breaker box 1A.



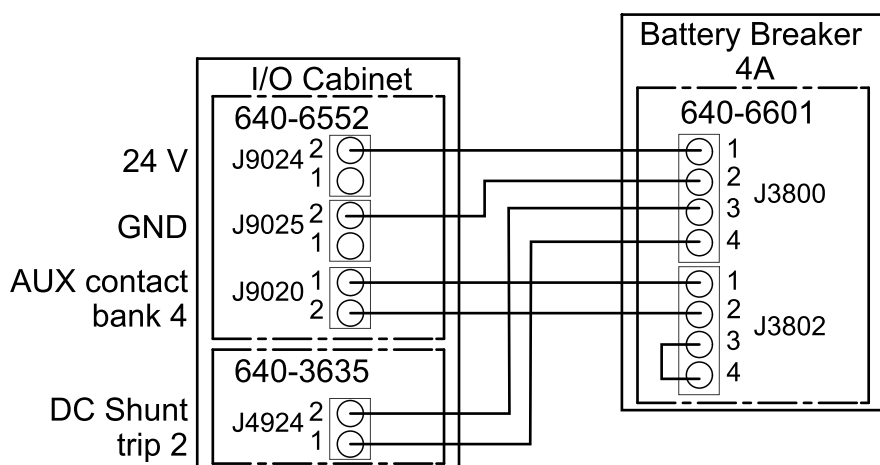
2. Connect the signal cables between the I/O cabinet and battery breaker box 2A.



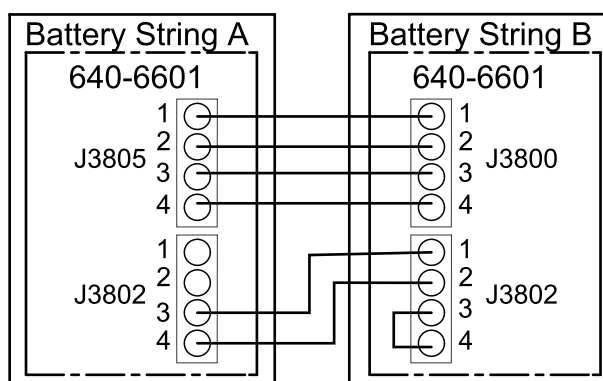
3. Connect the signal cables between the I/O cabinet and battery breaker box 3A.



4. Connect the signal cables between the I/O cabinet and battery breaker box 4A.



5. Signal cables for battery strings 5 to 8 (named B below) must be connected to the boards for battery strings 1 to 4 (named A below) according to the principle below.

