

Galaxy 300

Classic Battery Cabinet

Installation

08/2015



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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.

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Important Safety Information

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



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



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

⚠ DANGER

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

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

⚠ WARNING

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

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

⚠ CAUTION

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

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

NOTICE

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

Failure to follow these instructions can result in equipment damage.

Please Note

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

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

Safety Precautions

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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. Startup 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 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.

⚠ WARNING**HAZARD 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 death, serious injury, or equipment damage.

⚠ WARNING**HAZARD 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 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.

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

In systems where backfeed protection is not part of the standard design, an automatic isolation device (backfeed protection option or other device meeting the requirements of IEC/EN 62040–1 or UL1778 4th Edition – depending on which of the two standards apply to your local area) must be installed to prevent hazardous voltage or energy at the input terminals of the isolation device. The device must open within 15 seconds after the upstream power supply fails and must be rated according to the specifications.

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

When the UPS input is connected through external isolators that, when opened, isolate the neutral or when the automatic backfeed isolation is provided external to the equipment or is connected to an IT power distribution system, a label must be fitted at the UPS input terminals, and on all primary power isolators installed remote from the UPS area and on external access points between such isolators and the UPS, by the user, displaying the following text (or equivalent in a language which is acceptable in the country in which the UPS system is installed):

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

Risk of Voltage Backfeed. Before working on this circuit: Isolate the UPS and check for hazardous voltage between all terminals including the protective earth.

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

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.

CAUTION

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, we recommend 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 injury or equipment damage.

Specifications

Battery Specifications

	60 kVA	80 kVA
Charging power	6.04 kW charge from 0% to 100% load	
Nominal battery voltage (16 blocks/15 blocks) (VDC)	±192/180	
Nominal float voltage (16 blocks/15 blocks) (VDC)	±218/206	
End of discharge voltage (16 blocks/15 blocks) (full load) (VDC)	±158/148	
End of discharge voltage (16 blocks/15 blocks) (no load) (VDC)	±158/148	
Battery current at full load and nominal battery voltage (16 blocks/15 blocks)(A)	137/146	183/195
Battery current at full load and minimum battery voltage (16 blocks/15 blocks)(A)	167/176	222/236
Temperature compensation	Yes	
Ripple current	< 5% C10	
Battery test	Yes	
Deep discharge protection	Yes	
Recharge according to battery temperature	Yes	

Recommended Cable Sizes

NOTE: All wiring must comply with all applicable national and/or electrical codes. The below specifications are recommendations only.

Battery cables are based on table 52–C2 of IEC 60364–5–52 with the following assertions:

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Single core cables
- XLPE type

Protective earth (PE) cables are sized in accordance with IEC 60364-5-54 Article 543 and Table 54.3.

Battery cables (mm ²)	70
PE cables (mm ²)	35

Recommended Bolt and Lug Sizes

Cable Size (mm ²)	Terminal Bolt Diameter	Cable Lug Type
35	M6	KST TLK35-6
70	M8	KST TLK70-8

Torque Specifications

Bolt size	Torque
M3	1 Nm
M4	1.2–2.2 Nm
M5	3.5–4.5 Nm
M6	4.5–6 Nm
M8	10–12 Nm

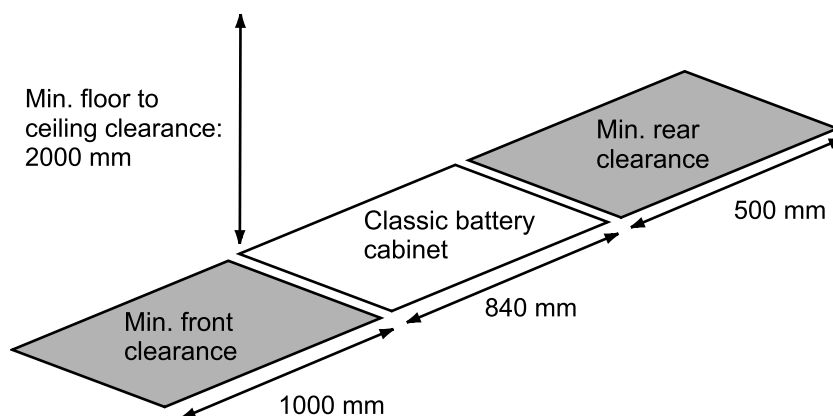
Classic Battery Cabinet Weights and Dimensions

