

# Galaxy Lithium-ion

## Battery Cabinet SMPS AC/DC Converter

### Installation

LIBSEOPT002

Latest updates are available on the Schneider Electric website  
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# Important Safety Instructions — SAVE THESE INSTRUCTIONS

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



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



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

## DANGER

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

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

## WARNING

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

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

## CAUTION

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

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

## NOTICE

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

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

## Please Note

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

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

## Safety Precautions

### DANGER

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

Read all instructions in the installation manual before installing or working on this product.

**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 product until all construction work has been completed and the installation room has been cleaned.
- Build a clear, permanent, restricted access area around the system.

**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.

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

### DANGER

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

- Install the product in a temperature controlled indoor environment free of conductive contaminants and humidity.
- Install the product 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 product 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 product.

**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 product 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**

**CHEMICAL HAZARD**

This product can expose you to chemicals including Tetrabromobisphenol A, which is known to the State of California to cause cancer. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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

**NOTICE**

**RISK OF OVERHEATING**

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

**Failure to follow these instructions can result in 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 battery cabinet contains an internal energy source. Hazardous voltage can be present even when the UPS system is disconnected from the utility/mains supply. Before installing or servicing the UPS system, ensure that the units are OFF and that utility/mains and batteries are disconnected.
- A disconnection device (e.g. disconnection circuit breaker or switch) must be installed to enable isolation of the system from upstream power sources in accordance with local regulations. This disconnection device must be easily accessible and visible.
- The battery cabinet 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.**

## Specifications

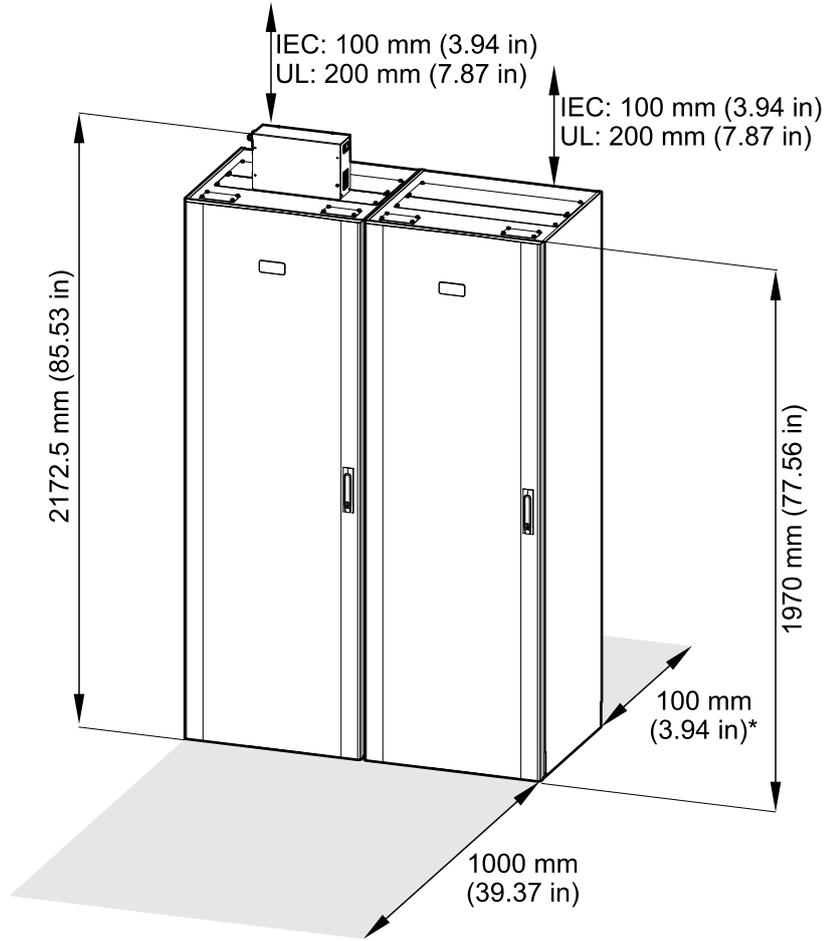
One SMPS AC/DC converter can supply up to 10 battery cabinets. For 11+ battery cabinets, at least two SMPS AC/DC converters are required. Split the number of battery cabinets as evenly as possible across the number of SMPS AC/DC converters. Example: For 12 battery cabinets with two SMPS AC/DC converters, connect six battery cabinets per SMPS AC/DC converter.

## Torque Specifications

Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft)
M6	5 Nm (3.69 lb-ft)

# 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.



\* For system(s) with seismic anchoring.

# Installation Procedure

## **DANGER**

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

The SMPS AC/DC converter must not be installed in an existing battery cabinet installation. The SMPS AC/DC converter must be installed before the DC power cables and the battery module busbars are installed/connected in the battery cabinet.