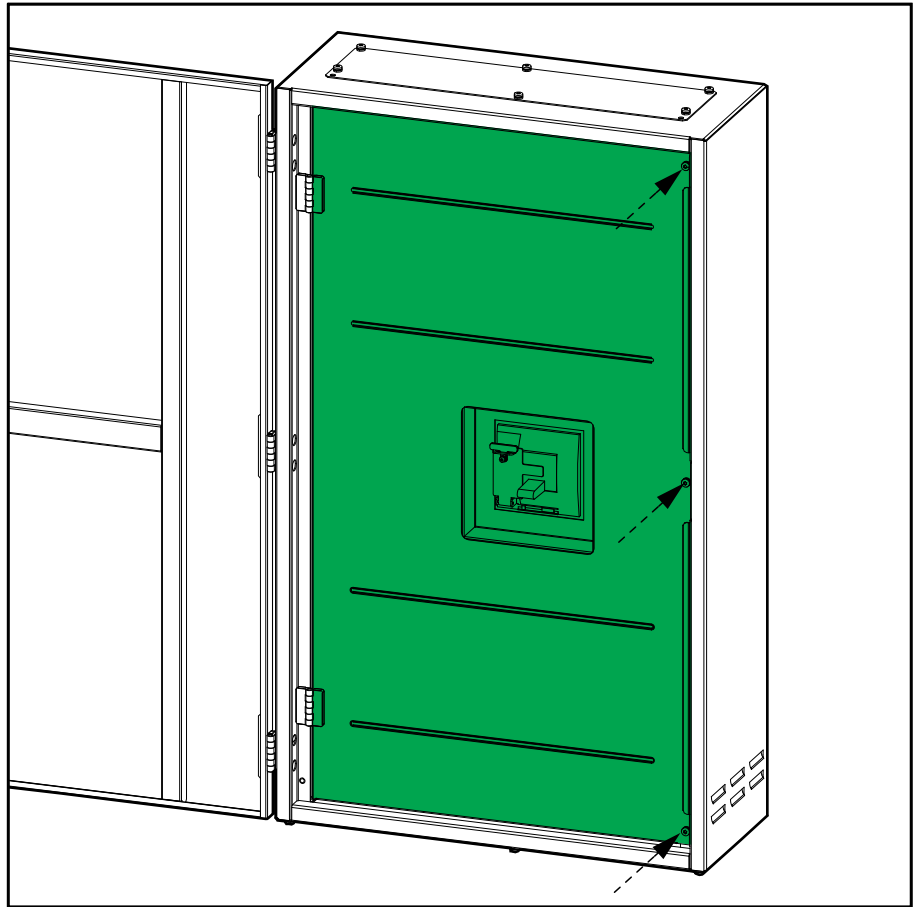


- Remove the jumper between J3802 pin 3 and 4 in battery string A.
- Connect the signal cables between battery string A and battery string B.

## Final Installation Steps

1. Close the dead front panel and fasten with the three screws.

### Front View of the Battery Breaker Box



2. Close the front door of the battery breaker box.



# Decommission or Move the Battery Breaker Box to a New Location

1. Shut down the UPS completely – follow the instructions in the UPS operation manual.
2. Lockout/Tagout all breakers in the switchgear in the OFF (open) position.
3. Lockout/Tagout all battery breakers in the switchgear/battery solution in the OFF (open) position.
4. For battery solutions with no individual battery breaker upstream of this battery breaker box, disconnect the battery cables from the battery solution.

## **⚡ ⚠ DANGER**

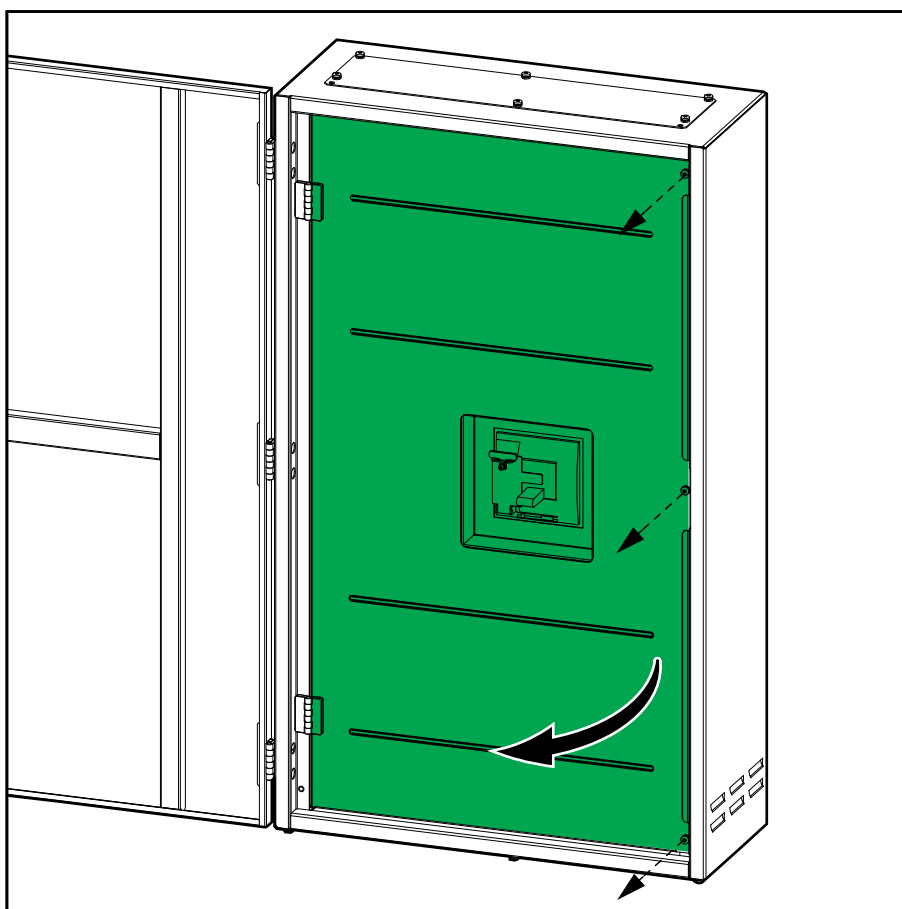
### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

Disconnect the battery cables from the battery solution.