Classic battery cabinet	Weight kg	Height mm	Width mm	Depth mm
Classic battery cabinet (G3HTBAT4)	855	1900	702	838
Classic battery cabinet (G3HTBAT5)	1020			
Empty classic battery cabinet (G3HTEFBATH)	125			

NOTE: The final weight of the cabinet with batteries depends on chosen runtime, number of battery blocks and battery brand and type. The weights given here are only approximate weights measured with a Schneider Electric battery solution and must only be used as an indication of an approximate final weight.

Classic Battery Cabinet Clearance

NOTE: Clearance dimensions are published for airflow and service access only. Consult with the local safety codes and standards for additional requirements in your local area.



Connect the Battery Cables to the Classic Battery Cabinets

⚠ 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

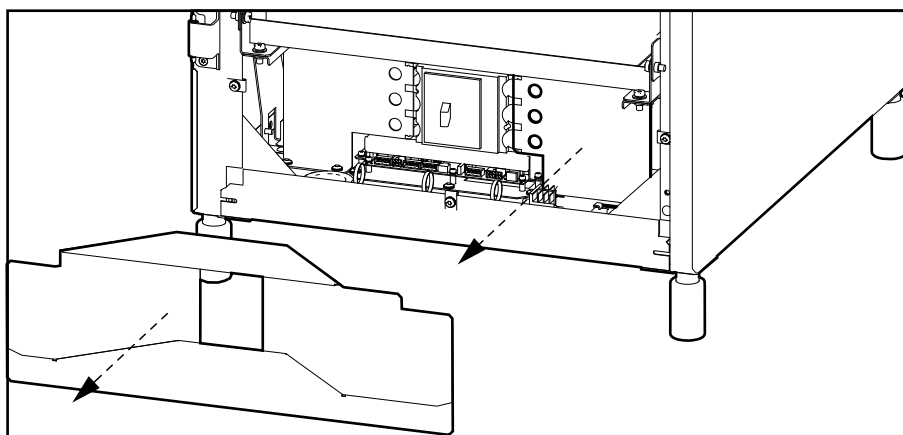
- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear protective glasses, gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- Determine if the battery 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.

NOTE: Make sure that the battery cables (+, N, -) and PE cables for classic battery cabinet 1 and classic battery cabinet 2 do not get mixed together. The battery cables and PE cables are connected in the UPS cabinet during UPS installation.

1. Lock out/tag out the battery breaker to the OFF position on the classic battery cabinets.
2. Remove the battery breaker cover on the classic battery cabinets.
3. Remove the right protection cover on the classic battery cabinets.

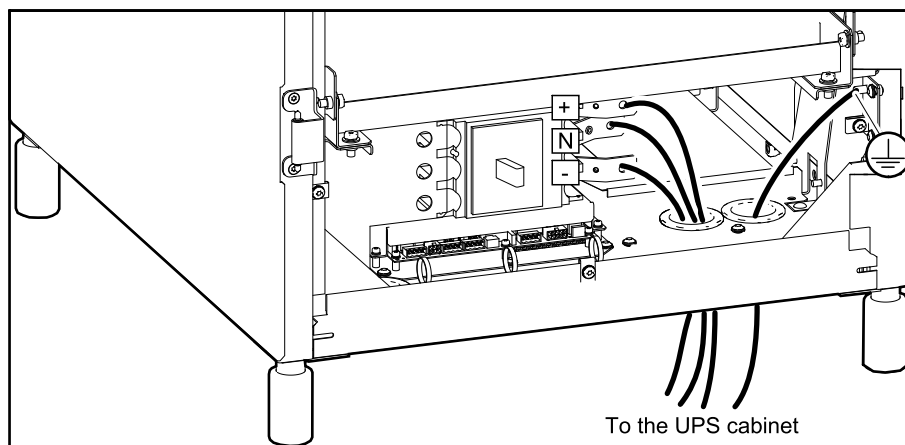
Front View of the Classic Battery Cabinet



4. Route the dedicated PE battery cable through the dedicated opening in the bottom of the classic battery cabinets and connect them to the PE terminal.

