

# Easy UPS 3-Phase Modular

**50-250 kW**

## Installation

380 V, 400 V, 415 V

Latest updates are available on the Schneider Electric website  
6/2025



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## Access to Your Product Manuals Online

### Find the UPS Manuals, Submittal Drawings, and Other Documentation for Your Specific UPS Here:

From the main menu on the UPS display, tap **Digital experience** and scan the QR code,

**OR**

In your web browser, type in <https://www.go2se.com/ref=> and the commercial reference for your product.

Example: <https://www.go2se.com/ref=EMUPS50K250PBHS>

### Find the UPS Manuals, Relevant Auxiliary Product Manuals, and Option Manuals Here:

Scan the QR code to go to the Easy UPS 3-Phase Modular online manual portal:



<https://www.productinfo.schneider-electric.com/easyups3pmodular/>

Here you can find your UPS installation manual, UPS operation manual, and UPS technical specifications, and you can also find installation manuals for your auxiliary products and options.

This online manual portal is available on all devices and offers digital pages, search functionality across the different documents in the portal, and PDF download for offline use.

### Learn More About the Easy UPS 3-Phase Modular Here:

Go to <https://www.se.com/ww/en/product-range/74219412> to learn more about this product.

# 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).

## Electromagnetic Compatibility

### **NOTICE**

#### **RISK OF ELECTROMAGNETIC DISTURBANCE**

This is a product category C3 product. In a residential environment, this product may cause radio interference, 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**

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 disconnect devices, battery disconnect devices, cabling, etc.) and environmental requirements. No responsibility is assumed by Schneider Electric if these requirements are not respected.
- After the UPS system has been electrically wired, do not start up the system. Start-up must only be performed by Schneider Electric.

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

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

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

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

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

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

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

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

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

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

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

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

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

## **DANGER**

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

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

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

## **DANGER**

### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR 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 will result in death or serious injury.**

## **NOTICE**

### **RISK OF OVERHEATING**

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

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

## **NOTICE**

### **RISK OF EQUIPMENT DAMAGE**

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

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

## **Additional Safety Precautions After Installation**

## **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. If additional construction work is needed in the installation room after this product has been installed, turn off the product and cover the product with the protective packaging bag the product was delivered in.

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

## 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 utility/mains supply. Before installing or servicing the UPS system, ensure that the units are OFF and that utility/mains and batteries are disconnected. Wait five minutes before opening the UPS to allow the capacitors to discharge.
- 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 UPS must be properly earthed/grounded and due to a high touch current/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 5th 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.**

## **DANGER**

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

- Always perform correct Lockout/Tagout before working on the UPS.
- A UPS with autostart enabled will automatically restart when the mains supply returns.
- If autostart is enabled on the UPS, a label must be added on the UPS to warn about this functionality.

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

Add the label below on the UPS if autostart has been enabled:

## **DANGER**

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

Autostart is enabled. The UPS will automatically restart when the mains supply returns.

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

## **DANGER**

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

This product can cause a DC current in the PE conductor. Where a residual current-operated protective device (RCD) is used for protection against electrical shock, only an RCD of Type B is allowed on the supply side of this product.

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

## Battery Safety

## **DANGER**

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

- Battery disconnect devices 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**

- Mount the batteries in the UPS system, but do not connect the batteries until the UPS system is ready to be powered up. The time duration from battery connection 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.**











**NOTE:** Always follow the documentation from the battery manufacturer concerning battery storage, battery installation, and battery maintenance.

## Cybersecurity Recommendations

- Install the UPS in a location with restricted access.
- Only authorize access to the UPS to maintenance and service personnel.
- Mark the restricted areas with “For authorized personnel only”.
- Record the access to restricted areas with either a physical or an electronic audit trail.



## Symbols Used in the Product

|   |   |
|---|---|
|    | This is the earthing/ground symbol.   |
|    | This is the protective earth/equipment grounding conductor symbol.  |
|    | This is the direct current symbol. It is also referred to as DC.  |
|    | This is the alternating current symbol. It is also referred to as AC.   |
|    | This is the positive polarity symbol. It is used to identify the positive terminal(s) of equipment which is used with, or generates direct current.   |
|    | This is the negative polarity symbol. It is used to identify the negative terminal(s) of equipment which is used with, or generates direct current.   |
|   | This is the battery symbol.   |
|  | This is the static switch symbol. It is used to indicate switches that are designed to connect or disconnect the load to or from the supply respectively without the existence of moving parts. |
|  | This is the AC/DC converter (rectifier) symbol. It is used to identify an AC/DC converter (rectifier) and, in case of plug-in devices, to identify the relevant receptacles.                    |
|  | This is the DC/AC converter (inverter) symbol. It is used to identify an DC/AC converter (inverter) and, in case of plug-in devices, to identify the relevant receptacles.                      |