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

5. Open the front door of the battery breaker box.
6. Lockout/Tagout the battery breaker in the OFF (open) position.

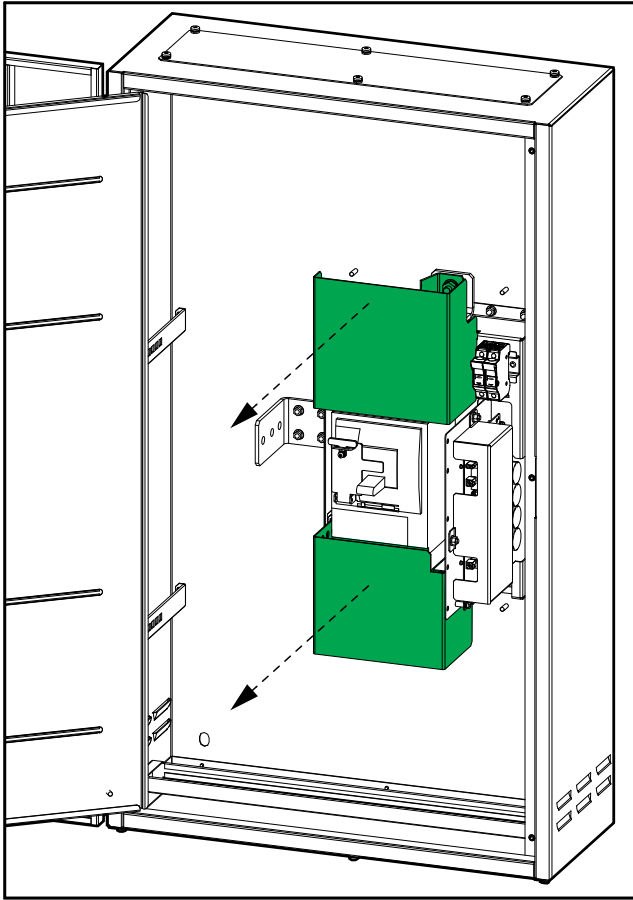
### **Front View of Battery Breaker Box**



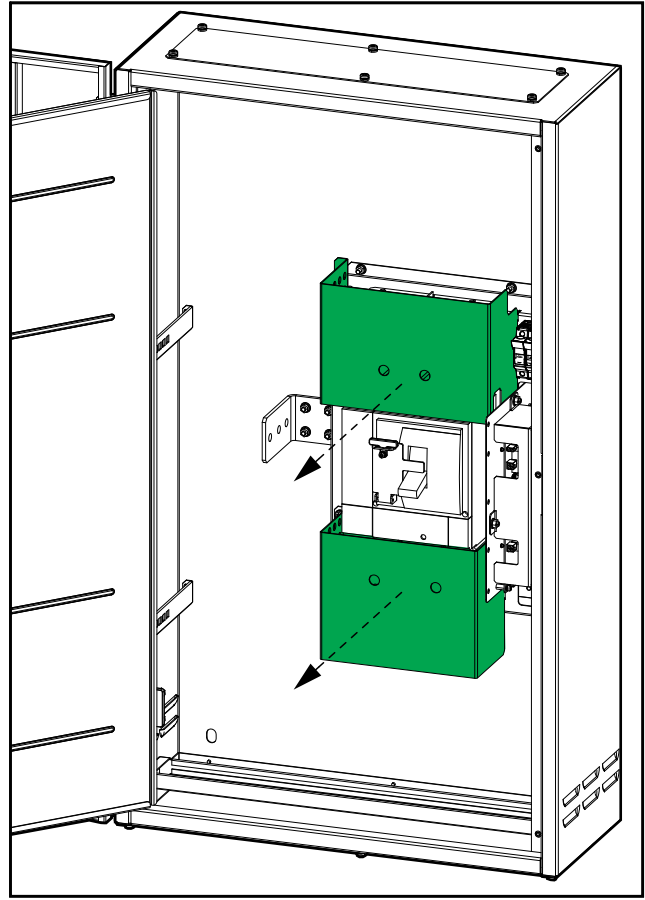
7. Loosen the three screws and open the dead front panel.