5. Route the dedicated battery cables through the dedicated opening in the bottom of the classic battery cabinets and connect them to the right side of the battery breaker (+, N, -).

Front View of the Classic Battery Cabinet



6. Reinstall the right protection cover and the battery breaker cover on the classic battery cabinets.

Connect the Batteries

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.

CAUTION

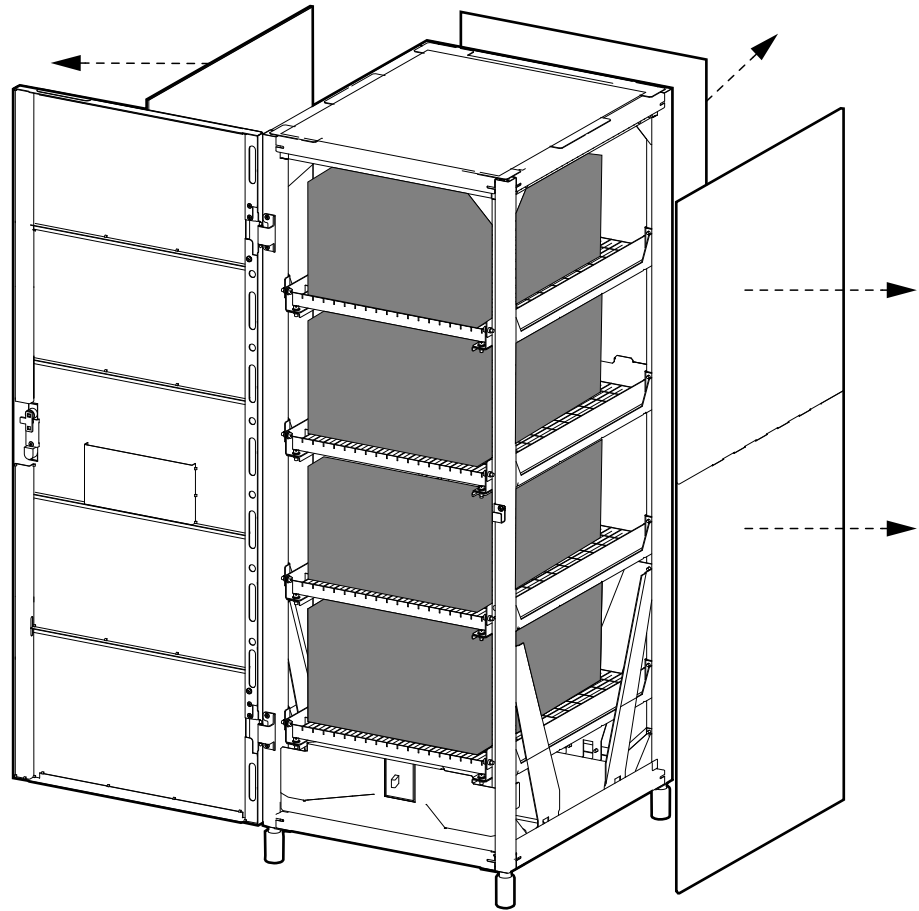
RISK OF EQUIPMENT DAMAGE

- 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, we recommend 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 injury or equipment damage.