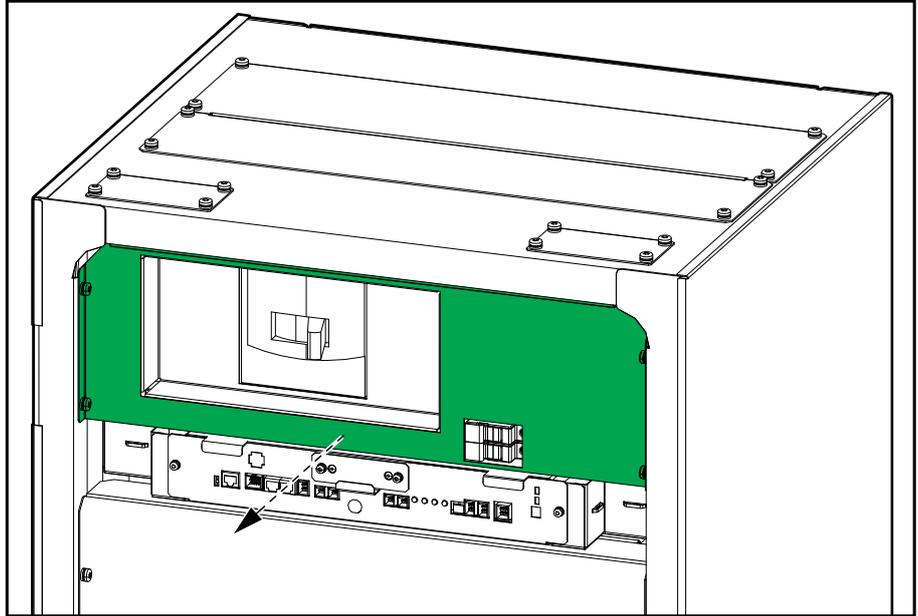
**Failure to follow these instructions will result in death or serious injury.**

1. Follow the battery cabinet installation manual to:
  - a. Prepare the battery cabinet for installation.
  - b. Install seismic anchoring (if applicable).
  - c. Position and interconnect the battery cabinet(s).
2. Install the SMPS AC/DC Converter on Battery Cabinet 1, page 12.
3. Prepare Battery Cabinet 2-10 for Installation, page 16.
4. Connect the Cables between the SMPS AC/DC Converter and the Battery Cabinets, page 19.
5. Follow the battery cabinet installation manual to complete the rest of the battery cabinet installation.
6. Final Installation, page 23.

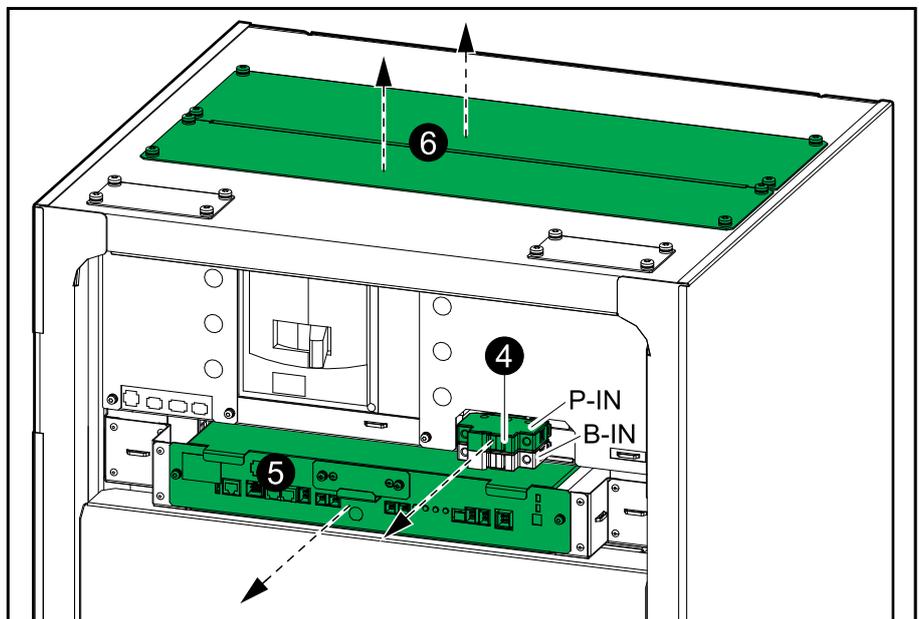
# Install the SMPS AC/DC Converter on Battery Cabinet 1

This procedure is only performed on battery cabinet 1.

1. Lockout/Tagout the battery breaker in the open (OFF) position.
2. Remove the indicated cover.



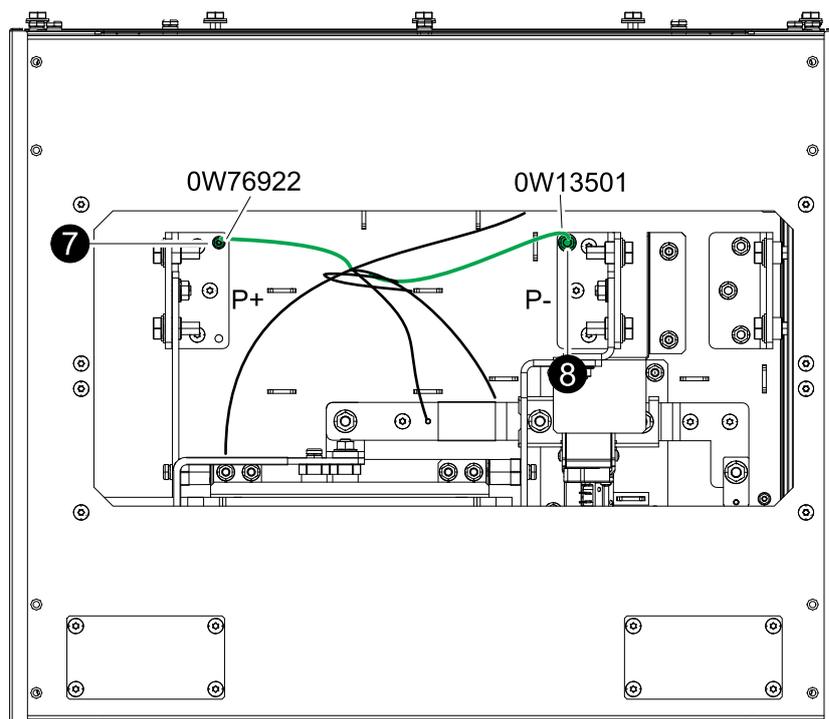
3. Open the two fuse holders (P-IN and B-IN).
4. Remove the P-IN fuse from the fuse holder.



