Galaxy Lithium-ion Battery Cabinet

With 10, 13, 16, or 17 Battery Modules

Installation and Operation

LIBSESMG10IEC, LIBSESMG13IEC, LIBSESMG16IEC, LIBSESMG17IEC
LIBSESMG10UL, LIBSESMG13UL, LIBSESMG16UL, LIBSESMG17UL

Latest updates are available on the Schneider Electric website
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www.se.com

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Table of Contents

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 62040-1, section 3.102).

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.

Electromagnetic Compatibility

NOTICE

RISK OF ELECTROMAGNETIC DISTURBANCE

This is a product category C2 UPS product. In a residential environment, this product may cause radio inference, in which case the user may be required to take additional measures.

Failure to follow these instructions can result in equipment damage.

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

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 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 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

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

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.

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.

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 battery module type.

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

NOTICE

RISK OF EQUIPMENT DAMAGE

- Lithium-ion batteries should not be stored beyond 15 months from the date of production. If they are stored for longer the calendar degradation will cause the batteries to be irreversible degraded beyond what is expected – a reduced runtime will be the consequence. Performance guarantee will be measured from the time of deployment or from production date +15 months, whichever comes first. For storage beyond 15 months, contact Schneider Electric.
- If the UPS system remains de-energized for a long period, Schneider Electric recommends to shut down the battery cabinet completely.

Failure to follow these instructions can result in equipment damage.

Specifications

Commercial reference	LIBSESMG10IEC/ LIBSESMG10UL	LIBSESMG13IEC/ LIBSESMG13UL	LIBSESMG16IEC/ LIBSESMG16UL	LIBSESMG17IEC/ LIBSESMG17UL
Nominal battery voltage (VDC) at 3.8 V per cell	304	395	486	517
Charge current default rate (CA rate)	0.7	0.7	0.7	0.7
Maximum continuous charge current rate (CA rate)	1.0	1.0	1.0	1.0
Float charge voltage (VDC) at 4.2 V per cell	336	436	537	571
End of discharge voltage (VDC) at 3.0 V per cell	240	312	384	408
Maximum continuous 100% depth of discharge power (kW)	108	140	173	184
Maximum partial depth of discharge power (kW)	135	176	218	231
Short circuit rating value (kA) - Isc, RMS (Isc, MAX)	2.9 (9.0)	2.9 (9.0)	2.9 (9.0)	2.9 (9.0)

NOTE: The battery temperature must return to ±3 °C / ±5 °F of the room temperature before a new discharge at maximum continuous discharge power. If not, the battery breaker may be tripped due to overtemperature protection.

NOTE: The working temperature for the busbars should be no more than 100 ℃.

Recommended Cable Sizes

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 185 mm² (IEC) / 350 kcmil (UL).

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

NOTE: Refer to the UPS installation manual for recommended cable sizes.

Recommended Cable Lugs

Copper – One Hole Cable Lug

Cable size	Bolt size	Cable lug type	Crimp tool	Die
3/0 AWG	M10x30	LCA3/0-12-X	CT-720	CD-720-2 Orange P50
4/0 AWG	M10x30	LCA4/0-12-X	CT-720	CD-720-3 Purple P54
300 kcmil	M10x30	LCA300-12-X	CT-720	CD-720-4 White P66
350 kcmil	M10x30	LCA350-12-X	CT-720	CD-720-5 Red P71

Copper – Two Hole Cable Lug

Cable size	Bolt size	Cable lug type	Crimp tool	Die
3/0 AWG	M10x30	LCC3/0-12D-X	CT-930	CD-920-3/0 Orange P50
4/0 AWG	M10x30	LCC4/0-12D-X	CT-930	CD-920-4/0 Purple P54
300 kcmil	M10x30	LCC300-12-X	CT-930	CD-920-300 White P66
350 kcmil	M10x30	LCC350-12-X	CT-930	CD-920-350 Red P71

Torque Specifications

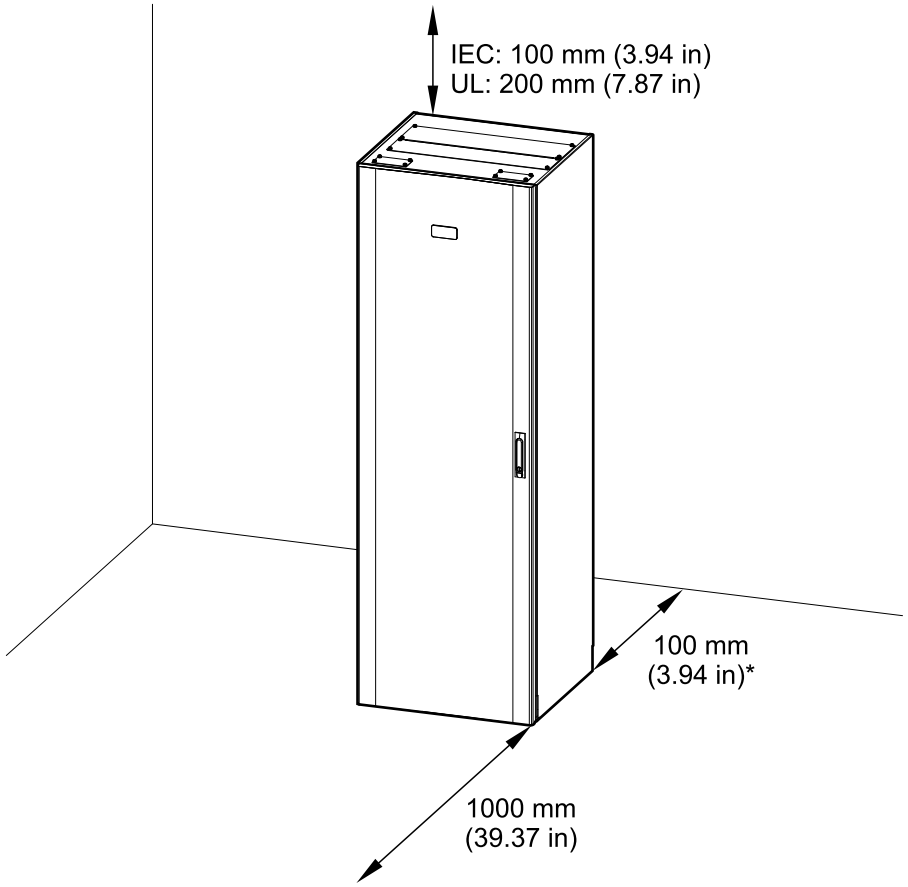
Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft)
M6	5 Nm (3.69 lb-ft)
M8	14 Nm (10.33 lb-ft)
M10	30 Nm (22.13 lb-ft)
M12	46 Nm (33.93 lb-ft)

Galaxy Lithium-ion Battery Cabinet Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
LIBSESMG10IEC	355 (782)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG10UL	355 (782)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG13IEC	415 (915)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG13UL	415 (915)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG16IEC	470 (1036)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG16UL	470 (1036)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG17IEC	490 (1080)	1970 (77.56)	650 (25.59)	587 (23.11)
LIBSESMG17UL	490 (1080)	1970 (77.56)	650 (25.59)	587 (23.11)

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 with seismic anchoring.

Environment

	Operating	Storage
Temperature	Recommended operating temperature: 18 °C to 28 °C (64 °F to 82 °F)	Battery modules with the original packing materials: 5 ° C to 28 °C (41 °F to 82 °F) Battery cabinet with original packing materials: 5 °C to 40 °C (41 °F to 104 ° F) (non-freezing) Temperature uniformity should be within 5 °C (41 °F) during storage period.
Relative humidity	0-80% Non-condensing	Battery modules with the original packing materials: 0-90% Non-condensing Battery cabinet with the original packing materials: 0-80% Non-condensing
Elevation	0-2000 m(0-6562 ft)	
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

Overview of Accessory Kits

Accessory Kit 0M-95318: Busbar Kit

NOTE: Save this accessory kit for the field service representative. The busbars will be installed by Schneider Electric during the start-up service.

Accessory Kit 0M-95319: Cover Kit

NOTE: Save this accessory kit for the field service representative. The covers will be installed by Schneider Electric during the start-up service.

Accessory Kit 0M-95320: Cable Kit

Part Number	Description	Quantity	Used in
0W76926	Signal cable from battery module to battery module – standard	15	Note: Save these signal cables for the field service representative. These signal cables will be installed by Schneider Electric during the start-up service.
0W76936	Signal cable from battery module to battery module – long	1	
0W76933	Signal cable from battery module to RBMS	1	
0W76928	Signal cable from RBMS CAN 2 to RBMS CAN 1 in next battery cabinet	1	Route the Signal Cables to the Switchgear, Rack BMS, and System BMS Ports, page 33
0W76929	Signal cable from MCCB AUX 1 to UPS	1	
0W76934	Signal cable from MCCB AUX 2 to MCCB AUX 1 in next battery cabinet	1	
0W13444	Signal cable from SGB I/O 1 to the UPS	1	
0W13442	Signal cable from SGB I/O 2 to the UPS	1	
0W76972	Signal cable from SGB I/O 1 to SGB I/O 1 between the battery cabinets	1	

Accessory Kit 0M-95331: Seismic Anchoring and Fuse Kit

Part Number	Description	Quantity	Used in
870-50102	Anchor parts	4	Install the Rear Seismic Anchoring, page 21
870-51172	Interconnection plate between seismic brackets	1	
803-0684	M6 x 12 torx screw with washer	4	
803-0686	M6 x 16 torx with washer	18	Install the Rear Seismic Anchoring, page 21 and Position and Interconnect the Battery Cabinets, page 23.
TME00409	500 A fast acting fuse	1	**Note:** Save for the field service representative. The fuses will be installed by Schneider Electric during the start-up service.
TME24508	M12 x 35 stud	2	
HUA26611	M12 hexagonal nut with spring washer	2	

Part Number	Description	Quantity	Used in
HUA41574	3 A rated fuse	2	

Optional Kit

Part Number	Description	Quantity	Used in
LIBSEOPT002	Galaxy LIB cabinet SMPS AC/DC converter	1[1]	**Note:** Scan the QR code on the SMPS AC/DC converter to find the installation manual.
LIBSEFUSEKIT	Galaxy 10-module LIB cabinet fuse kit	1	**Note:** Save for the field service representative. The busbars will be installed by Schneider Electric during the start-up service.
LIBSEDATABMSIEC[2]	Galaxy LIB cabinet data log kit IEC version	1	**Note:** Save for the field service representative.
LIBSEDATABMSUL[2]	Galaxy LIB cabinet data log kit UL version	1	**Note:** Save for the field service representative.
LIBSEOPT001	Galaxy LIB 25 m communication cable kit	1	

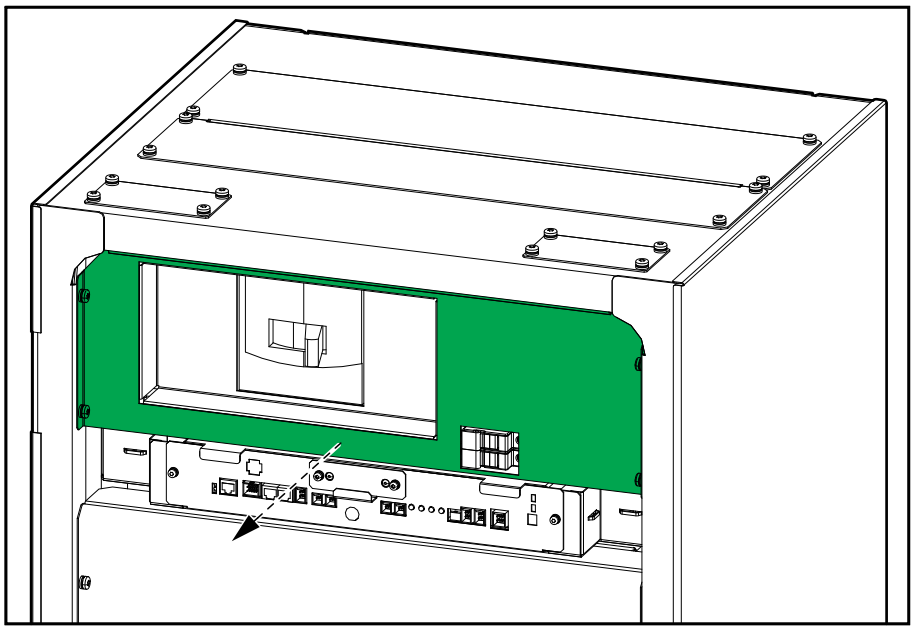
1. One AC/DC converter box can supply up to 10 battery cabinets. For 11+ battery cabinets, at least two AC/DC converter boxes are required.
2. Install one data log kit for each battery system.

Installation Procedure

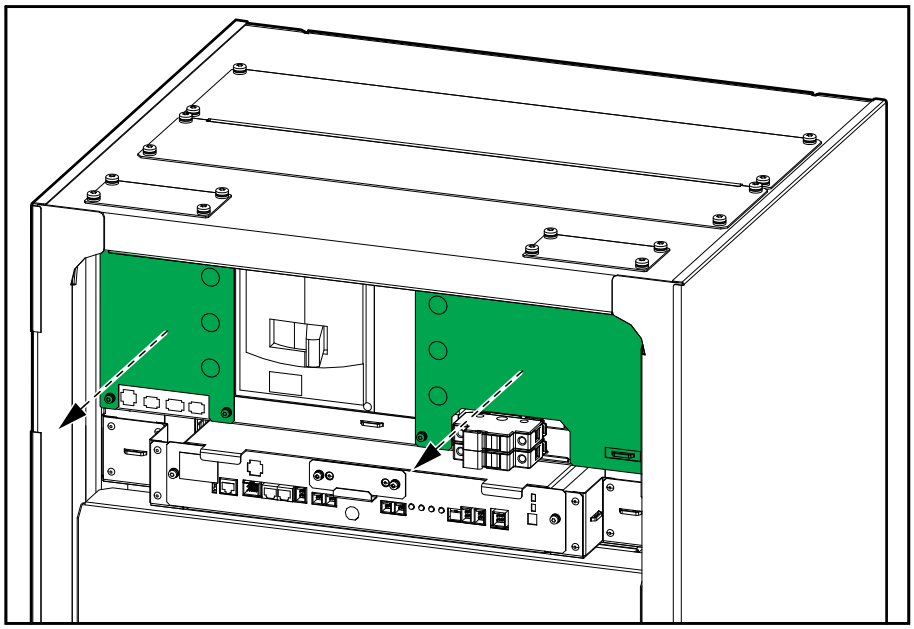
1. Prepare for Installation, page 19.
2. Install the Rear Seismic Anchoring, page 21.
3. Position and Interconnect the Battery Cabinets, page 23.
4. Install the Front Seismic Anchoring, page 25.
5. Install the Battery Modules in the Battery Cabinet, page 26.
6. Connect the Power Cables, page 28.
7. Route the Signal Cables to the Switchgear, Rack BMS, and System BMS Ports, page 33.