8. Loosen the screw of each inner cover and lift the covers up and out of the battery breaker box.

**Front View of the Battery Breaker Box  
GVXBBB630AH**



**Front View of the Battery Breaker Box  
GVXBBB1000AH**

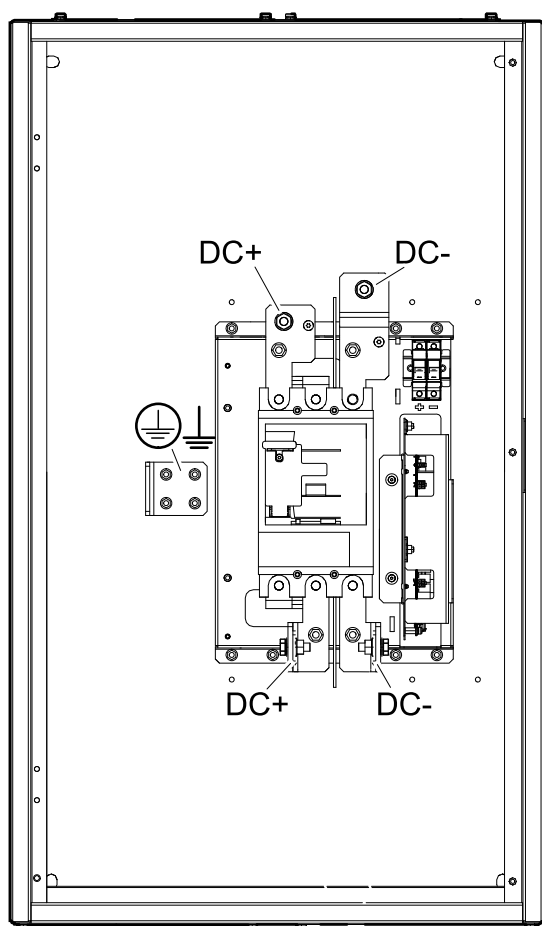
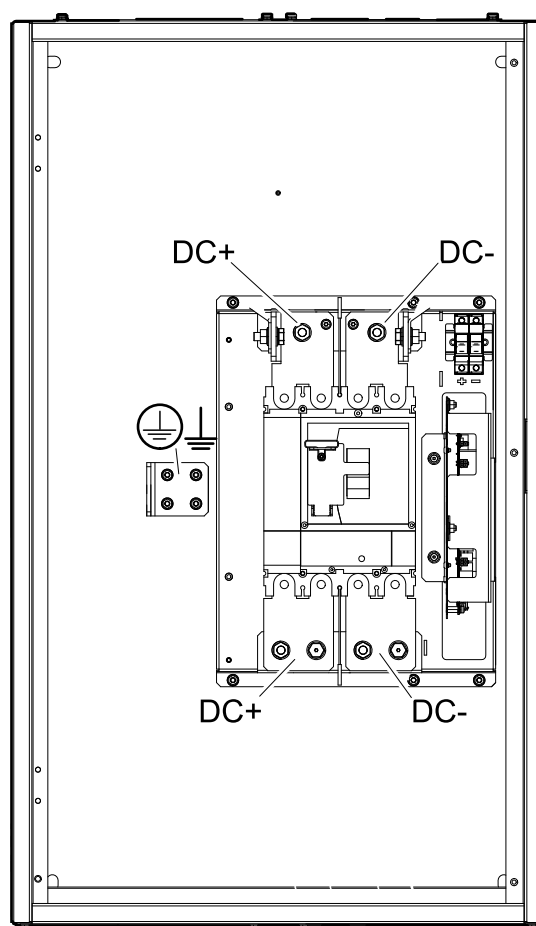


9. Measure for and verify ABSENCE of voltage on each DC busbar before continuing.

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

Measure for and verify ABSENCE of voltage on each DC busbar before continuing.

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

**Battery Breaker Box GVXBBB630AH****Battery Breaker Box GVXBBB1000AH**

10. Disconnect and remove all power cables from the battery breaker box.
11. Reinstall the inner covers.
12. Disconnect and remove all temperature sensor signal cables from the battery breaker box. See *Connect the Power Cables*, page 17 for details.
13. Disconnect and remove all signal cables from the battery breaker box. See *Connect the Signal Cables between the I/O Cabinet and the Battery Breaker Boxes*, page 22 for details.