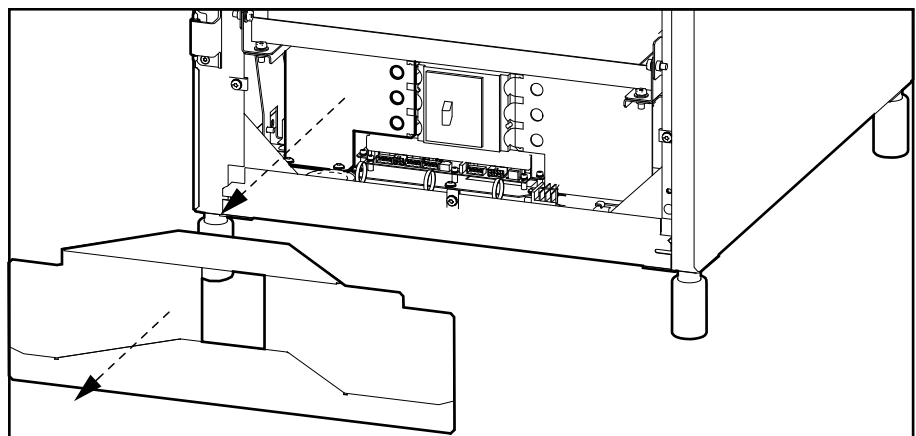
1. Remove the rear, right, and left side covers from the classic battery cabinet.

Front View of the Classic Battery Cabinet



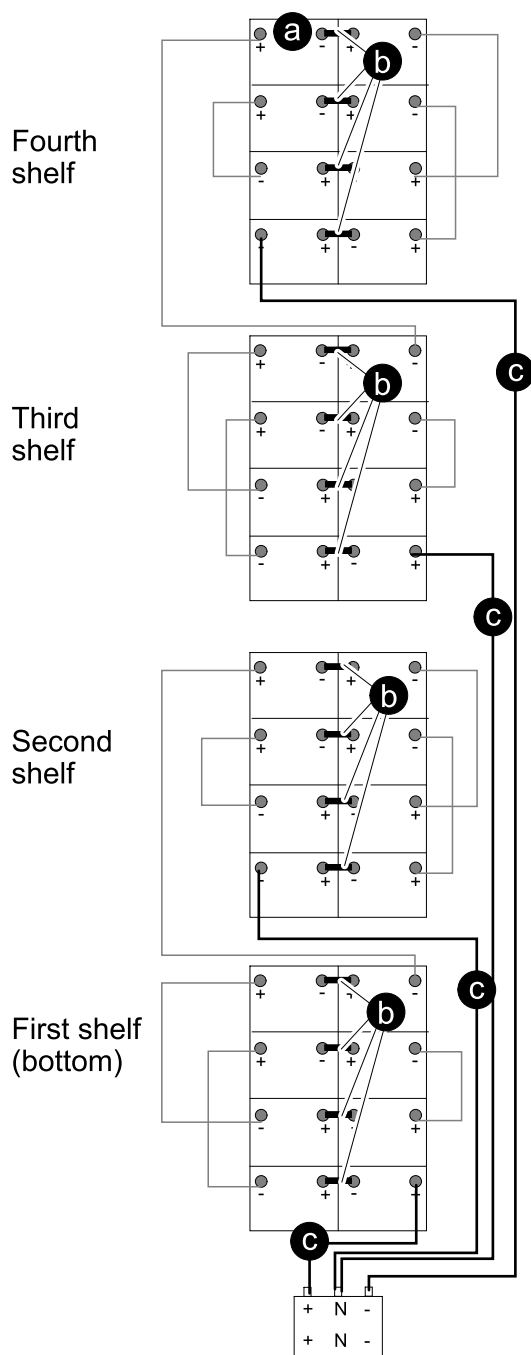
2. Remove all packaging from the batteries.
3. Lock out/tag out the battery breaker to the OFF position on the classic battery cabinet.
4. Remove the battery breaker cover on the classic battery cabinet.
5. Remove the left battery breaker protection cover on the classic battery cabinet.