Prepare for Installation

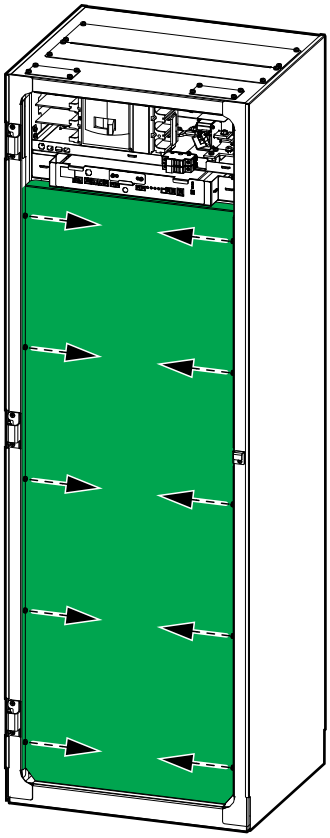
1. Remove the indicated cover.



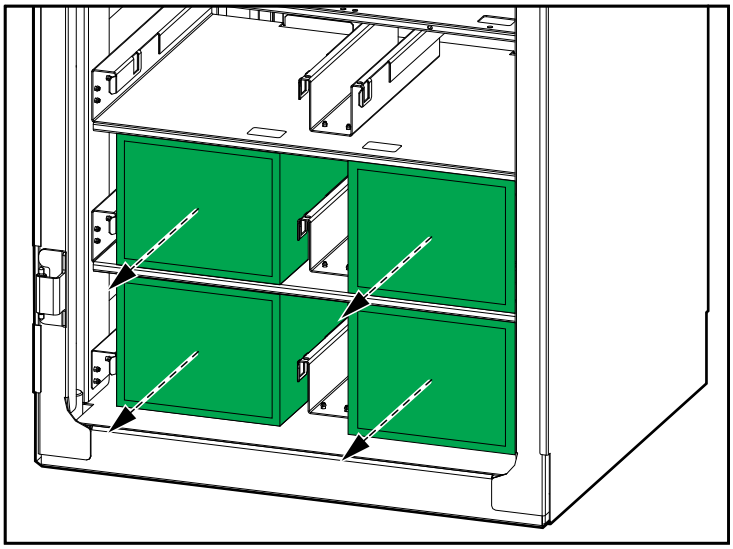
2. Remove the two transparent covers.



3. Remove the plate in front of the battery shelves.



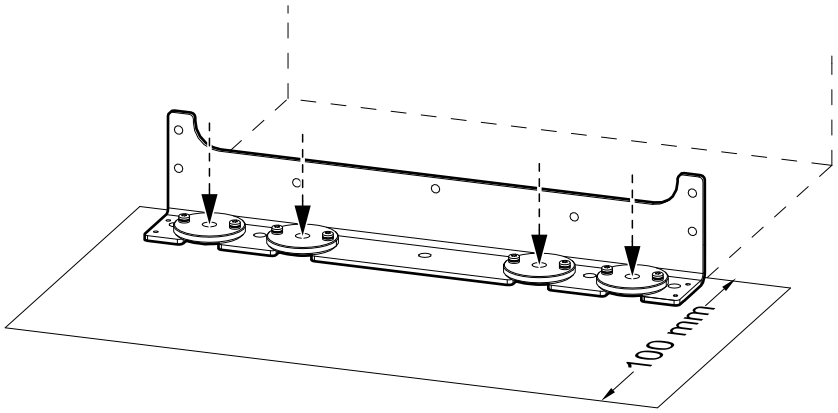
4. Remove the four boxes with accessory kits from the bottom of the cabinet. Refer to Overview of Accessory Kits, page 16 for more information on the accessory kits.



Install the Rear Seismic Anchoring

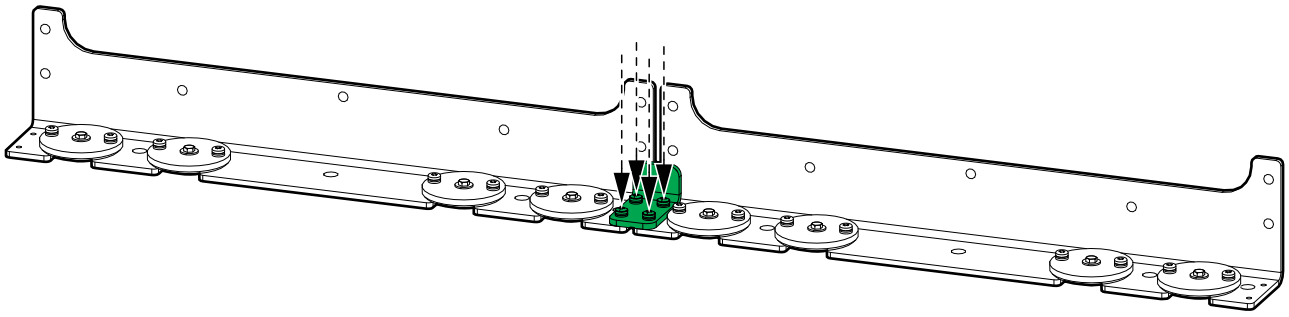
1. Mount the rear seismic assembly (4 x 870-50102 and M6 x 16 torx screws from accessory kit 0M-95331 and the rear shipping bracket) to the floor. Use appropriate hardware for the floor type – the hole diameter in the rear seismic bracket is ø14 mm. The minimum requirement is M12 strength grade 8.8 hardware.

Rear View



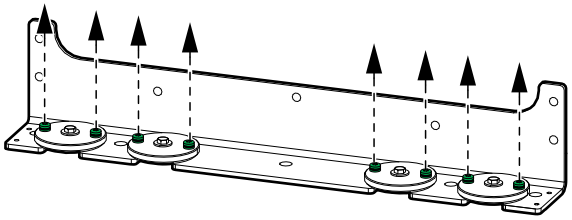
2. In systems with more battery cabinets, interconnect the seismic assemblies with the interconnection plate 870-51172 from the accessory kit 0M-95331.

Rear View



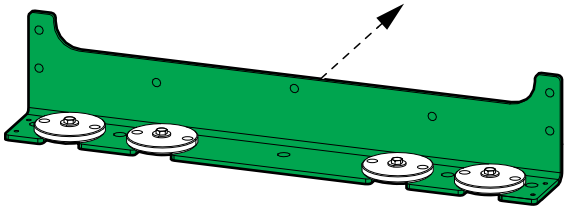
3. Remove the indicated screws.

Rear View



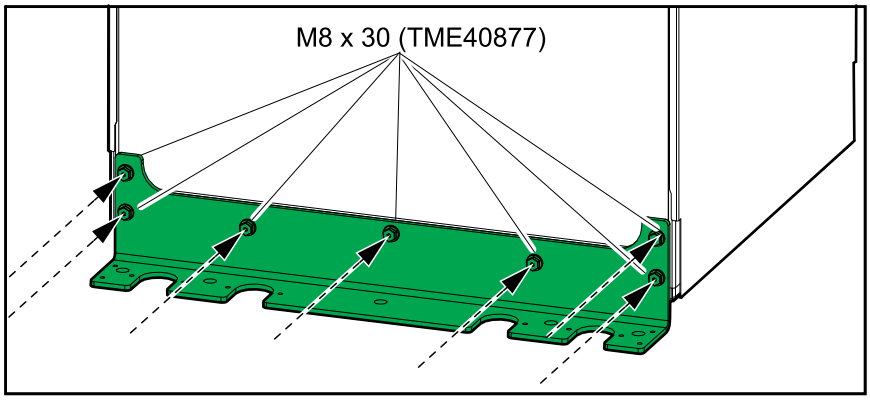
4. Remove the rear seismic bracket.

Rear View



5. Install the rear seismic bracket on the battery cabinet(s).

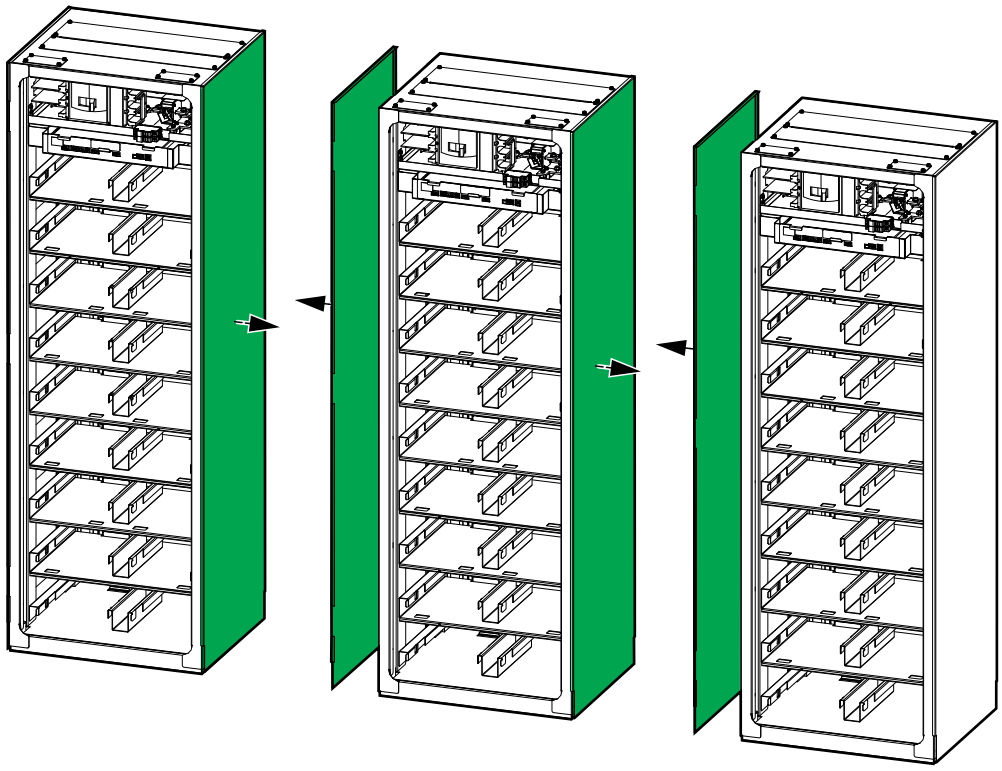
Rear View



Position and Interconnect the Battery Cabinets

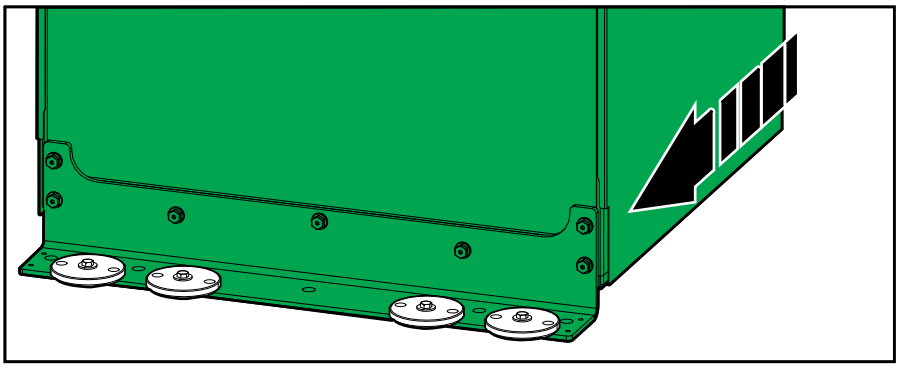
NOTE: This procedure describes how to position and interconnect several battery cabinets. If your system only has one battery cabinet, you only need to follow step 2 and step 3.

1. Remove the side panels that are adjacent to the other battery cabinets.

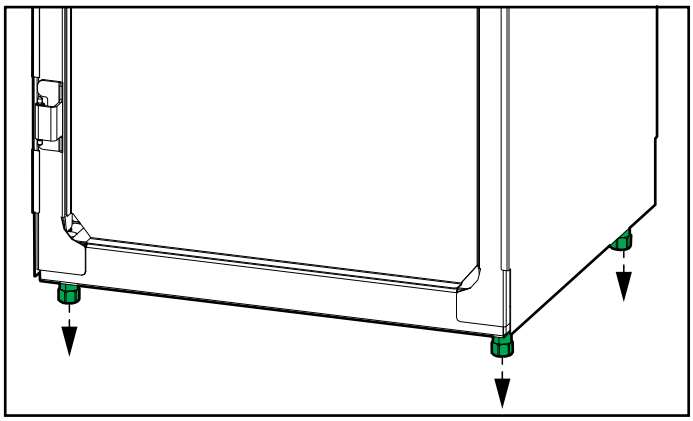


2. Push the right-most battery cabinet into position. For seismic anchoring, ensure that the rear seismic bracket connects to the rear anchors.