5. Loosen the two screws from the SMPS/BMS box and pull out the SMPS/BMS box enough to disconnect it. Do not pull out the SMPS/BMS box completely.
6. Remove the two top plates.

7. Disconnect the internal cable 0W76922 from the P+ busbar. Reinstall the nut on the P+ busbar.

### Top View of the Battery Cabinet



8. Disconnect the internal cable 0W13501 from the P- busbar. Reinstall the nut on the P- busbar.

- Remove the cable lugs from the two internal cables 0W76922 and 0W13501 and terminate the cables into a connector (not provided). Fasten the connector to the one of the bridges with the provided cable ties. Recommended connector type to use is Phoenix 1757022 or a three-pin connector with similar specifications (see table below).

**⚡ ⚠ DANGER**

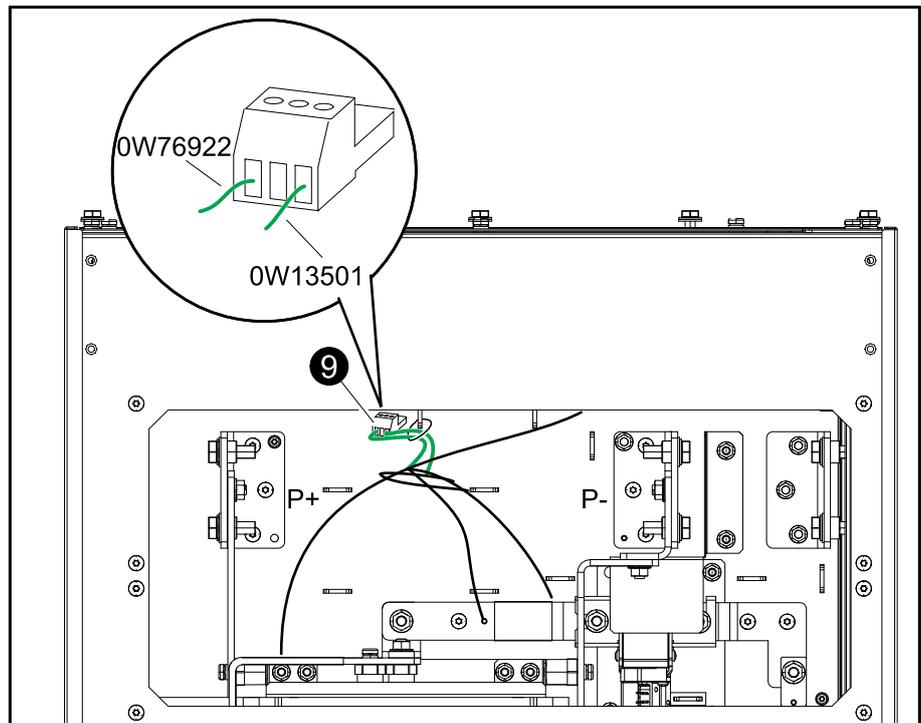
**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

Terminate the two internal cables 0W76922 and 0W13501 into a three-pin connector to reduce risk of short circuit. Keep the middle pin empty.

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

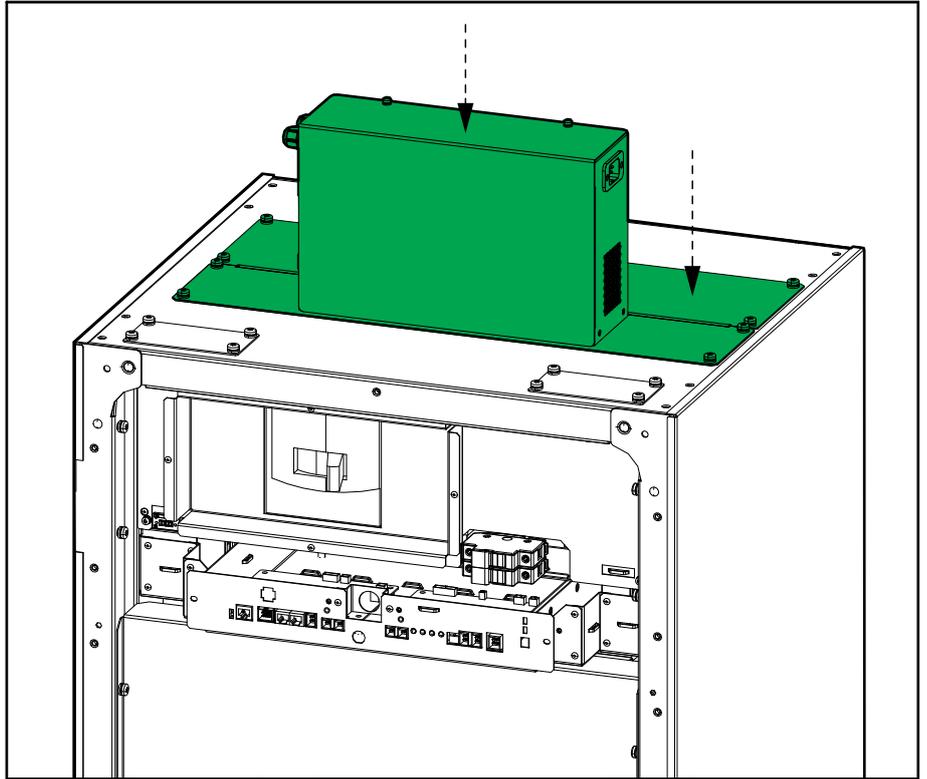
**Phoenix 1757022 Connector Specifications**