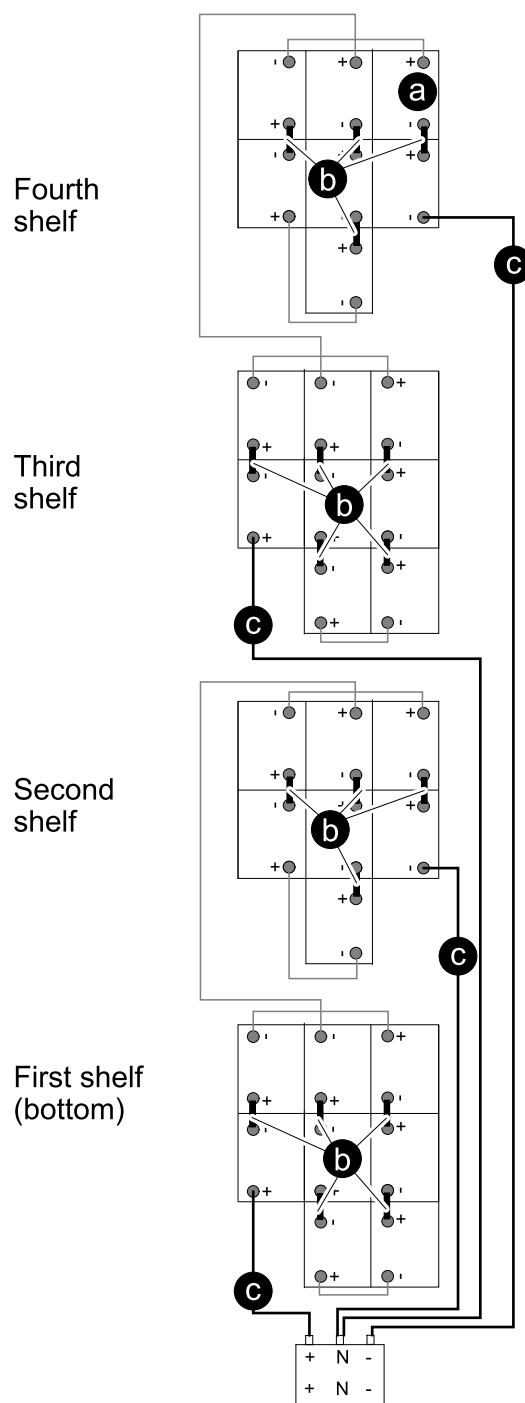
Front View of the Classic Battery Cabinet



6. Connect the battery cables from the shelves to the left side of the battery breaker according to the battery diagrams below or inside the front door of the classic battery cabinet.
 - a. Measure that the voltage between two terminals is less than 10 VDC before connecting cables.
 - b. Install four or five copper bars with screws on each shelf to connect the batteries as shown. Install protection covers over the copper bars.
 - c. Route the cables from the battery shelves to the battery breaker.