Rear View



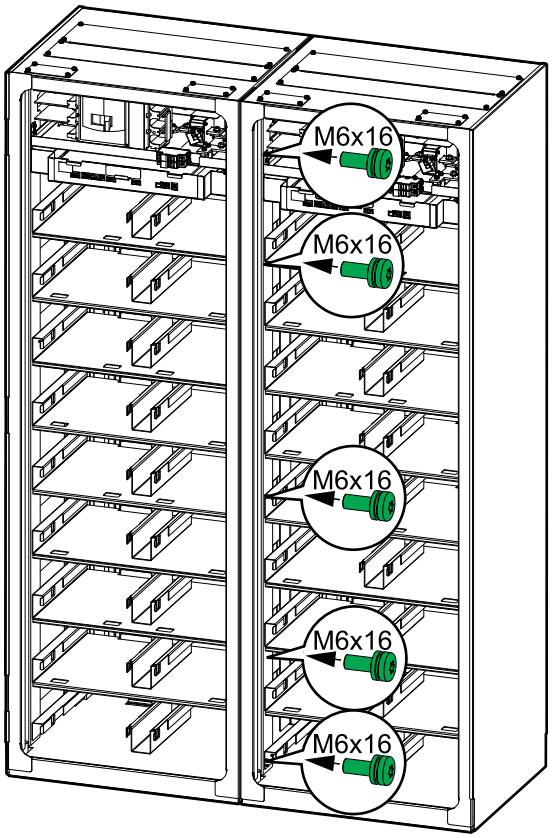
3. Lower the levelling feet until they connect with the floor - use a bubble-leveler to ensure that the cabinet is level.

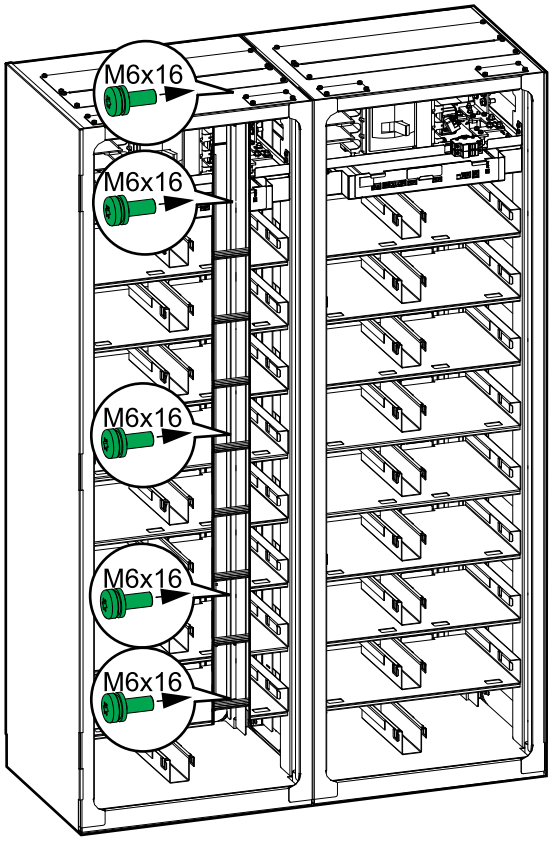


4. Push the second right-most battery cabinet into position, align with the seismic anchoring (if any), and level the battery cabinet as described in step 2 and step 3.

5. Install the ten interconnection screws (five in the front and five in the rear) between the two battery cabinets.

   NOTE: To reach the five interconnection screws in the rear of the left-most battery cabinet, the left side panel can be removed. Reinstall the left side panel on the left-most battery cabinet after interconnection.

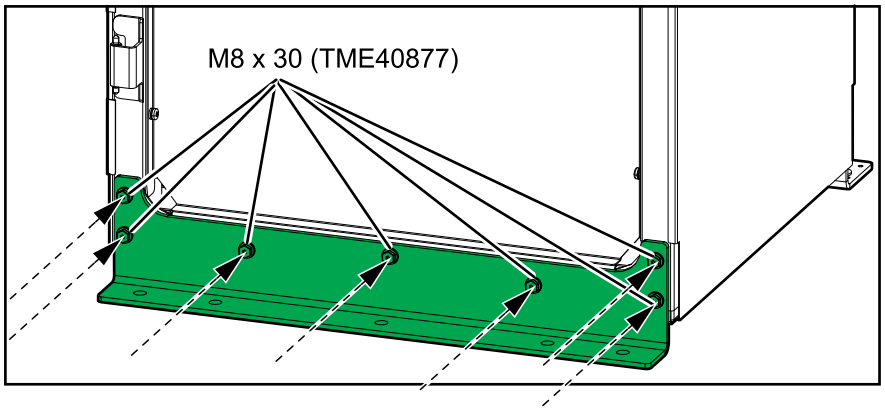




6. Push the third battery cabinet into position, align with the seismic anchoring (if any), level the battery cabinet, and interconnect with the other battery cabinets as described in step 2, step 3, and step 5. Continue until all the battery cabinets are in place, levelled, and interconnected.

Install the Front Seismic Anchoring

1. Install the front seismic bracket (front shipping bracket) on the battery cabinet.

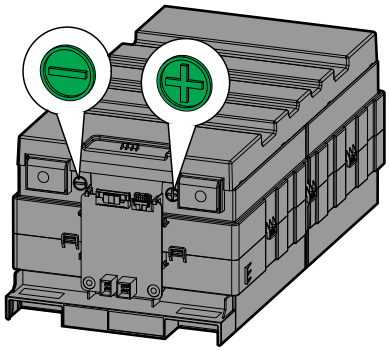


2. Anchor the front seismic bracket to the floor using appropriate hardware for the floor type – the hole diameter in the front seismic bracket is ø14 mm. The minimum requirement is M12 strength grade 8.8 hardware.

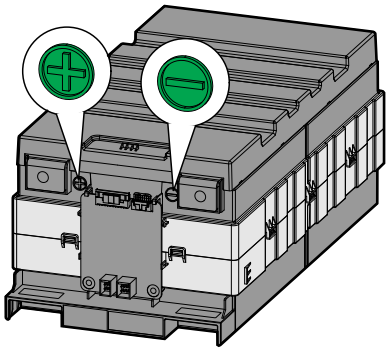
   NOTE: Floor anchoring bolts are not supplied.

Install the Battery Modules in the Battery Cabinet

Type A Battery Module



Type B Battery Module



⚠⚠WARNING

HAZARD OF INJURY AND ELECTRIC SHOCK

- Be careful when installing and removing the battery modules (>17 kg).

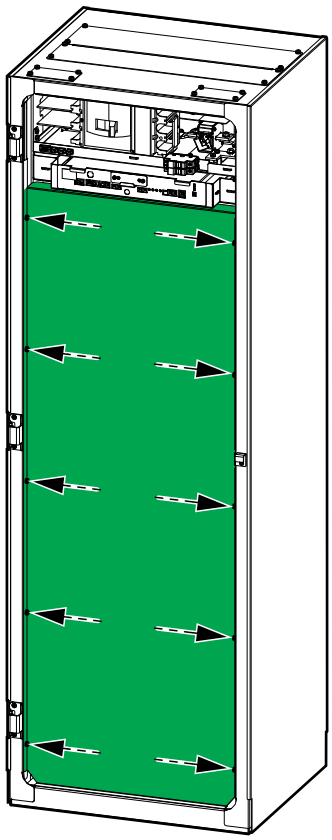
Failure to follow these instructions can result in death, serious injury, or equipment damage.

1. Install the battery modules on the shelves from top to bottom.

   NOTE: Pay special attention to the location of type A and type B battery modules.

Battery Configurations for Battery Cabinets with 17, 16, 13, and 10 Battery Modules

2. Reinstall the plate in front of the battery shelves.



Connect the Power Cables

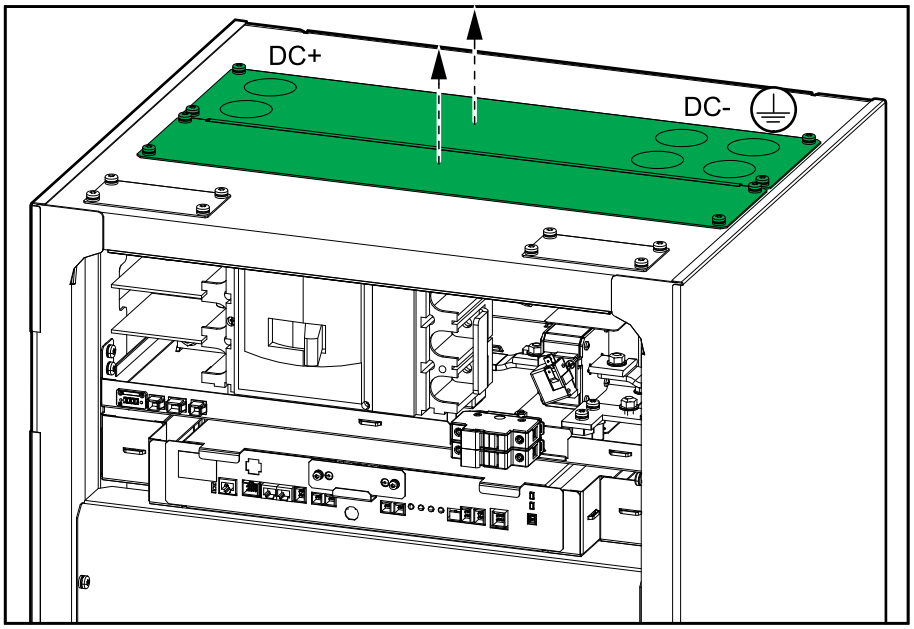
⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or punch holes with the gland plates installed and do not drill or punch holes in close proximity to the battery cabinet.

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

1. Remove the gland plates.



2. Drill or punch holes for cables/conduits in the rear gland plate according to the label on the gland plate.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

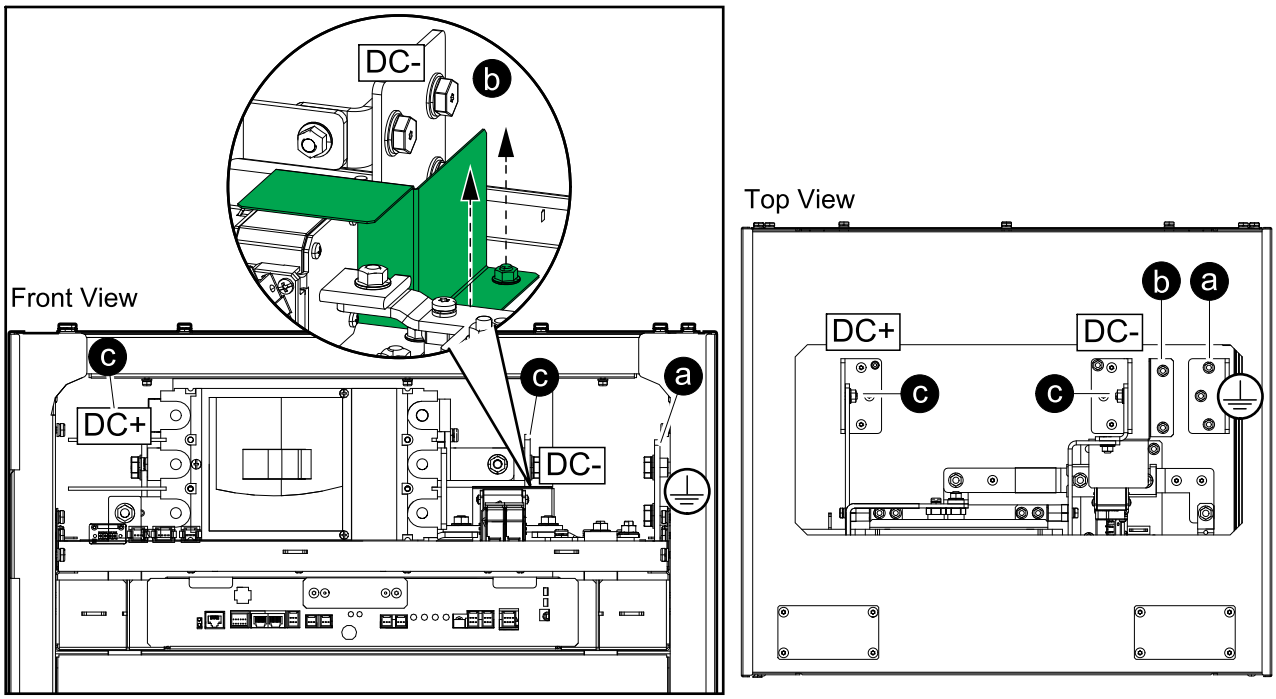
Failure to follow these instructions will result in death or serious injury.

3. Install conduits (if applicable) and reinstall the gland plates.

4. Route the power cables through the gland plate and connect to the terminals:
   a. Connect the PE cable to the PE terminal/Connect the EGC cable to the grounding terminal.
   b. For installations with two hole cable lugs only, temporarily remove the protection cover.

      NOTE: The protection cover must be reinstalled when the DC- cable has been connected.

   c. Connect the DC+ and DC- cables to the DC+ and DC- terminals.

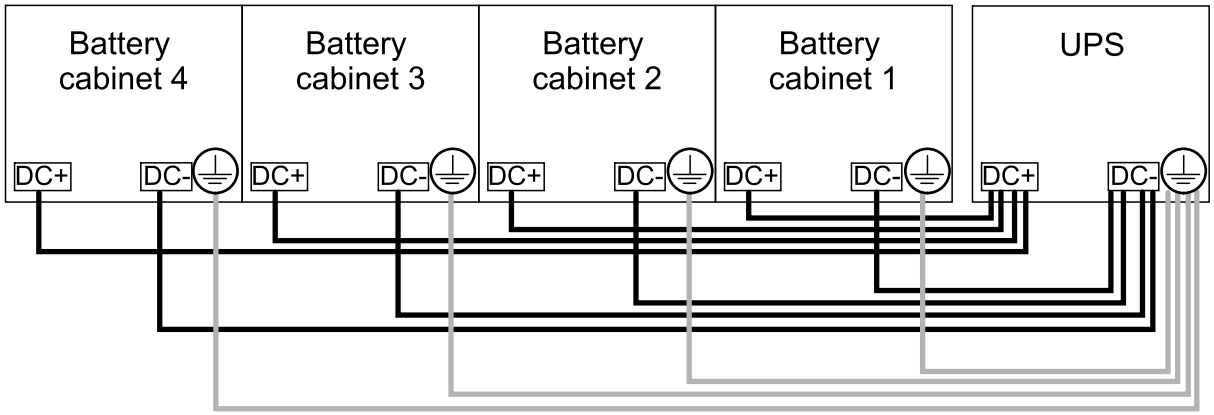


5. Connect the power cables in the UPS. If more battery cabinets are part of the solution, connect all battery cabinets to the UPS according to the diagram below.