14. Remove the four M10 screws from the wall and remove the battery breaker box from the wall.

## **⚠ CAUTION**

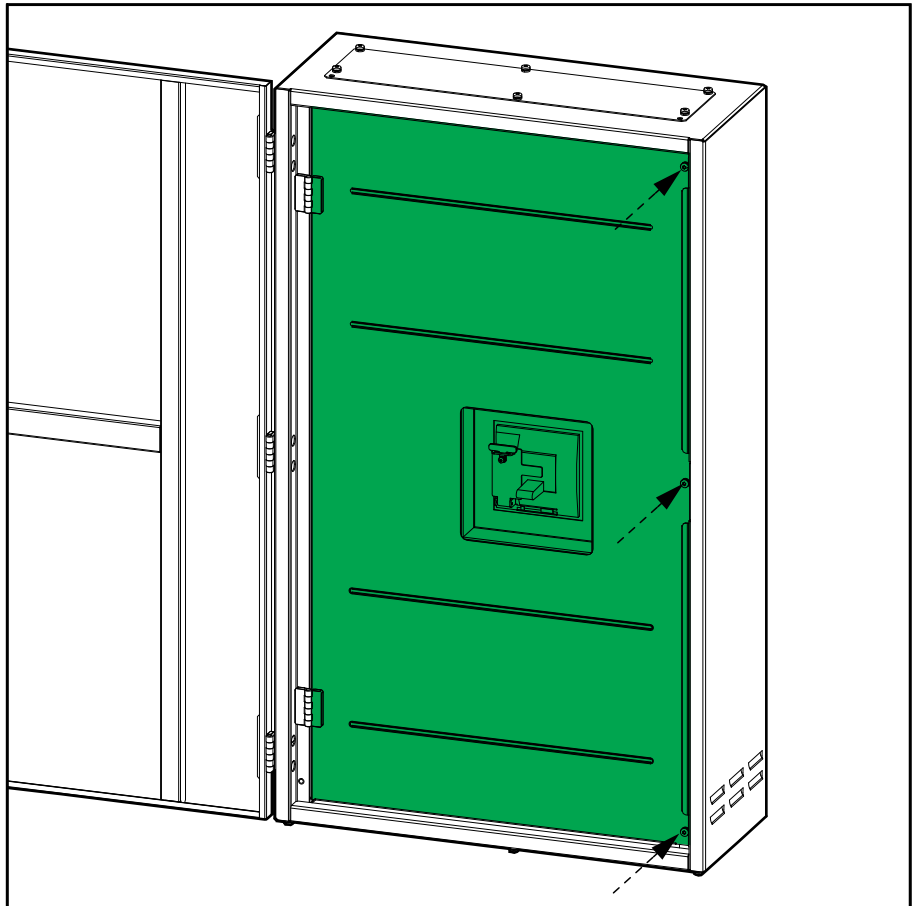
### **HEAVY LOAD**

The battery breaker box is heavy (60 kg). Use appropriate tools to safely lift the battery breaker box.

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

15. Close the dead front panel and fasten with the three screws.

### **Front View of the Battery Breaker Box**



16. Close and lock the front door of the battery breaker box.

## 17. For transport:

<b>⚠ WARNING</b>
<b>TIPPING HAZARD</b>
For transport of the battery breaker box ensure:
<ul style="list-style-type: none"><li>• that personnel performing the transport have necessary skills and have received adequate training;</li><li>• to use appropriate tools to safely lift and transport the product;</li><li>• to protect the product against damage by using appropriate protection (like wrapping or packaging).</li></ul>
<b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>

Transportation requirements:

- Mount the battery breaker box in a horizontal position in the center of a suitable pallet with minimum pallet dimensions: 840 mm x 1220 mm. The pallet must be suitable for the weight of the battery breaker box (60 kg).
- Mount the battery breaker box to the pallet with appropriate means of fixation that can withstand vibrations and shocks during loading, transport, and unloading.
- The original shipping pallet in combination with the original transportation brackets can be reused, if in undamaged condition.

<b>⚠ WARNING</b>
<b>UNEXPECTED EQUIPMENT BEHAVIOR</b>
Do not lift the battery breaker box with a forklift/pallet truck directly as it may bend or damage the battery breaker box.
<b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>

## 18. Perform one of the following:

- Decommission the battery breaker box, OR
- Move the battery breaker box to a new location to install it.

19. **Only for installing the battery breaker box in a new location:** Follow the installation manual to install the battery breaker box in the new location. See [Installation Procedure, page 12](#) for installation overview. Reinstallation and startup must only be performed by qualified personnel.





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As standards, specifications, and design change from time to time,  
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