Rated current	12 A
Rated voltage(III/2)	320 V
Number of positions	3
Pitch	5.08 mm
Wire	20 AWG



- Reinstall the rear top plate.

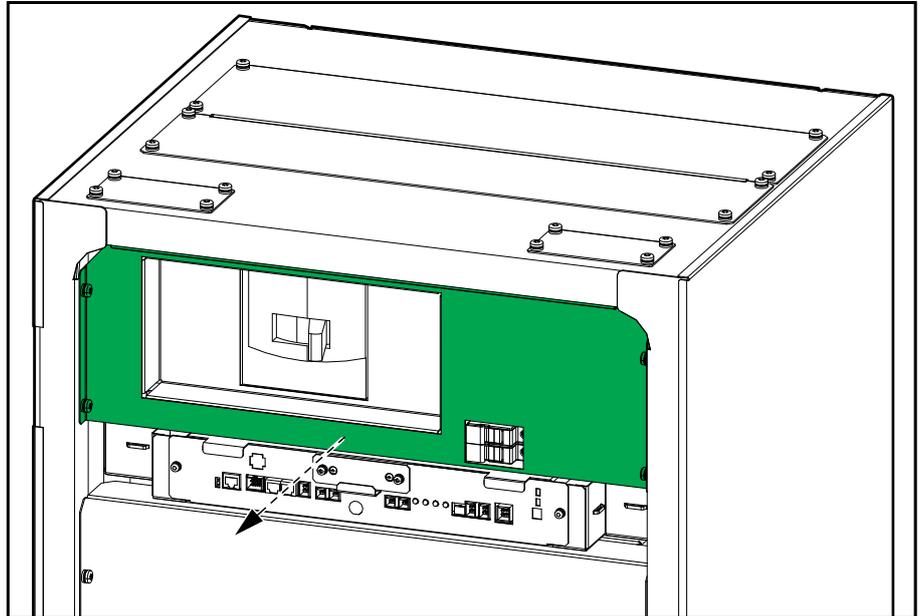
11. Install the AC/DC converter assembly on the top of battery cabinet 1.



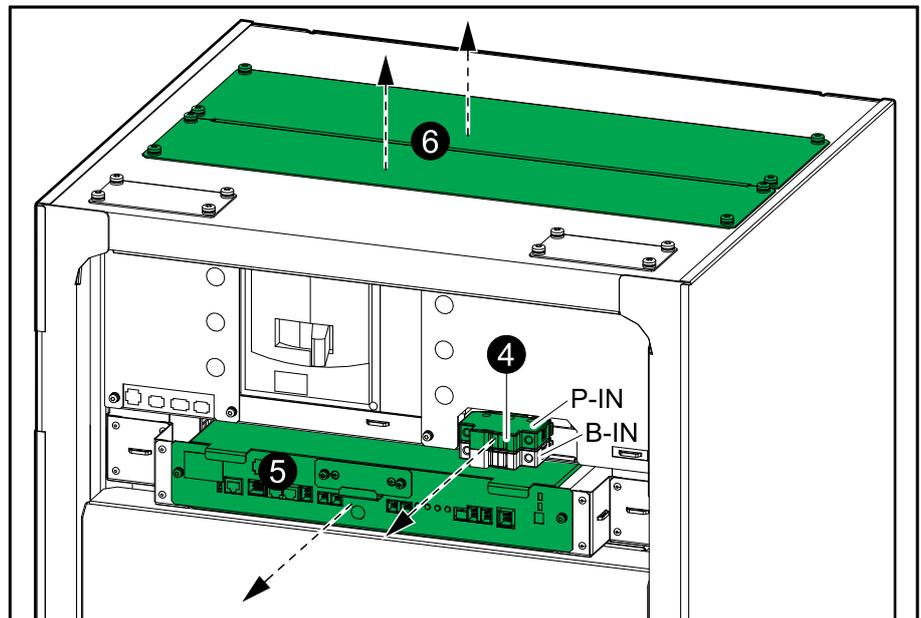
## Prepare Battery Cabinet 2-10 for Installation

This procedure is performed on battery cabinets 2-10.