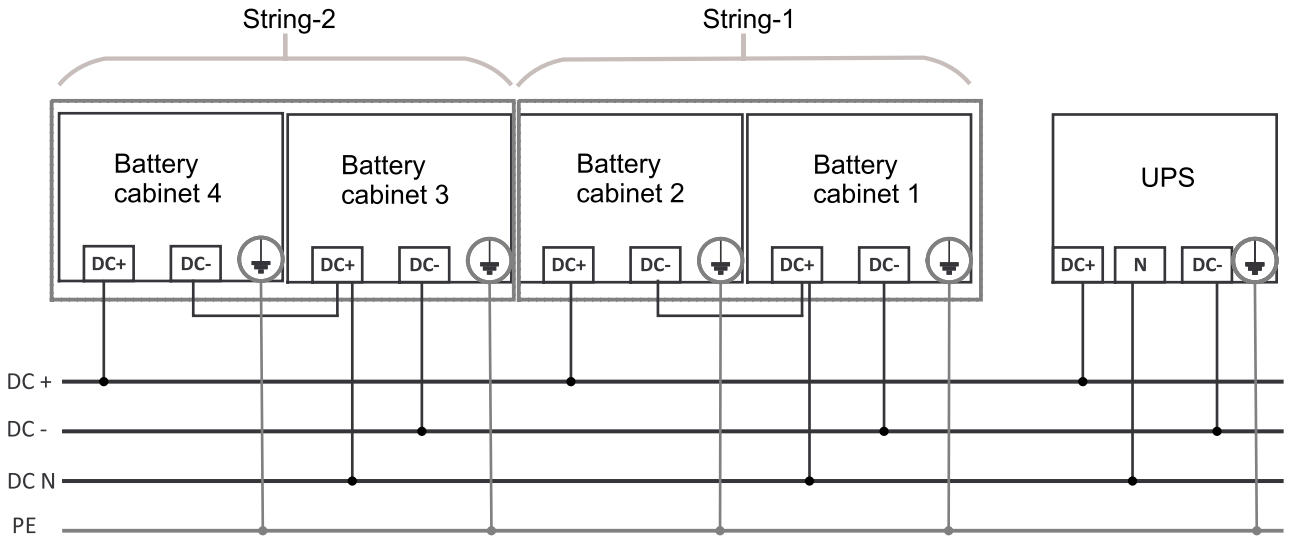
   NOTE: If the combined short circuit current of the battery cabinets exceeds the short circuit rating of the UPS, a pull box with fuses or an external box with a battery breaker must be installed. Please contact Schneider Electric for more information and refer to the submittal drawings for your specific UPS.

   NOTE: Follow the correct wiring diagram based on your system.

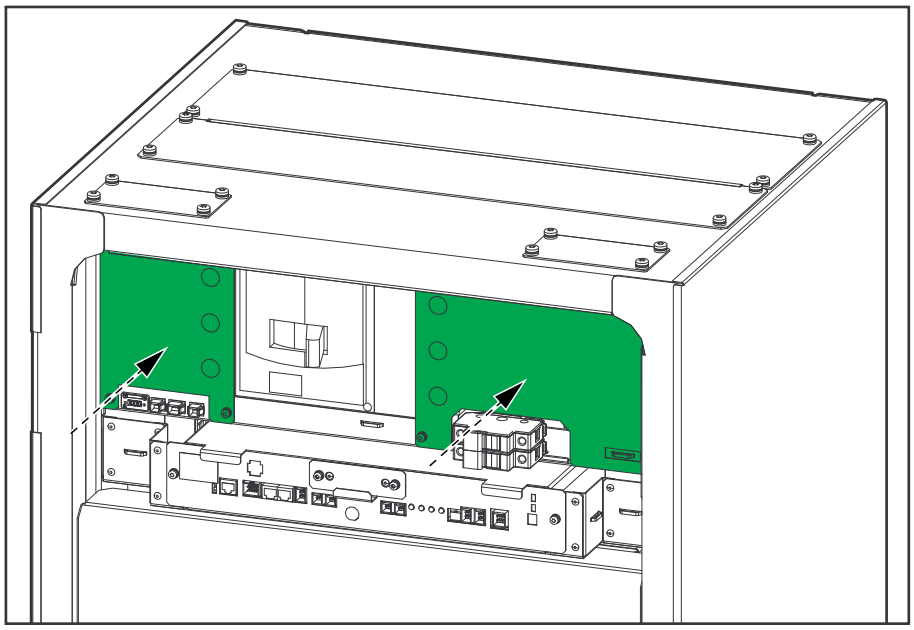
2-Wire Connection



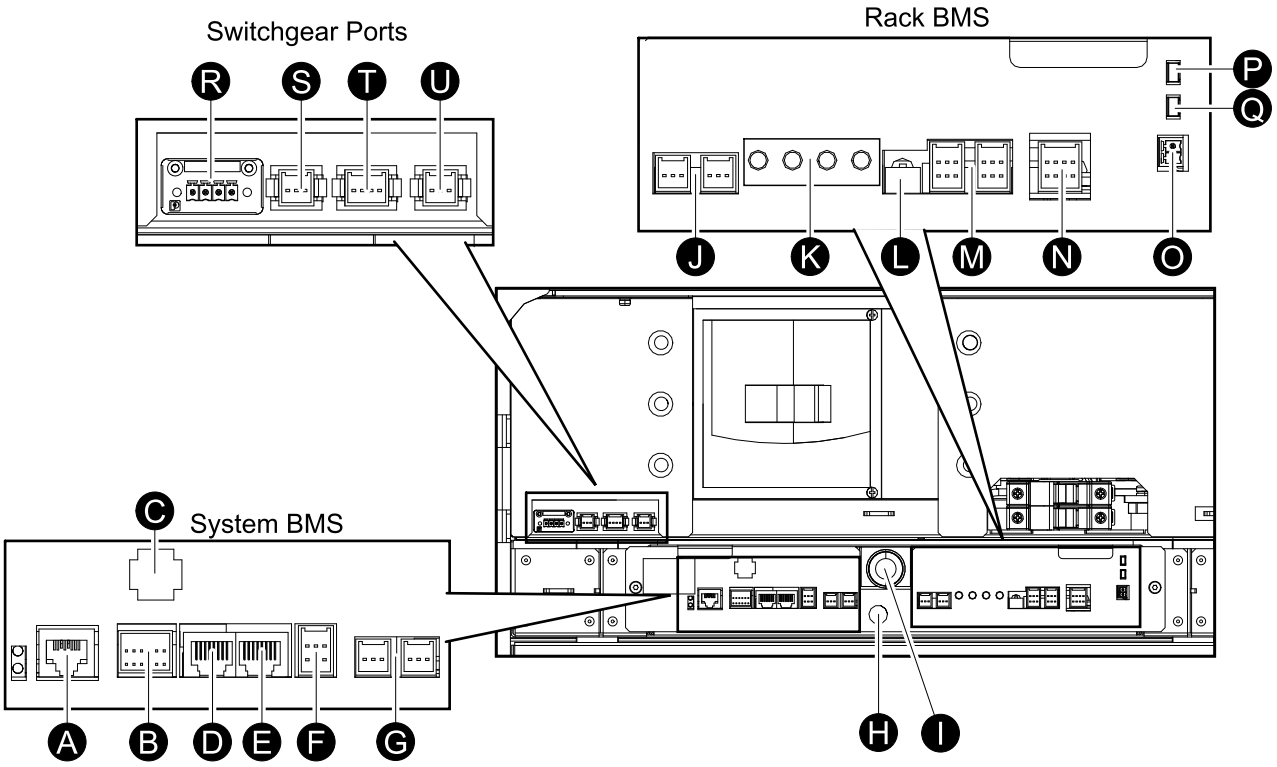
3-Wire Connection



6. Reinstall the two transparent covers.



Overview of Communication Interface



A. TCP/IP
B. DRY CONTACT ports
C. SMPS I/O
D. CAN I/O
E. RS485
F. System BMS CAN I/O
G. DC OUT 1 and DC OUT 2
H. Reset switch
I. Start-up button
J. DC IN 1 and DC IN 2
K. Status LEDs
L. CAN bus loop termination resistor switch
M. CAN 1 port, CAN 2 port
N. Module
O. EPO
P. PSU 1 LED
Q. PSU 2 LED
R. SG IO 1
S. SG IO 2
T. MCCB AUX 1
U. MCCB AUX 2

Route the Signal Cables to the Switchgear, Rack BMS, and System BMS Ports

⚠⚠DANGER

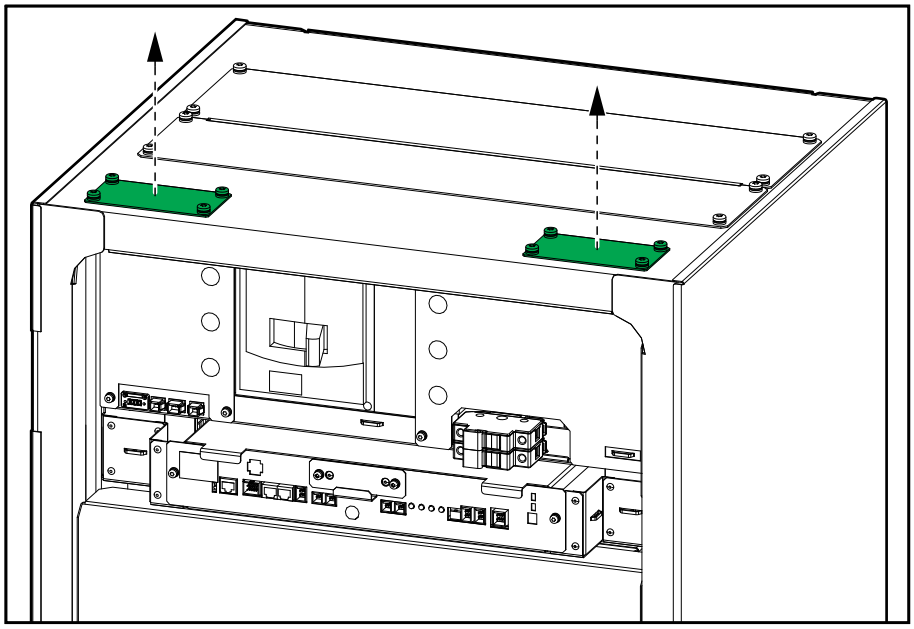
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or punch holes with the gland plates installed and do not drill or punch holes in close proximity to the battery cabinet.

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

NOTE: Please refer to the UPS submittal drawings to get a complete overview of the connections before preparing for and routing the signal cables.

1. Remove the gland plates for signal cables.



2. Drill or punch holes for cables/conduits and install conduits (if applicable).

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

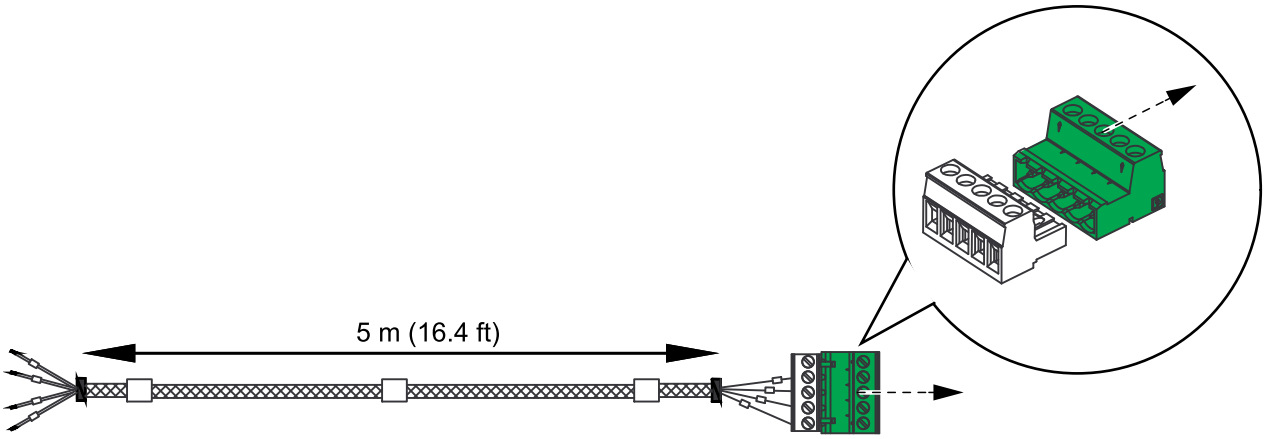
Failure to follow these instructions will result in death or serious injury.