Battery Diagram for G3HTBAT5

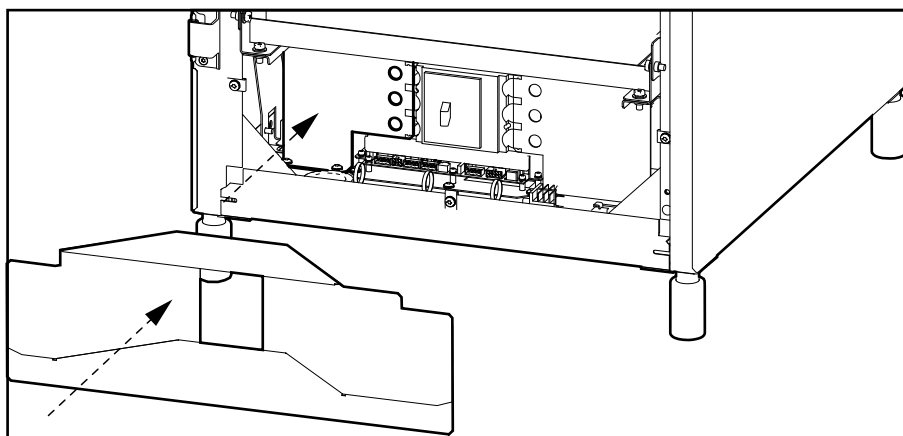


Battery Diagram for G3HTBAT4

7. Reinstall the left battery breaker protection cover on the classic battery cabinet.

8. Reinstall the battery breaker cover on the classic battery cabinet.

Front View of the Classic Battery Cabinet



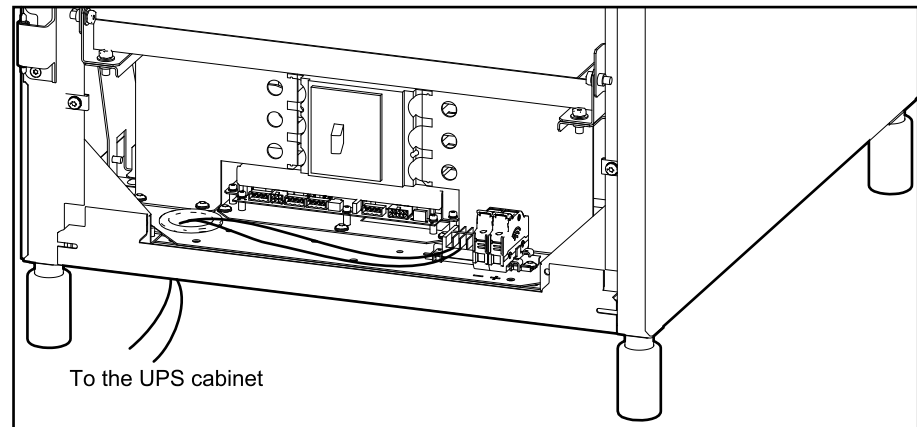
9. Reinstall the rear, right, and left side covers on the classic battery cabinet.

Route the Signal Cables from Classic Battery Cabinet 1

NOTE: The signal cables are connected in the UPS during UPS installation.

1. Remove the battery breaker cover on classic battery cabinet 1.
2. Route the preconnected external battery temperature signal cable and external battery breaker signal cable to the UPS through the dedicated opening in the bottom of classic battery cabinet 1. Note that the maximum distance between the UPS and the classic battery cabinet is 1 m due to the cable length.

Front View of Classic Battery Cabinet 1



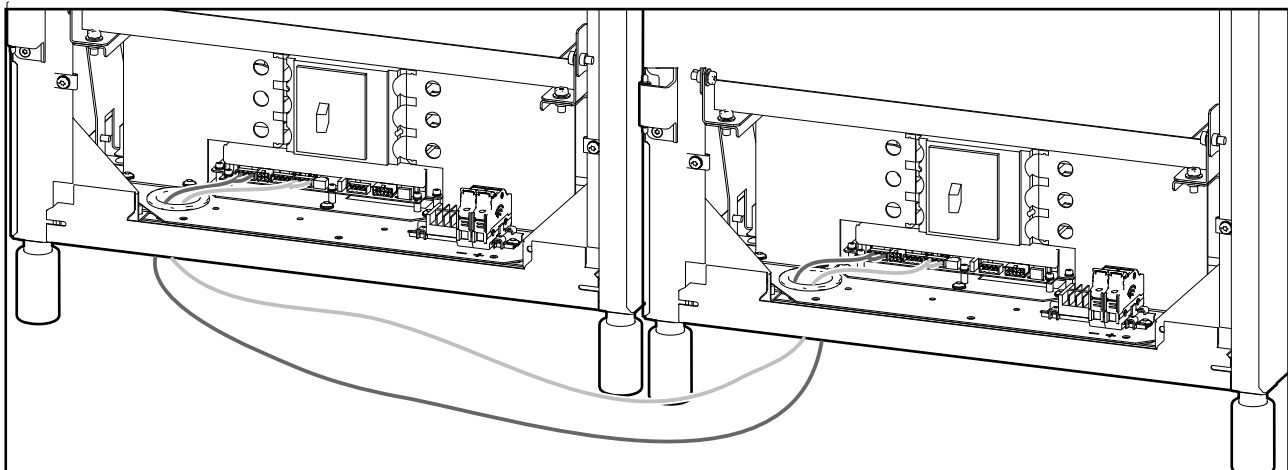
Connect the Battery Breaker Trip Cables Between the Classic Battery Cabinets

NOTE: A maximum of two classic battery cabinets can be connected.