1. Lockout/Tagout the battery breaker in the open (OFF) position.
2. Remove the indicated cover.



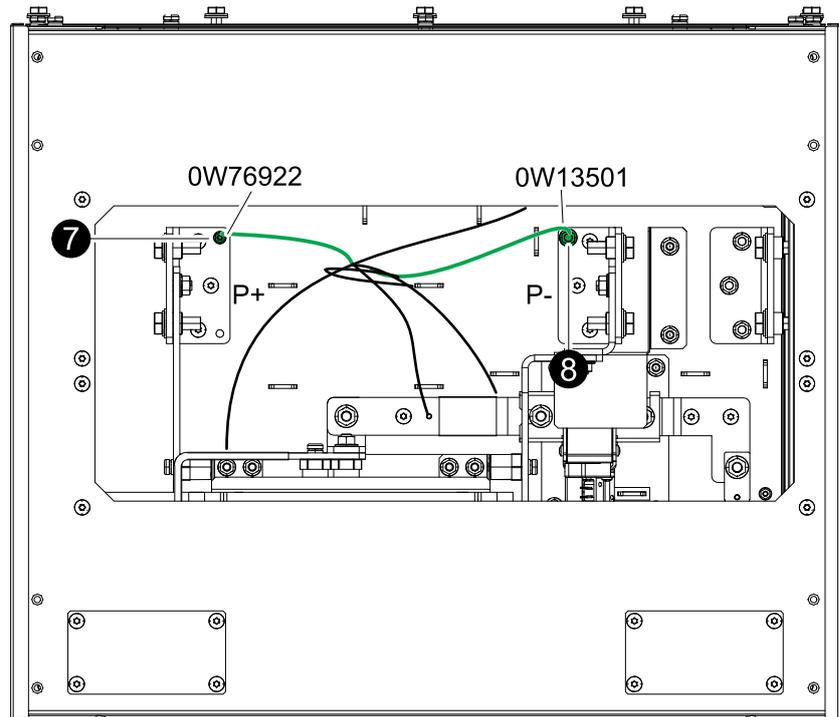
3. Open the two fuse holders (P-IN and B-IN).
4. Remove the P-IN fuse from the fuse holder.



5. Loosen the two screws from the SMPS/BMS box and pull out the SMPS/BMS box enough to disconnect it. Do not pull out the SMPS/BMS box completely.
6. Remove the two top plates.

7. Disconnect the internal cable 0W76922 from the P+ busbar. Reinstall the nut on the P+ busbar.

### Top View of the Battery Cabinet



8. Disconnect the internal cable 0W13501 from the P- busbar. Reinstall the nut on the P- busbar.

- Remove the cable lugs from the two internal cables 0W76922 and 0W13501 and terminate the cables into a connector (not provided). Fasten the connector to the one of the bridges with the provided cable ties. Recommended connector type to use is Phoenix 1757022 or a three-pin connector with similar specifications (see table below).

## ⚡ ⚠ DANGER

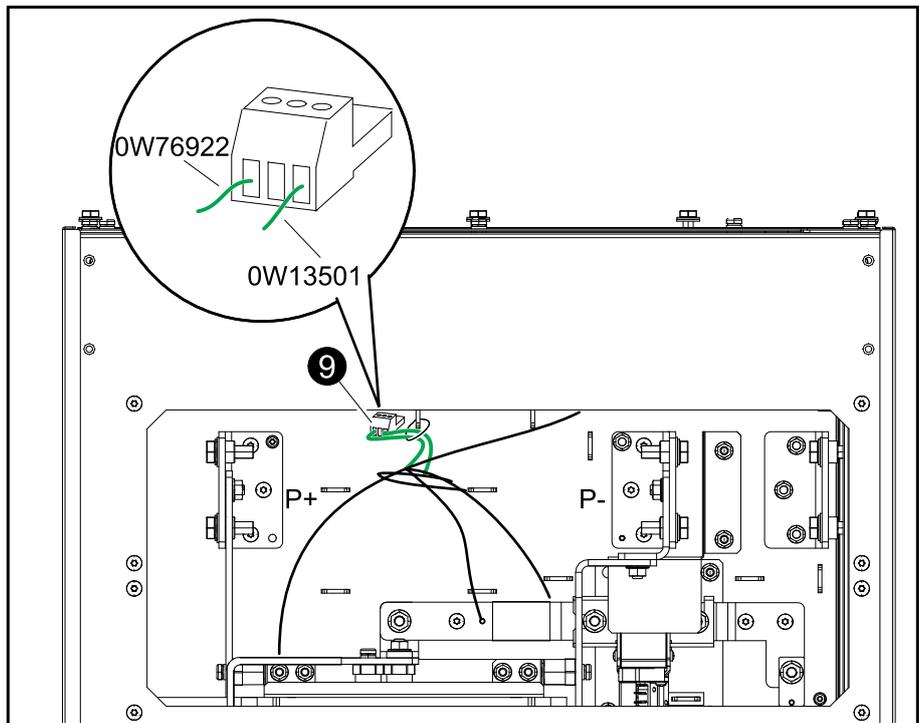
**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

Terminate the two internal cables 0W76922 and 0W13501 into a three-pin connector to reduce risk of short circuit. Keep the middle pin empty.