3. The provided SELV signal cable 0W13444 and the ELV signal cables 0W76929 and 0W13442 are 5 m (16.4 ft) long. You can extend the length of the three signal cables if the distance to the UPS is more than the expected 5 m (16.4 ft). Follow one of the instructions below:

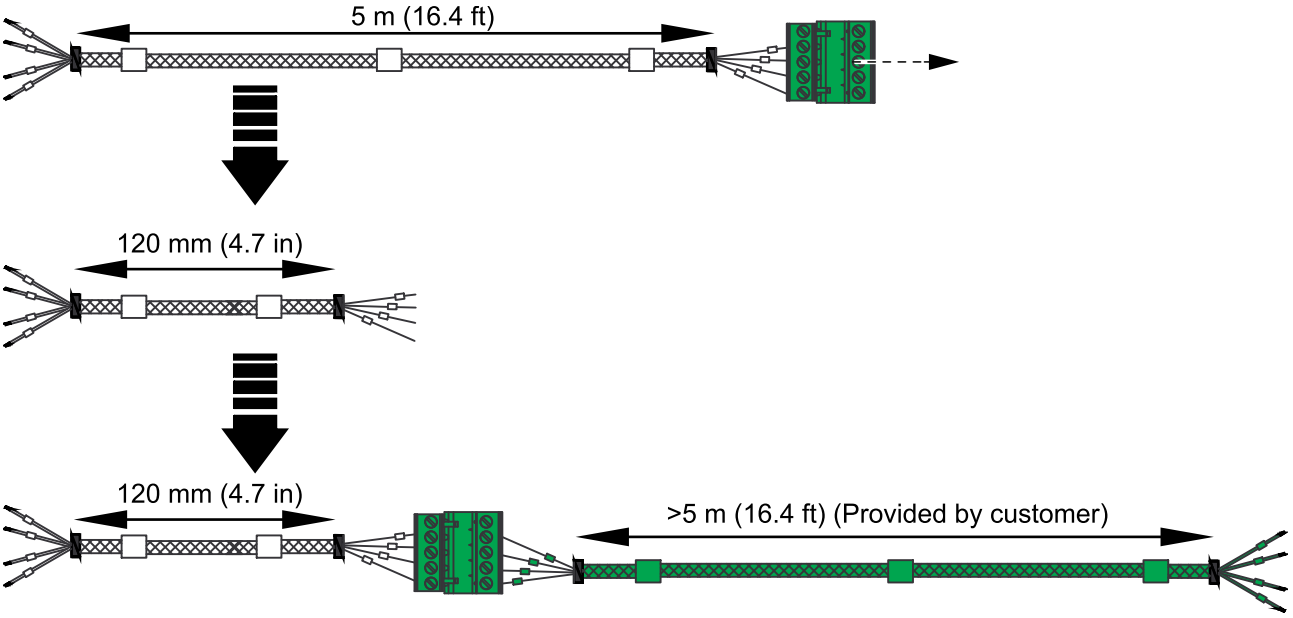
Signal cable specifications

0W13444	4 conductors, 22 AWG, 600 V ETFE UL10086, strand, 90 °C
0W76929	2 conductors, 24 AWG, 600 V ETFE UL10086, double insulation, strand, 90 °C
0W13442	2 conductors, 22 AWG, 600 V ETFE UL10086, double insulation, strand, 90°C

– **The provided signal cable is long enough to reach between the battery cabinet and the UPS**: Remove the male adapter connector from the end of the signal cables and continue to the next step. OR



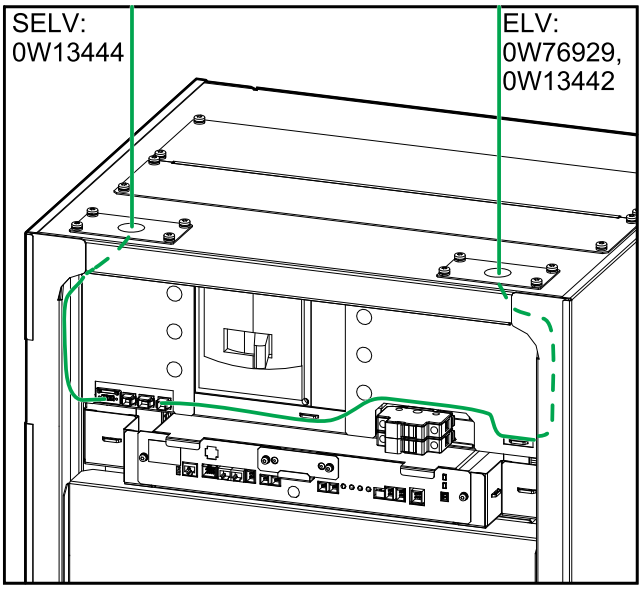
– **The provided signal cable is NOT long enough to reach between the battery cabinet and the UPS**: Remove the female connector and the male adapter connector from the end of the signal cable, shorten the signal cable to 120 mm (4.7 in) length, and reattach the labels and the female connector and male adapter connector to the signal cable. Attach a signal cable[3] (not provided) to the male adapter connector in the correct length to reach from the battery cabinet to the UPS. As an alternative, you can also crimp the signal cable extensions. Ensure that the crimp point is inside the battery cabinet, not in conduits or cable trays outside the battery cabinet.



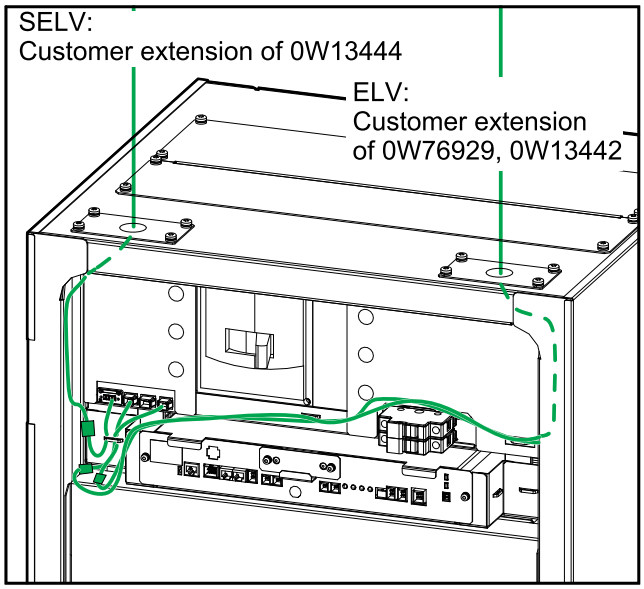
3. Select the extension signal cables according to the *Signal cable specifications*.

4. Route the SELV signal cable 0W13444 and the ELV signal cables 0W76929 and 0W13442 into the battery cabinet and to the switchgear ports. Do not connect the signal cables, Schneider Electric service will complete the connections during start-up.

With Provided Signal Cables

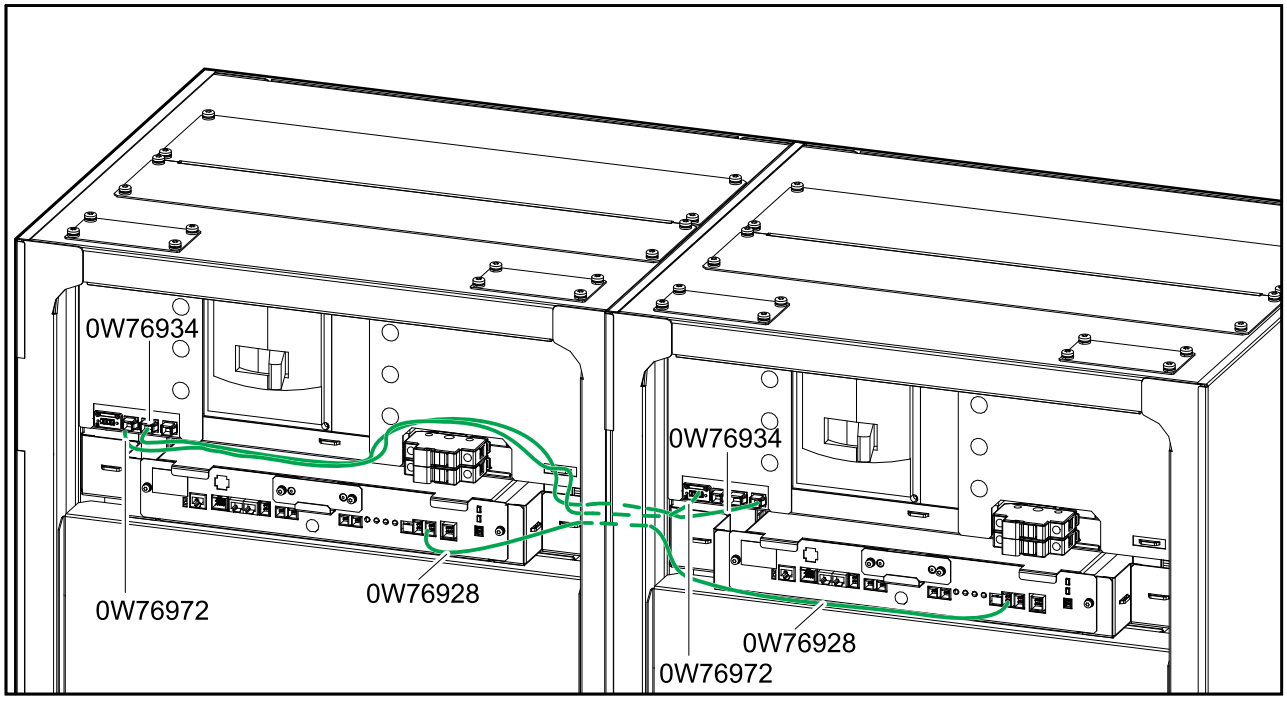


With Extended Signal Cables

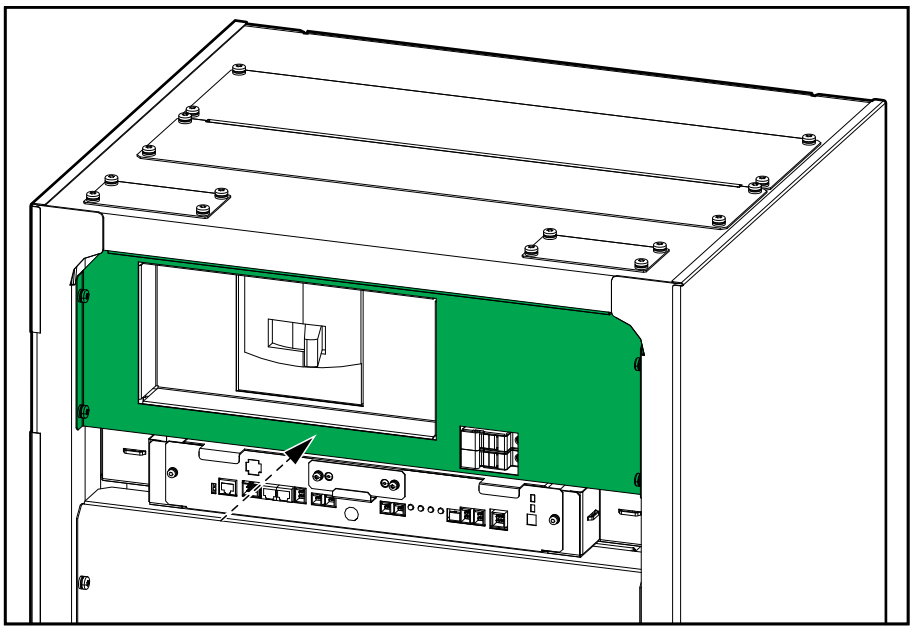


5. Route the signal cable 0W76928, 0W76934, and 0W76972 through the openings in the sides of the battery cabinets and to the ports in the rack BMS and the switchgear ports. Do not connect the signal cables, Schneider Electric service will complete the connections during start-up.

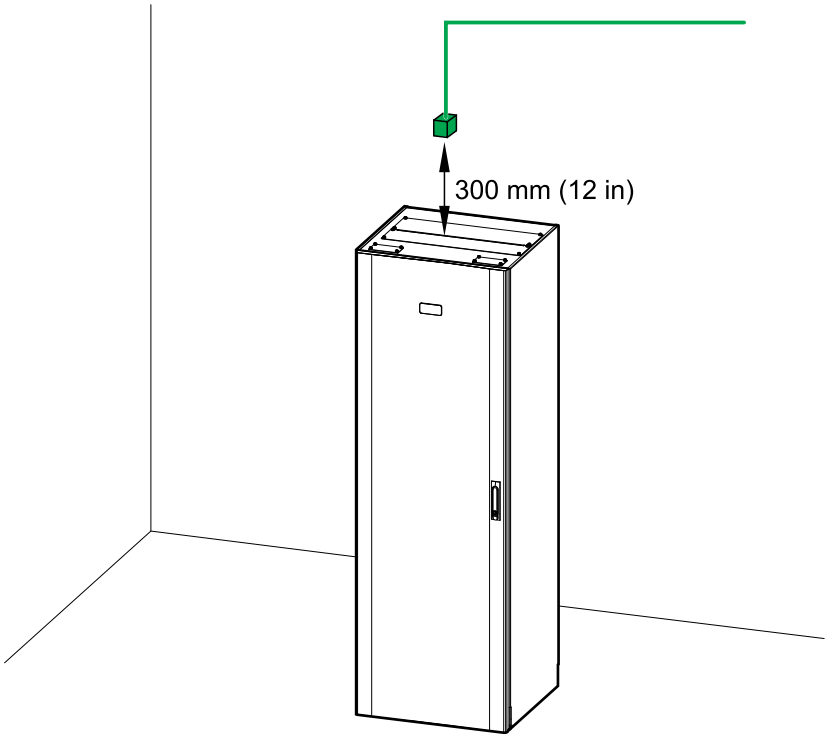
   NOTE: All cables between rack BMS and rack BMS as well as between system BMS and rack BMS are considered Class 2/SELV.



6. Reinstall the plate in front of the battery breaker.



7. Reinstall the front door of the battery cabinet.
8. Install the temperature sensor provided with the UPS above the battery cabinet, approximately 300 mm (12 in) from the top. Route the signal cable to the UPS and connect according to the instructions in the UPS installation manual.



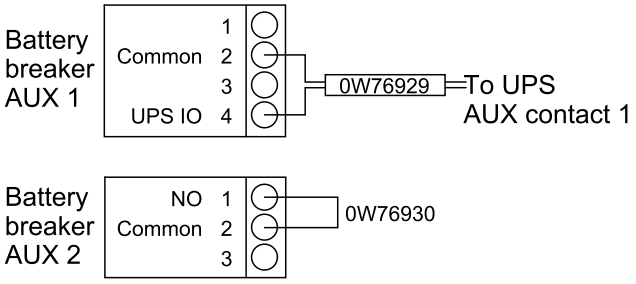
NOTE: The temperature sensor measures the ambient temperature. Do not place the temperature sensor close to external heating or cooling equipment which may give an incorrect measurement of the ambient temperature.