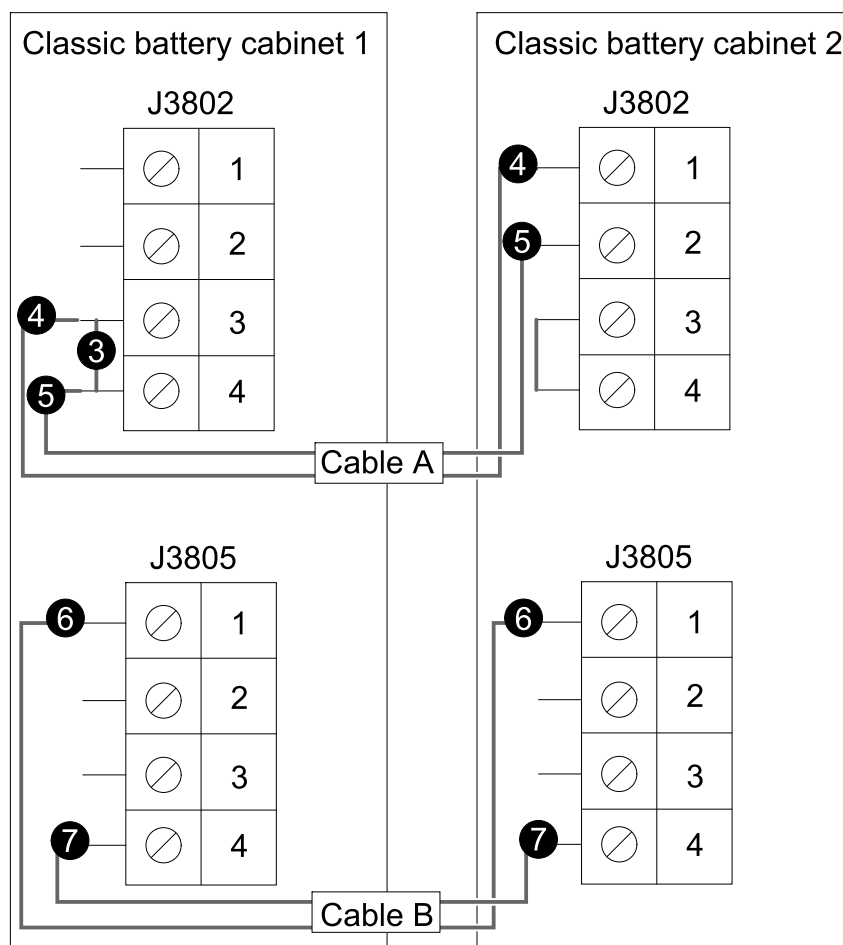
NOTE: The battery breaker trip cables are not supplied. Use AWG 22 cable sizes and maximum length 5 m and assemble the cable A and B as instructed below.

1. Remove the battery breaker covers on classic battery cabinet 1 and classic battery cabinet 2.
2. Route the battery breaker trip cable through the dedicated openings in classic battery cabinet 1 and classic battery cabinet 2.

Classic Battery Cabinet 1 and Classic Battery Cabinet 2



3. Remove the jumper cable between J3802 terminal 3 and terminal 4 on the trip board in classic battery cabinet 1
4. Cable A: Connect the battery breaker trip cable from J3802 terminal 3 on the trip board in classic battery cabinet 1 and to J3802 terminal 1 on the trip board in classic battery cabinet 2.
5. Cable A: Connect the battery breaker trip cable from J3802 terminal 4 on the trip board in classic battery cabinet 1 and to J3802 terminal 2 on the trip board in classic battery cabinet 2.
6. Cable B: Connect the battery breaker trip cable from J3805 terminal 1 on the trip board in classic battery cabinet 1 and to J3805 terminal 1 on the trip board in classic battery cabinet 2.
7. Cable B: Connect the battery breaker trip cable from J3805 terminal 4 on the trip board in classic battery cabinet 1 and to J3805 terminal 4 on the trip board in classic battery cabinet 2.



8. Reinstall the battery breaker covers on classic battery cabinet 1 and classic battery cabinet 2.

Finish the Installation

1. Check that the PE cables are connected correctly to the PE stud in the bottom of the classic battery cabinets.
2. Check that the power wiring is torqued as recommended by the battery vendor.
3. Check that the polarity of the battery cable connection (+, N, -) is correct and that the neutral is connected.
4. Reinstall all panels and covers.
5. Lockout/tag out all battery breakers on the classic battery cabinet(s) to the **OFF (opened)** position.
6. Remove the top carton plate from the classic battery cabinets.

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