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

**Phoenix 1757022 Connector Specifications**

Rated current	12 A
Rated voltage(III/2)	320 V
Number of positions	3
Pitch	5.08 mm
Wire	20 AWG



- Reinstall the two top plates on the battery cabinet.

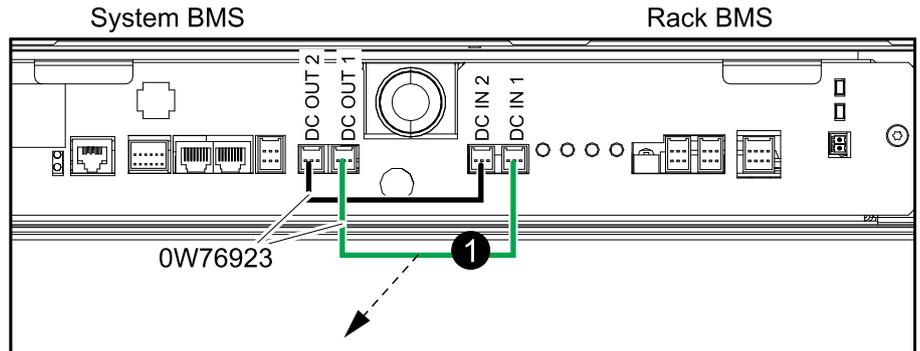
# Connect the Cables between the SMPS AC/DC Converter and the Battery Cabinets

**NOTE:** One SMPS AC/DC converter can supply up to 10 battery cabinets.

1. **On all the battery cabinets:** Disconnect cable 0W76923 from port DC OUT 1 and port DC IN 1 on the SMPS/BMS box. Remove the cable tie from the cable bundle and discard the loose cable 0W76923.

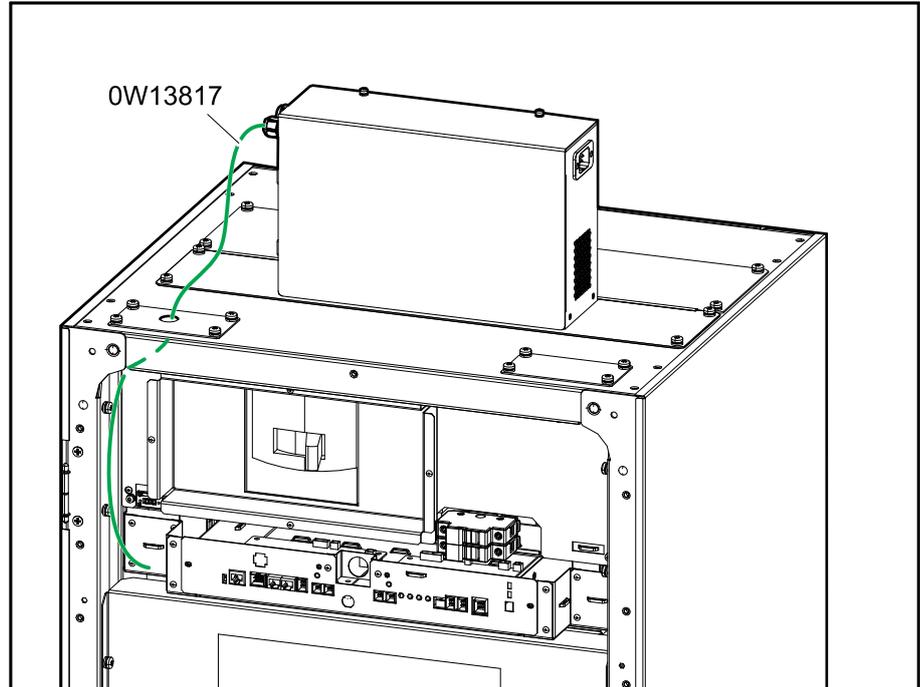
**NOTE:** Do not disconnect the other 0W76923 cable from port DC OUT 2 and port DC IN 2 on the SMPS/BMS box.

## The Battery Cabinet



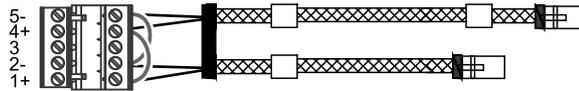
2. **In battery cabinet 1:** Route the preinstalled cable 0W13817 from the SMPS AC/DC converter into battery cabinet 1.