Overview of Signal Cables between the Battery Cabinets and the Auxiliary Contacts in the UPS

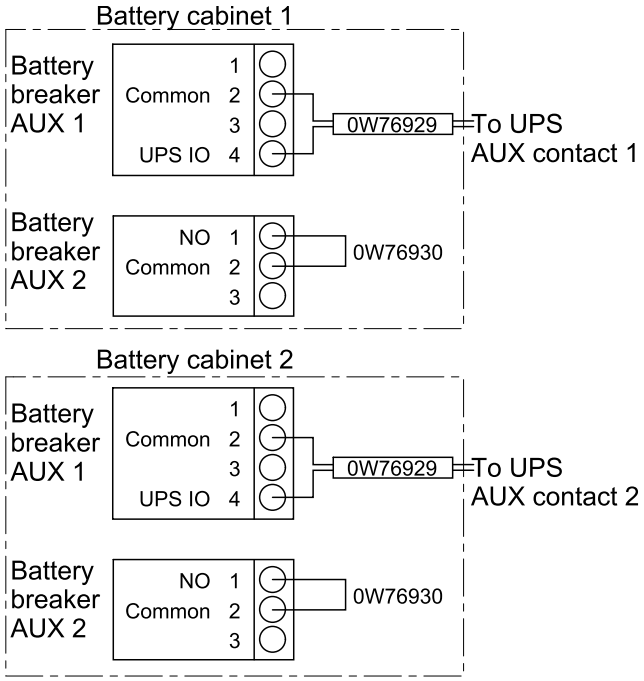
The connection of auxiliary contacts is dependent on the number of battery breakers supported by the UPS. In the examples below two banks of battery breakers are supported.

NOTE: If the combined short circuit current of the battery cabinets exceeds the short circuit rating of the UPS, a pull box with fuses or an external box with a battery breaker must be installed. Please contact Schneider Electric for more information.

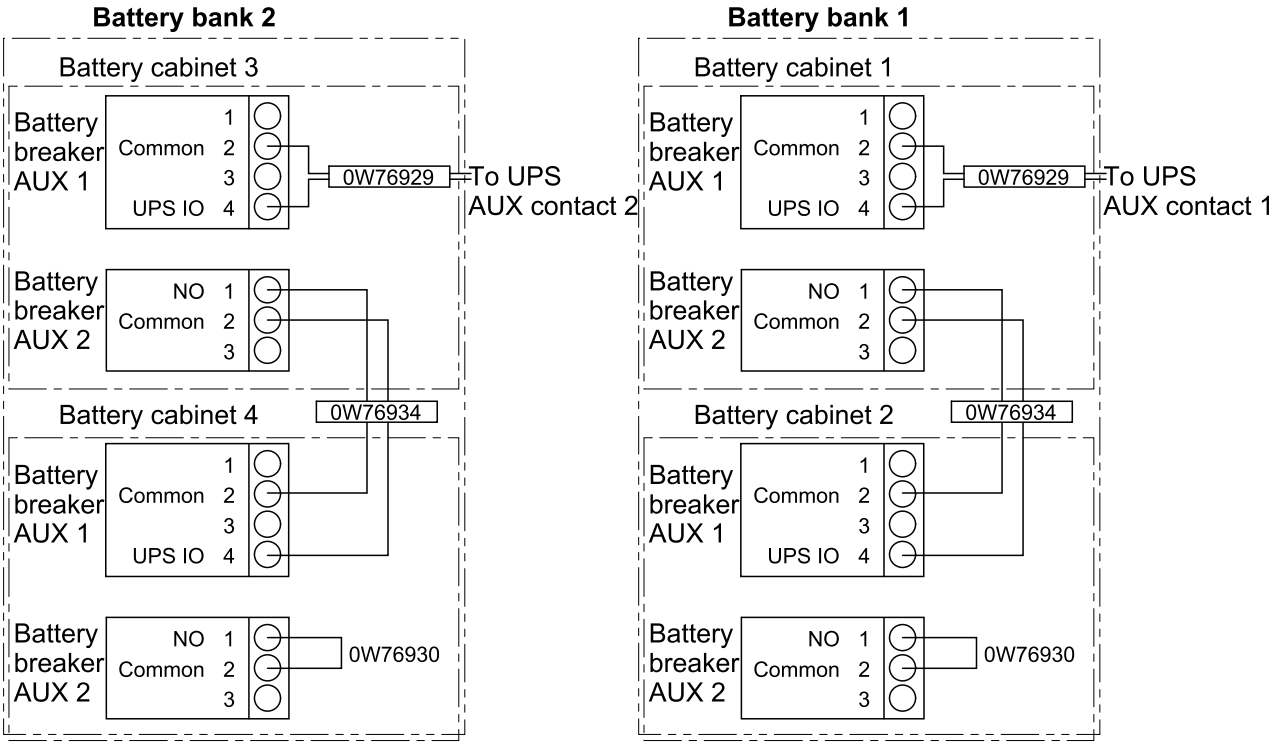
System with One Battery Cabinet



System with Two Battery Cabinets



System with Four Battery Cabinets in Two Battery Banks

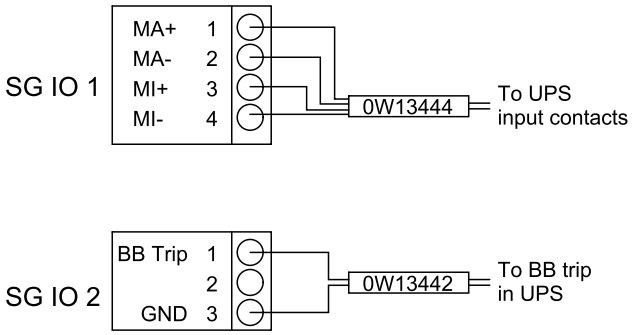


Overview of Signal Cables for Alarms and Battery Breaker Trip

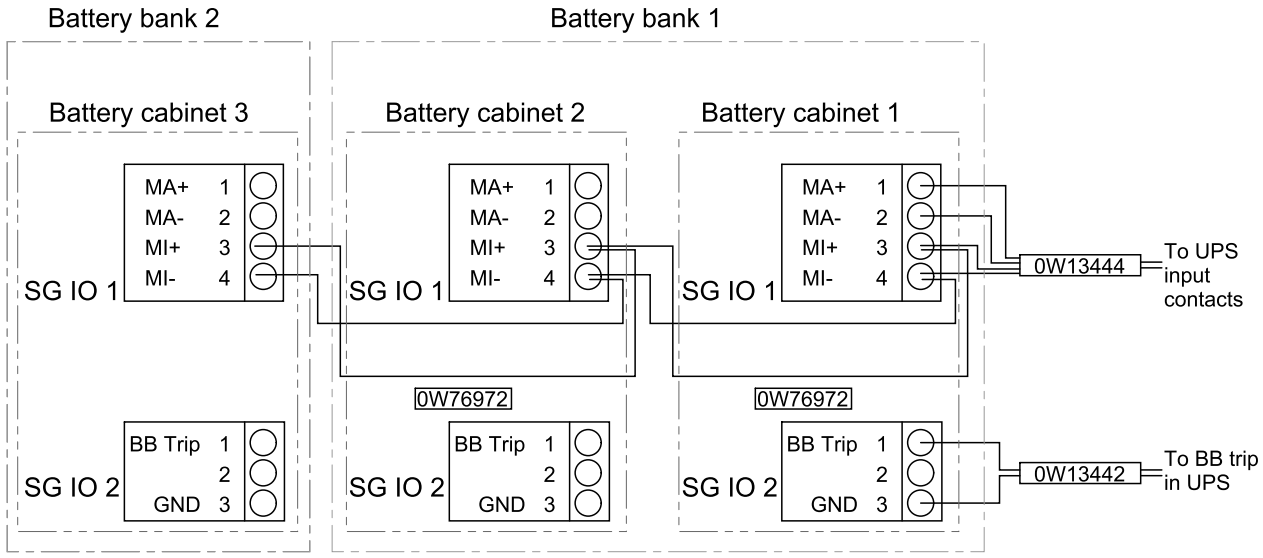
In systems with more battery cabinets, only the system BMS of battery cabinet 1 (the battery cabinet closest to the UPS) is connected to the UPS. Remove signal cable 0W13441 between the SMPS I/O port and the DRY CONTACT ports on battery cabinet 2 and battery cabinet 3.

- SG IO 1: Used for sending signals for minor and major alarms to the UPS.
- SG IO 2: Used for receiving trip signal from the UPS.

System with One Battery Cabinet



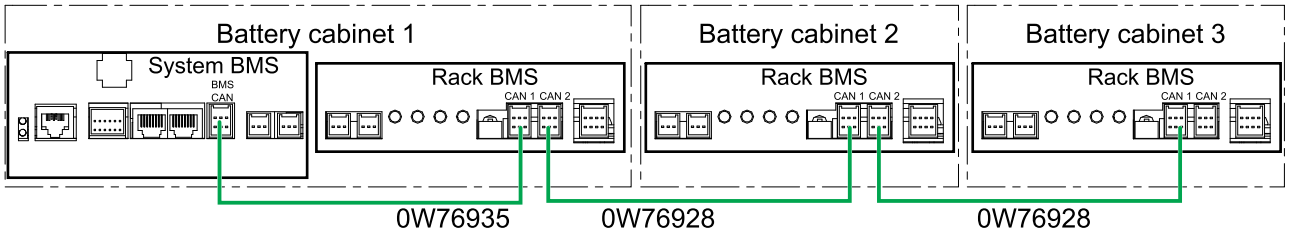
System with Three Battery Cabinets in Two Battery Banks



Overview of CAN Bus Cables between the Battery Cabinets

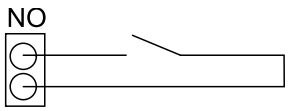
NOTE: In systems with more battery cabinets, remove the cables 0W76935 from CAN 1 in the rack BMS to the System BMS CAN I/O in battery cabinet 2 and battery cabinet 3.

1. Route signal cable 0W76928 from CAN 2 port of battery cabinet 1 to the CAN 1 port of battery cabinet 2. Repeat for the remaining battery cabinets. Do not connect the CAN cables, Schneider Electric service will complete the connections during start-up.



Overview of EPO Signal Cables

Connect the Class 2/SELV signal cables from the building EPO to the rack BMS. Class 2/SELV circuits must be isolated from the primary circuitry. Do not connect any circuit to the EPO terminal block unless it can be confirmed that the circuit is Class 2/SELV.



Operation Procedures

Shut Down the Battery Solution

NOTE: This procedure is only for a short temporary shutdown of the battery solution. If the battery solution should remain shut down for a longer period, please contact Schneider Electric.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

The battery cabinet contains an internal energy source. Hazardous voltage is still present after the battery breaker has been opened.

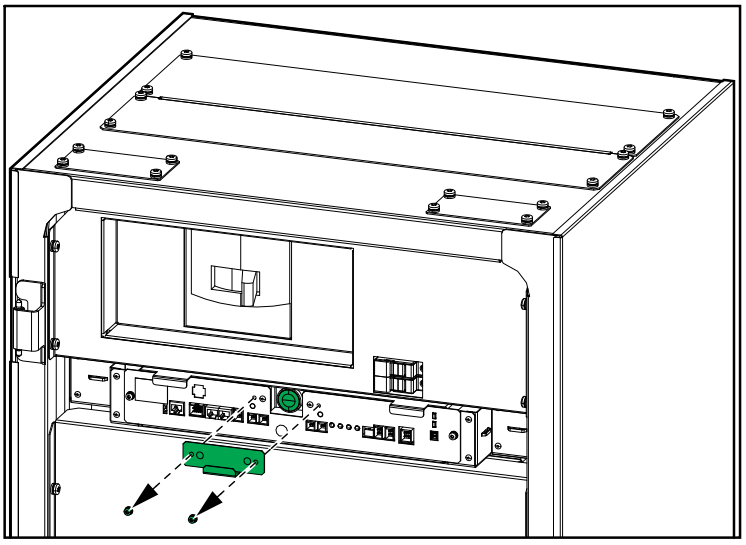
Failure to follow these instructions will result in death or serious injury.

1. Manually set the battery breaker of each individual battery cabinet to the OFF (open) position to disconnect the battery power from the UPS.

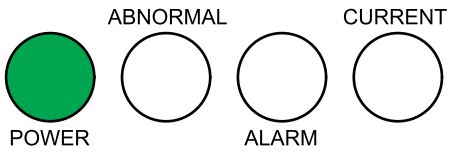
   NOTE: The system BMS and rack BMS will still be operating.

Restart the Battery Solution

1. Perform the following steps on all battery cabinets in the battery solution.
   a. Remove the cover in front of the start-up button and push the start-up button.



   - The PSU2 LED and the POWER LED will turn on.
   - The ABNORMAL and ALARM LEDs should remain off.



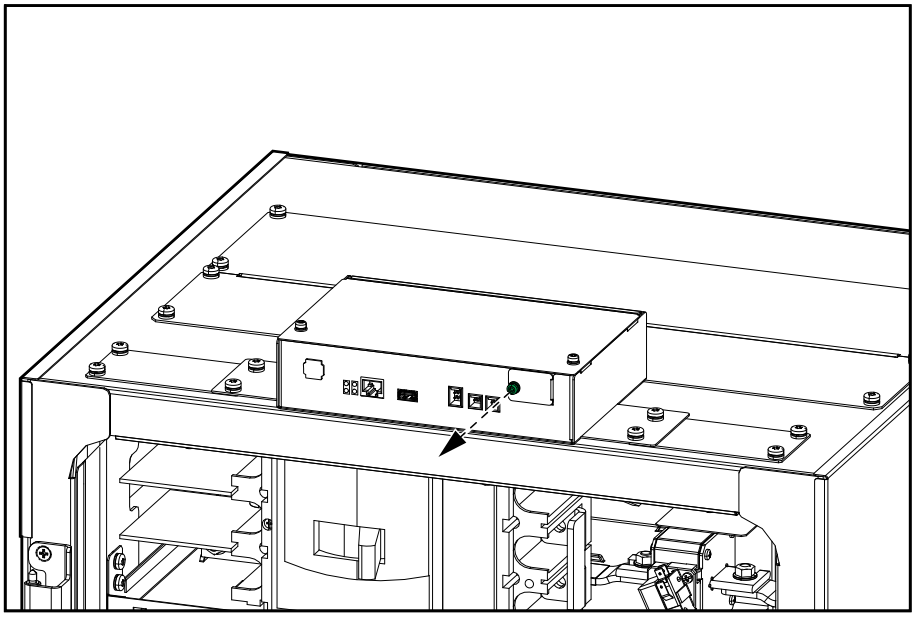
   b. Reinstall the cover in front of the start-up button.
   c. Set the battery breaker to the ON (closed) position.