## Front View of Battery Cabinet 1

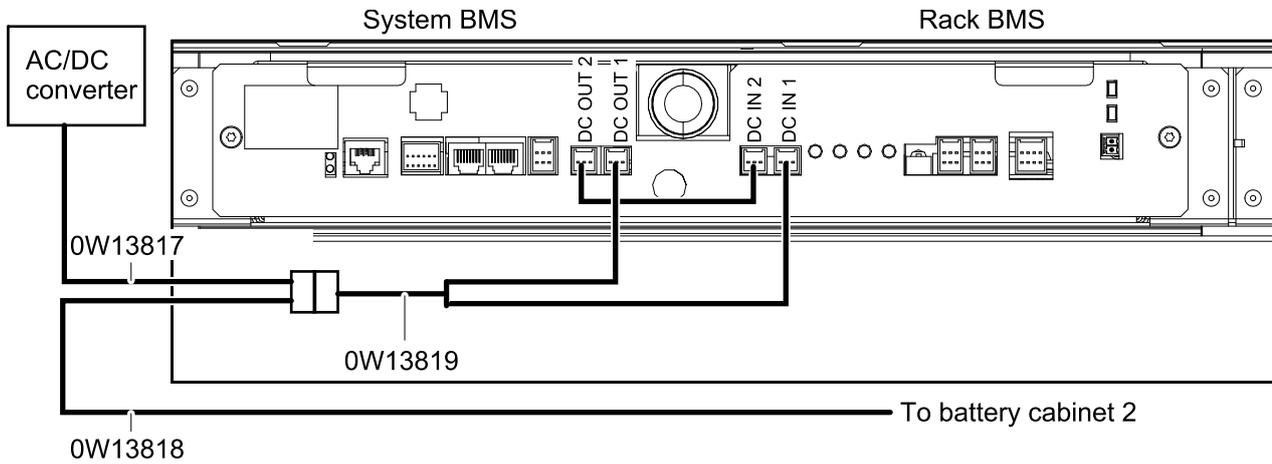


3. In battery cabinet 1: Connect cable 0W13817 to the connector on the provided cable 0W13819 pin 1 and pin 2.

**Cable 0W13819**

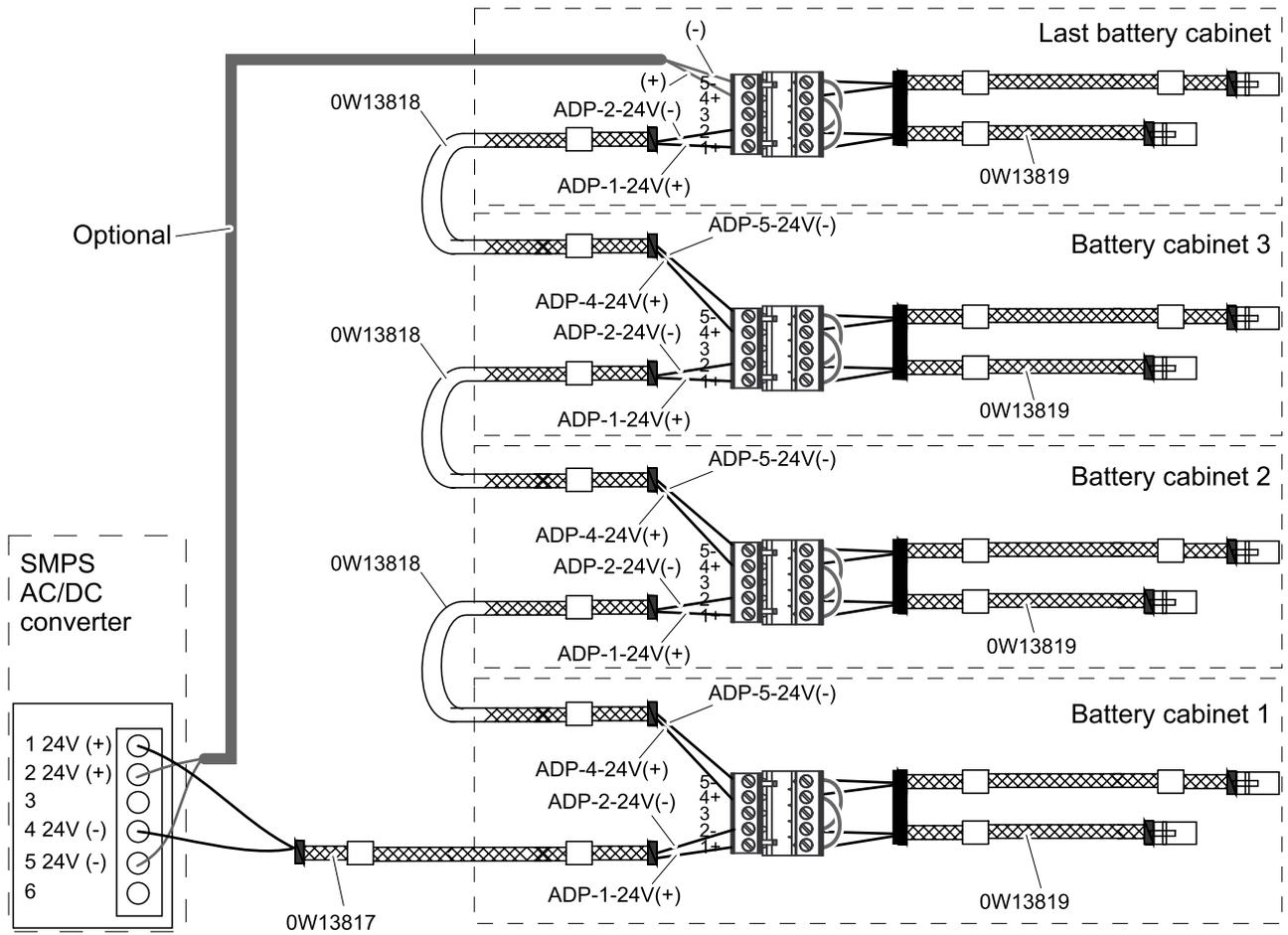


**Battery Cabinet 1**



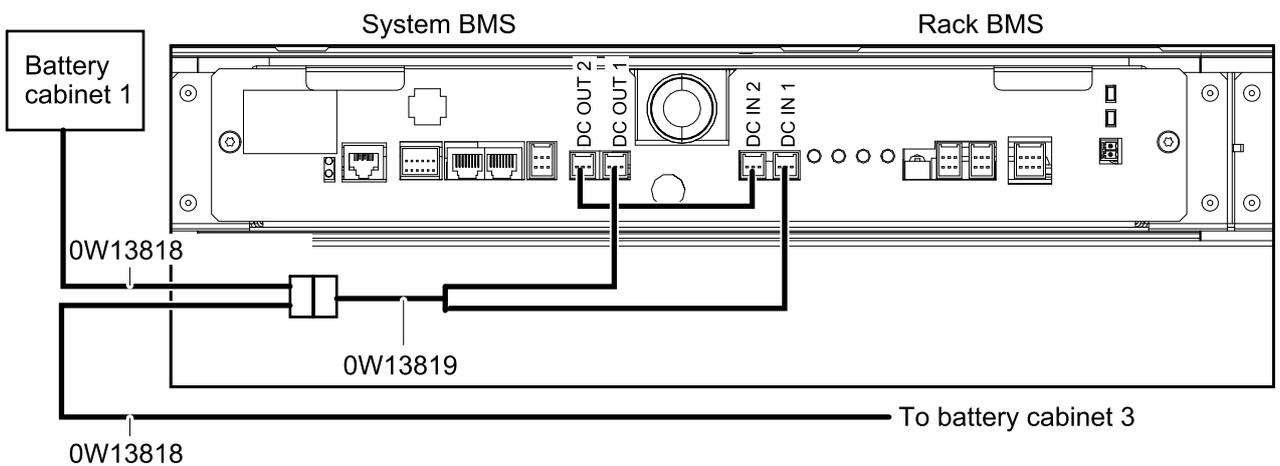
4. In battery cabinet 1: Connect the provided cable 0W13819 to port DC OUT 1 and port DC IN 1 in the SMPS/BMS box as shown above.

5. **For more than one battery cabinet:** In battery cabinet 1, connect the provided cable 0W13818 to the connector on the provided cable 0W13819 pin 4 and pin 5. Route cable 0W13818 through the side of battery cabinet 1 into battery cabinet 2.



6. **In battery cabinet 2:** Connect cable 0W13818 to the provided cable 0W13819 with the connector on pin 1 and pin 2.

**Battery Cabinet 2**



7. **In battery cabinet 2:** Connect the cable 0W13819 to port DC OUT 1 and port DC IN 1 in the SMPS/BMS box.

8. **For more battery cabinets:** Repeat steps 5,6,7 for battery cabinet 3-10 (up to 10 battery cabinets in the daisy chain).

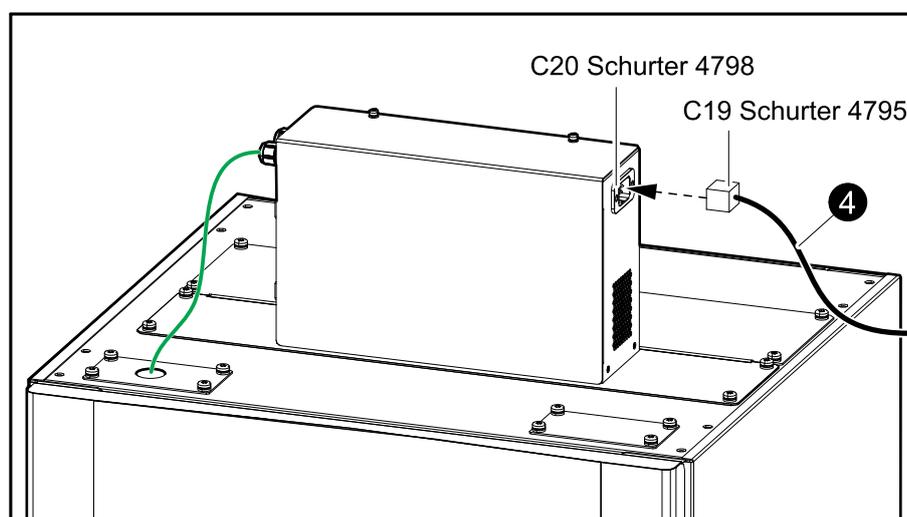
9. **Optional: In the last battery cabinet in the daisy chain:** Connect a cable (not provided) between the last battery cabinet and the SMPS AC/DC converter. The connection is optional, but recommended for improved connection stability.

## Final Installation

1. Push the SMPS/BMS box into position and reinstall with the screws on all the battery cabinets.
2. Close the fuse holders on all the battery cabinets.  
**NOTE:** The P-IN fuse must NOT be reinstalled.
3. Reinstall the covers on all the battery cabinets.
4. Connect the AC input cable (not provided) to the AC/DC converter(s). The AC input can be supplied from the UPS or from another AC source. Inlet on AC/DC converter is C20 Schurter 4798. Required mating connector on AC input cable is C19 Schurter 4795.

**NOTE:** A fuse is assembled inside the AC/DC converter for AC input protection. Fuse holder: 2P, for 10 x 38 mm fuse. Fuse rating: 10 A 500 VAC, 120 kA interrupting.

### Battery Cabinet 1



**Post-requisite:** Refer to the operation manual for start-up of the battery cabinet (s).

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