Monitor the Battery System

NOTE: Schneider Electric uses the battery system monitoring software ITE/DCE to monitor the performance of the battery system. Please contact Schneider Electric application engineering team to obtain its installation instructions and operation instructions.

Download Data Log from the Data Log Kit (Optional)

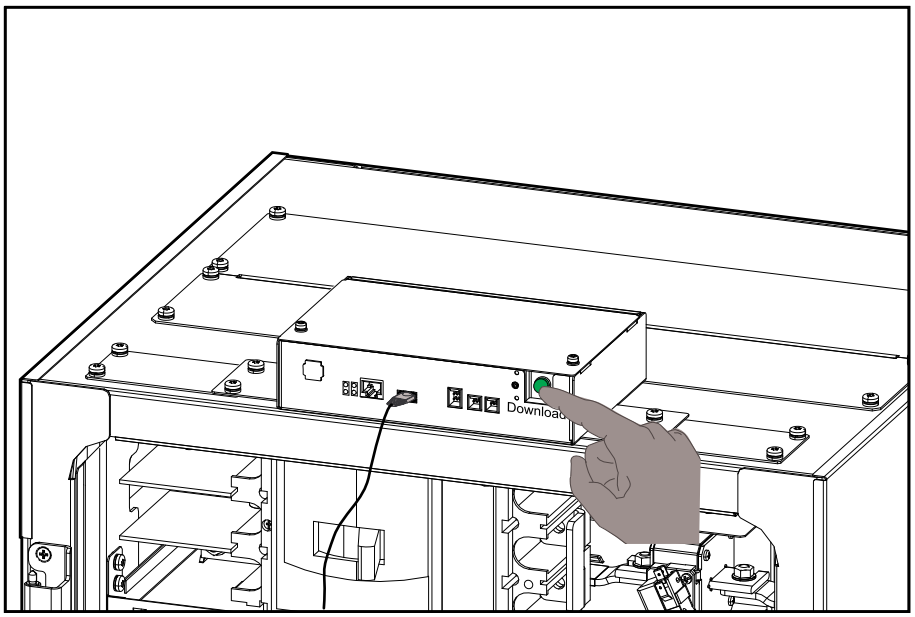
1. Remove the cover plate from the data log kit.



2. Connect a USB device to the USB port. Push and hold **DOWNLOAD** button for 50 milliseconds to 3 seconds until LED1 (USB) is turned on. LED1 (USB) is blinking (1 second interval) when data is being downloaded to the USB device.

   NOTE: Recommended capacity of USB device is 32GB or more, and file system supports FAT32 (recommended) or NTFS.

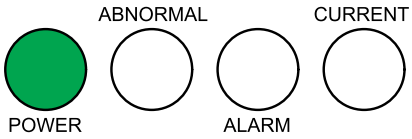
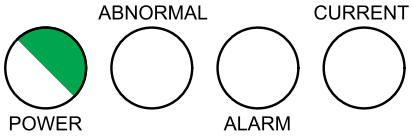
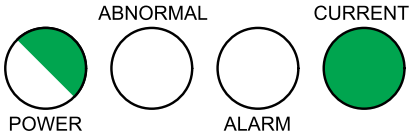
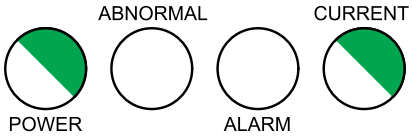
   NOTE: Download time takes up to about 80 minutes (eMMC data capacity 24GB, USB file system based on FAT32).



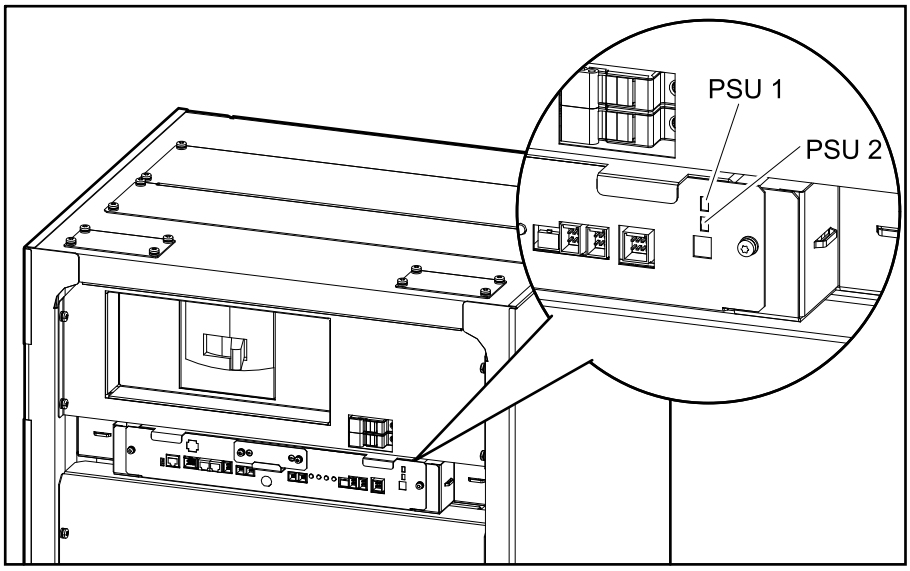
3. LED1 (USB) turns off when the download is complete. Reinstall the cover plate back to the data log kit.

Troubleshooting

Status LEDs

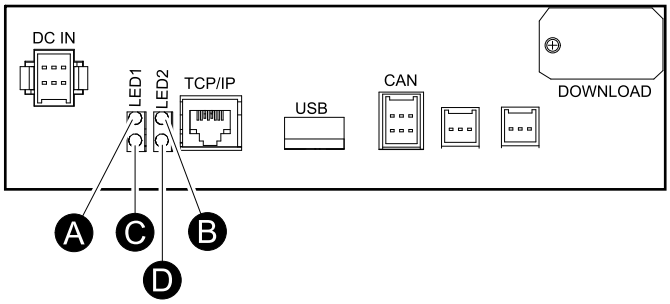
LED	Battery Status	Description
	Normal	The battery breaker is in the OFF (open) position.
	Normal	The battery breaker is in the ON (closed) position.
	Normal	The batteries are being discharged.
	Normal	The batteries are being recharged.
	Major alarm	The battery breaker has tripped and is in the OFF (open) position.
	Minor alarm	The battery breaker is in the ON (closed) position.

PSU LEDs



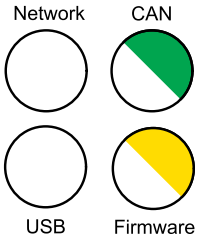
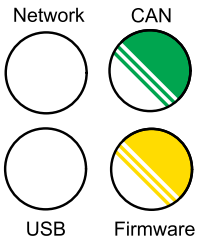
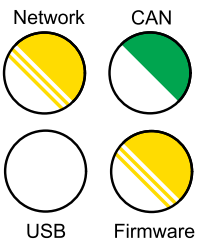
- When the LED is green, the PSU is powered ON.
- When the LED is OFF, the PSU is powered OFF or inoperable.

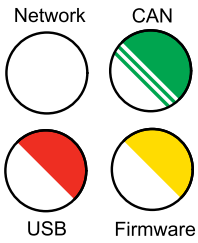
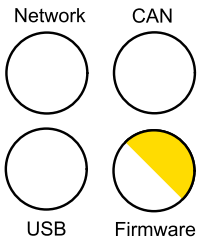
Data Log Kit LEDs



A. Network
B. CAN
C. USB
D. Firmware

Blinking means 1 second interval. Flashing means 50 milliseconds interval.

LED	Status	Description
	CAN blinking Firmware blinking	CAN data is incoming. Firmware is operating.
	CAN flashing Firmware flashing	Data is being reorganized due to setting change. Wait until reorganization is complete.
	Network flashing CAN blinking Firmware blinking	Network is being used when using Data BMS user interface.

LED	Status	Description
	USB blinking CAN flashing Firmware blinking	Data is being downloaded to USB device for backup.
	Firmware blinking CAN off	Connection error.

Alarm List

Protection Protocols

Protection Protocol for Battery Cabinet with 17 Battery Modules

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[4]	Release condition	Time (sec)	Battery breaker status
1	Over voltage protection - cell	Major	Max cell ≥ 4.28 V	5	OFF	Max cell <4.25 V and press the reset switch	5	ON
2	Under voltage protection - cell	Major	Min cell ≤ 2.5 V	3	OFF	Min cell > 2.70 V and press the reset switch	3	ON
3	Over voltage protection - cabinet	Major	Cabinet voltage ≥ 582.08 V	5	OFF	Cabinet voltage < 578 V and press the reset switch	5	ON
4	Under voltage protection - cabinet	Major	Cabinet voltage ≤ 340 V	3	OFF	Cabinet voltage > 367.2 V and press the reset switch	3	ON
5	Cabinet cell voltage imbalance	Major	△Vcell ≥ 500 mV	5	OFF	△Vcell ≥ 50 mV	5	ON
6	Module cell voltage imbalance	Major	△Vcell ≥ 90 mV	5	OFF	△Vcell ≥ 30 mV	5	ON
7	Voltage sensing error (cabinet)	Minor	|Cabinet V - cell sum V| ≥ 40.8 V	10	ON	|Cabinet V - cell sum V| < 20.4 V and press the reset switch	3	ON
8	Voltage sensing error (module)	Minor	|Module V - cell sum V| ≥ 190 mV	5	ON	|Module V - cell sum V| < 190 mV and press the reset switch	3	ON
9	Over temperature protection	Major	Max temp ≥ 75 °C (167 °F)	3	OFF	Max temp < 65 °C (149 °F) and press the reset switch	3	ON
10	Under temperature protection	Minor	Min temp ≤ 0 °C (32 °F)	3	ON	Min temp > 5 °C (41 °F) and press the reset switch	3	ON
11	Temperature imbalance	Major	Max cell T - min cell T ≥ 40 °C (104 °F)	30	OFF	Max cell T - min cell T < 20 °C (68 °F) and press the reset switch	3	ON
12	Over current protection (charge)	Major	Level2 current ≥ 250 A	2	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 current ≥ 200 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
13	Over current protection (discharge)	Major	Level4 |current| ≥ 600 A	1	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level3 |current| ≥ 540 A	10	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level2 |current| ≥ 495 A	30	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 |current| ≥ 470 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
14	Communication lost (module ↔ cabinet)	Major	No communication	30	OFF	Communication reestablished and press the reset switch	-	ON
15	Communication lost (cabinet ↔ system)	Minor	No communication	30	ON	Communication reestablished and press the reset switch	-	ON
16	SW failure - battery breaker	Minor	Battery breaker OFF and |current| ≥ 2.4 A	3	ON	(Battery breaker OFF and (|current| < 2.4 A)	-	ON

4. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Protection Protocol for Battery Cabinet with 17 Battery Modules (Continued)

No	Item	Lev-el	Set condition	Software set time (sec)	Battery breaker status[5]	Release condition	Time (sec)	Battery breaker status
						and press the reset switch		
17	SW sensor failure - battery breaker	Minor	Battery breaker contact ON = battery breaker trip ON	3	ON	(Battery breaker contact ≠ battery breaker trip) and press the reset switch	-	ON
18	Current sensing error	Minor	No communication with Current IC	3	ON	Communication with current IC OK	-	ON
19	Fuse failure	Minor	Fuse blown	10	ON	Fuse ON and press the reset switch	-	ON

5. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Protection Protocol for Battery Cabinet with 16 Battery Modules

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[5]	Release condition	Time (sec)	Battery breaker status
1	Over voltage protection - cell	Major	Max cell ≥ 4.28 V	5	OFF	Max cell < 4.25 V and press the reset switch	5	ON
2	Under voltage protection - cell	Major	Min cell ≤ 2.5 V	3	OFF	Min cell > 2.70 V and press the reset switch	3	ON
3	Over voltage protection - cabinet	Major	Cabinet voltage ≥ 547.84 V	5	OFF	Cabinet voltage < 544 V and press the reset switch	5	ON
4	Under voltage protection - cabinet	Major	Cabinet voltage ≤ 320 V	3	OFF	Cabinet voltage > 345.6 V and press the reset switch	3	ON
5	Cabinet cell voltage imbalance	Major	△Vcell ≥ 500 mV	5	OFF	△Vcell ≥ 50 mV	5	ON
6	Module cell voltage imbalance	Major	△Vcell ≥ 90 mV	5	OFF	△Vcell ≥ 30 mV	5	ON
7	Voltage sensing error (cabinet)	Minor	|Cabinet V - cell sum V| ≥ 38.4 V	10	ON	|Cabinet V - cell sum V| < 19.2 V and press the reset switch	3	ON
8	Voltage sensing error (module)	Minor	|Module V - cell sum V| ≥ 190 mV	5	ON	|Module V - cell sum V| < 190 mV and press the reset switch	3	ON
9	Over temperature protection	Major	Max temp ≥ 75 ℃ (167 ° F)	3	OFF	Max temp < 65 °C (149 ° F)and press the reset switch	3	ON
10	Under temperature protection	Minor	Min temp ≤ 0 ℃ (32 °F)	3	ON	Min temp > 5 °C (41 °F) and press the reset switch	3	ON
11	Temperature imbalance	Major	Max cell T - min cell T ≥ 40 ℃ (104 °F)	30	OFF	Max cell T - min cell T < 20 °C (68 °F) and press the reset switch	3	ON
12	Over current protection (charge)	Major	Level2 current ≥ 250 A	2	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 current ≥ 200 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
13	Over current protection (discharge)	Major	Level4 |current| ≥ 600 A	1	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level3 |current| ≥ 540 A	10	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level2 |current| ≥ 495 A	30	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 |current| ≥ 470 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
14	Communication lost (module ↔ cabinet)	Major	No communication	30	OFF	Communication reestablished and press the reset switch	-	ON
15	Communication lost (cabinet ↔ system)	Minor	No communication	30	ON	Communication reestablished and press the reset switch	-	ON
16	SW failure - battery breaker	Minor	Battery breaker OFF and |current| ≥ 2.4 A	3	ON	(Battery breaker OFF and (|current| < 2.4 A) and press the reset switch	-	ON
17	SW sensor failure - battery breaker	Minor	Battery breaker contact ON = battery breaker trip ON	3	ON	(Battery breaker contact ≠ battery breaker trip) and press the reset switch	-	ON

5. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Protection Protocol for Battery Cabinet with 16 Battery Modules (Continued)

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[6]	Release condition	Time (sec)	Battery breaker status
18	Current sensing error	Minor	No communication with Current IC	3	ON	Communication with current IC OK	-	ON
19	Fuse failure	Minor	Fuse blown	10	ON	Fuse ON and press the reset switch	-	ON

6. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Protection Protocol for Battery Cabinet with 13 Battery Modules

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[7]	Release condition	Time (sec)	Battery breaker status
1	Over voltage protection - cell	Major	Max cell ≥ 4.28 V	5	OFF	Max cell <4.25 V and press the reset switch	5	ON
2	Under voltage protection - cell	Major	Min cell ≤ 2.5 V	3	OFF	Min cell > 2.70 V and press the reset switch	3	ON
3	Over voltage protection - cabinet	Major	Cabinet voltage ≥ 445.12 V	5	OFF	Cabinet voltage < 442 V and press the reset switch	5	ON
4	Under voltage protection - cabinet	Major	Cabinet voltage ≤ 260 V	3	OFF	Cabinet voltage > 280.8 V and press the reset switch	3	ON
5	Cabinet cell voltage imbalance	Major	△Vcell ≥ 500 mV	5	OFF	△Vcell ≥ 50 mV	5	ON
6	Module cell voltage imbalance	Major	△Vcell ≥ 90 mV	5	OFF	△Vcell ≥ 30 mV	5	ON
7	Voltage sensing error (cabinet)	Minor	|Cabinet V - cell sum V| ≥ 31.2 V	10	ON	|Cabinet V - cell sum V| < 15.6 V and press the reset switch	3	ON
8	Voltage sensing error (module)	Minor	|Module V - cell sum V| ≥ 190 mV	5	ON	|Module V - cell sum V| < 190 mV and press the reset switch	3	ON
9	Over temperature protection	Major	Max temp ≥ 75 °C (167 °F)	3	OFF	Max temp < 65 °C (149 °F) and press the reset switch	3	ON
10	Under temperature protection	Minor	Min temp ≤ 0 °C (32 °F)	3	ON	Min temp > 5 °C (41 °F) and press the reset switch	3	ON
11	Temperature imbalance	Major	Max cell T - min cell T ≥ 40 °C (104 °F)	30	OFF	Max cell T - min cell T < 20 °C (68 °F) and press the reset switch	3	ON
12	Over current protection (charge)	Major	Level2 current ≥ 250 A	2	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 current ≥ 200 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
13	Over current protection (discharge)	Major	Level4 |current| ≥ 600 A	1	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level3 |current| ≥ 540 A	10	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level2 |current| ≥ 495 A	30	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 |current| ≥ 470 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
14	Communication lost (module ↔ cabinet)	Major	No communication	30	OFF	Communication reestablished and press the reset switch	-	ON
15	Communication lost (cabinet ↔ system)	Minor	No communication	30	ON	Communication reestablished and press the reset switch	-	ON
16	SW failure - battery breaker	Minor	Battery breaker OFF and |current| ≥ 2.4 A	3	ON	(Battery breaker OFF and (|current| < 2.4 A) and press the reset switch	-	ON
17	SW sensor failure - battery breaker	Minor	Battery breaker contact ON = battery breaker trip ON	3	ON	(Battery breaker contact ≠ battery breaker trip) and press the reset switch	-	ON

7. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Protection Protocol for Battery Cabinet with 13 Battery Modules (Continued)

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[8]	Release condition	Time (sec)	Battery breaker status
18	Current sensing error	Minor	No communication with Current IC	3	ON	Communication with current IC OK	-	ON
19	Fuse failure	Minor	Fuse blown	10	ON	Fuse ON and press the reset switch	-	ON

8. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Protection Protocol for Battery Cabinet with 10 Battery Modules

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[9]	Release condition	Time (sec)	Battery breaker status
1	Over voltage protection - cell	Major	Max cell ≥ 4.28 V	5	OFF	Max cell <4.25 V and press the reset switch	5	ON
2	Under voltage protection - cell	Major	Min cell ≤ 2.5 V	3	OFF	Min cell > 2.70 V and press the reset switch	3	ON
3	Over voltage protection - cabinet	Major	Cabinet voltage ≥ 342.4 V	5	OFF	Cabinet voltage < 340 V and press the reset switch	5	ON
4	Under voltage protection - cabinet	Major	Cabinet voltage ≤ 200 V	3	OFF	Cabinet voltage > 216 V and press the reset switch	3	ON
5	Cabinet cell voltage imbalance	Major	△Vcell ≥ 500 mV	5	OFF	△Vcell ≥ 50 mV	5	ON
6	Module cell voltage imbalance	Major	△Vcell ≥ 90 mV	5	OFF	△Vcell ≥ 30 mV	5	ON
7	Voltage sensing error (cabinet)	Minor	|Cabinet V - cell sum V| ≥ 24 V	10	ON	|Cabinet V - cell sum V| < 12 V and press the reset switch	3	ON
8	Voltage sensing error (module)	Minor	|Module V - cell sum V| ≥ 190 mV	5	ON	|Module V - cell sum V| < 190 mV and press the reset switch	3	ON
9	Over temperature protection	Major	Max temp ≥ 75 °C (167 ° F)	3	OFF	Max temp < 65 °C (149 ° F) and press the reset switch	3	ON
10	Under temperature protection	Minor	Min temp ≤ 0 °C (32 °F)	3	ON	Min temp > 5 °C (41 °F) and press the reset switch	3	ON
11	Temperature imbalance	Major	Max cell T - min cell T ≥ 40 °C (104 °F)	30	OFF	Max cell T - min cell T < 20 °C (68 °F) and press the reset switch	3	ON
12	Over current protection (charge)	Major	Level2 current ≥ 250 A	2	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 current ≥ 200 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
13	Over current protection (discharge)	Major	Level4 |current| ≥ 600 A	1	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level3 |current| ≥ 540 A	10	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level2 |current| ≥ 495 A	30	OFF	|Current| < 10 A and press the reset switch	3	ON
		Major	Level1 |current| ≥ 470 A	60	OFF	|Current| < 10 A and press the reset switch	3	ON
14	Communication lost (module ↔ cabinet)	Major	No communication	30	OFF	Communication reestablished and press the reset switch	-	ON
15	Communication lost (cabinet ↔ system)	Minor	No communication	30	ON	Communication reestablished and press the reset switch	-	ON
16	SW failure - battery breaker	Minor	Battery breaker OFF and |current| ≥ 2.4 A	3	ON	(Battery breaker OFF and (|current| < 2.4 A) and press the reset switch	-	ON
17	SW sensor failure - battery breaker	Minor	Battery breaker contact ON = battery breaker trip ON	3	ON	(Battery breaker contact ≠ battery breaker trip) and press the reset switch	-	ON

9. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

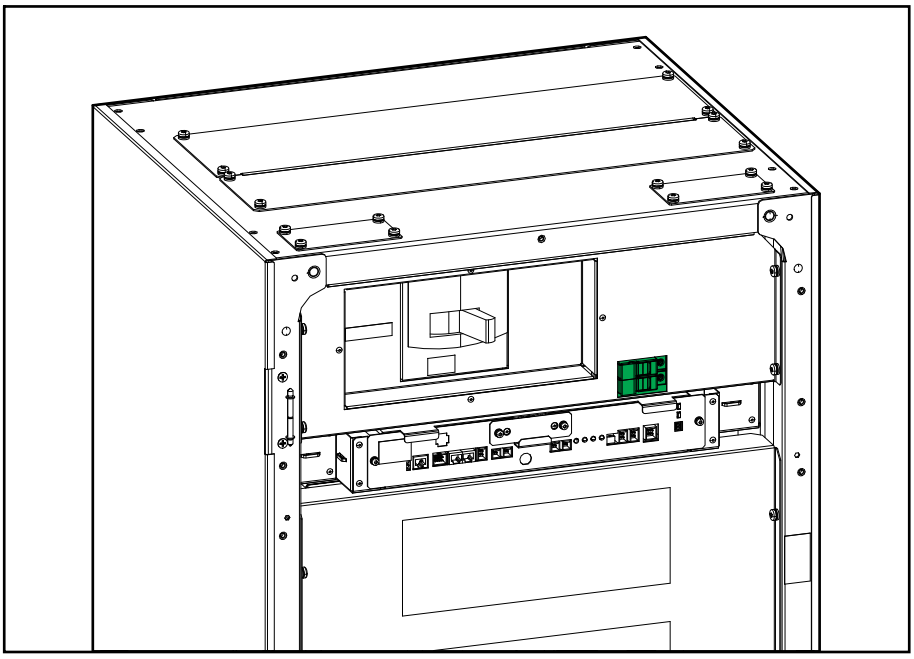
Protection Protocol for Battery Cabinet with 10 Battery Modules (Continued)

No	Item	Level	Set condition	Software set time (sec)	Battery breaker status[10]	Release condition	Time (sec)	Battery breaker status
18	Current sensing error	Minor	No communication with Current IC	3	ON	Communication with current IC OK	-	ON
19	Fuse failure	Minor	Fuse blown	10	ON	Fuse ON and press the reset switch	-	ON

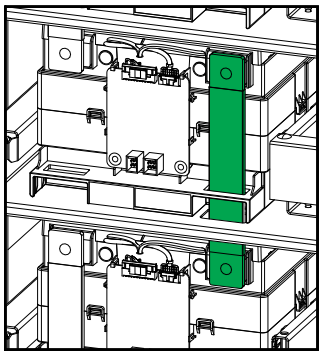
10. The battery breaker status will switch from ON to OFF within three seconds after the software set time.

Decommission or Move the Battery Cabinet to a New Location

1. Lockout/Tagout the battery breaker in the OFF (open) position and open the two fuse holders in the battery cabinet.



2. Lockout/Tagout the power to the SMPS AC/DC converter upstream (if applicable).
3. Disconnect and remove all power cables from the battery cabinet. See Connect the Power Cables, page 28 for details.



4. Disconnect and remove all signal cables from the battery cabinet. See Route the Signal Cables to the Switchgear, Rack BMS, and System BMS Ports, page 33 for details.
5. Disconnect and remove power cables to the SMPS AC/DC converter (if applicable). Refer to the SMPS AC/DC converter installation manual for details.
6. Contact Schneider Electric for removal of the battery busbars and fuse kits. The battery busbars and fuse kits must only be removed by a Schneider Electric-certified field service representative or service partner.

7. Remove the batteries from the shelves. Recycle or reuse the batteries as appropriate.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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.

- Recycle Lithium-ion batteries correctly.
- Dispose of the batteries in accordance with country and local regulations.

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

8. Contact Schneider Electric for removal of the interconnection busbars between the cabinets. The interconnections busbars must only be removed by a Schneider Electric-certified field service representative or service partner.
9. Remove the seismic front and rear anchoring brackets from the cabinets. Save for reinstallation. See Install the Front Seismic Anchoring, page 25 and Install the Rear Seismic Anchoring, page 21 for details.
10. Close and lock the front door of the cabinets.
11. Raise the feet of the cabinets until the casters have full contact with the floor.
12. You can now move each cabinet individually by rolling it over the floor on the casters.

⚠WARNING

TIPPING HAZARD

- The casters of the cabinet are exclusively for transport on flat, even, hard, and horizontal surfaces.
- The casters of the cabinet are intended for transport over short distances (i.e. inside the same building).
- Move at a slow pace and pay close attention on the floor conditions and the balance of the cabinet.

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

13. **For transport over longer distances or in conditions that are not suitable for the casters of the cabinet**:

⚠WARNING

TIPPING HAZARD

For transport over longer distances or in conditions that are not suitable for the casters of the battery cabinet, ensure:

- that personnel performing the transport have necessary skills and have received adequate training;
- to use appropriate tools to safely lift and transport the cabinet;
- to protect the product against damage by using appropriate protection (like wrapping or packaging).

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

⚠WARNING

TOP-HEAVY CABINET

The battery cabinet is top-heavy. Take appropriate precautions during handling and preparation for transport/shipment.

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

Transportation requirements:

- Mount the cabinet in a vertical position in the center of a suitable pallet. The pallet must be suitable for the weight of the cabinet.
- Use appropriate means of fixation to mount the cabinet to the pallet.

⚠DANGER

TIPPING HAZARD

- The cabinet must be appropriately fixed to the pallet immediately after being placed on the pallet.
- The fixation hardware must be strong enough to withstand vibrations and shocks during loading, transport, and unloading.

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

⚠WARNING

UNEXPECTED EQUIPMENT BEHAVIOR

Do not lift the cabinet with a forklift/pallet truck directly on the frame as it may bend or damage the frame.

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

14. Perform one of the following:
    – Decommission the battery cabinet, OR
    – Move the battery cabinet to a new location to install it.

15. **Only for installing the battery cabinet in a new location**: Follow the installation manual to install the battery cabinet in the new location. See Installation Procedure, page 18 for installation overview. Startup must only be performed by Schneider Electric.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Startup must only be performed by Schneider Electric.

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

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

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