# Specifications

## Specifications for 20 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>1</sup>  |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>2</sup>  | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 32  | 30      | 20      |
|        | Maximum input current (A)                                       | 40  | 38      | 38      |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 31  | 30      | 28      |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 30  | 29      | 28      |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 64 A / 220 ms   |         |         |

1. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.
2. Measured at 30 °C.

|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 12  |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 44  |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 52  |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Specifications for 40 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>3</sup>  |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>4</sup>  | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 64  | 61      | 59      |
|        | Maximum input current (A)                                       | 80  | 76      | 76      |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 62  | 59      | 57      |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 61  | 58      | 56      |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 128 A / 220 ms  |         |         |

3. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.
4. Measured at 30 °C.

|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 24  |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 89  |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 104   |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Specifications for 50 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>5</sup>  |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>6</sup>  | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 80  | 76      | 74      |
|        | Maximum input current (A)                                       | 100   | 95      | 95      |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 78  | 74      | 71      |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 76  | 73      | 70      |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 160 A/220 ms  |         |         |

5. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

6. Measured at 30 °C.

|         | Voltage (V)  | 380  | 400 | 415 |
|---------|--|--|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)   |     |     |
|         | Maximum charging power (kW)                                  | 30   |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576   |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654   |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461   |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for $T \geq 25\text{ °C}$<br>0 mV/°C/cell for $T < 25\text{ °C}$ |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 111  |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 130  |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)  |     |     |
|         | Battery test   | Manual/automatic (selectable)  |     |     |
|         | Maximum short circuit rating                                 | 25 kA  |     |     |

## Specifications for 60 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>7</sup>  |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>8</sup>  | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 96  | 91      | 88      |
|        | Maximum input current (A)                                       | 120   | 114     | 114     |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 93  | 88      | 85      |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 91  | 87      | 84      |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 192 A / 220 ms  |         |         |

7. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

8. Measured at 30 °C.



|         | Voltage (V)  | 380  | 400 | 415 |
|---------|--|--|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)   |     |     |
|         | Maximum charging power (kW)                                  | 36   |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576   |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654   |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461   |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for $T \geq 25\text{ °C}$<br>0 mV/°C/cell for $T < 25\text{ °C}$ |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 133  |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 156  |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)  |     |     |
|         | Battery test   | Manual/automatic (selectable)  |     |     |
|         | Maximum short circuit rating                                 | 25 kA  |     |     |

## Specifications for 80 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>9</sup>  |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>10</sup>   | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 128   | 122     | 117     |
|        | Maximum input current (A)                                       | 160   | 152     | 152     |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 124   | 118     | 113     |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 122   | 116     | 112     |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 256 A / 220 ms  |         |         |

9. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

10. Measured at 30 °C.

|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 48  |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 178   |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 208   |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Specifications for 100 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>11</sup>   |         |         |
|        | Input voltage range of full load (V)                            | 304-456 <sup>12</sup>   | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 160   | 152     | 147     |
|        | Maximum input current (A)                                       | 200   | 190     | 190     |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 155   | 147     | 142     |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤125% for 10 minutes; ≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes; ≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 152   | 145     | 140     |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Load crest factor   | 2.5   |         |         |
|        | Output short circuit current (inverter)                         | 320 A/220 ms  |         |         |

11. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

12. Measured at 30 °C.

|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 60  |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 222   |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 260   |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Specifications for 150 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>13</sup>   |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>14</sup>   | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 240   | 228     | 220     |
|        | Maximum input current (A)                                       | 300   | 285     | 285     |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 232   | 220     | 212     |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 228   | 217     | 209     |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 480 A/220 ms  |         |         |

13. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

14. Measured at 30 °C.

|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 90  |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 333   |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 390   |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Specifications for 200 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>15</sup>   |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>16</sup>   | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 320   | 304     | 293     |
|        | Maximum input current (A)                                       | 400   | 380     | 380     |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 309   | 294     | 283     |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 304   | 289     | 279     |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Output short circuit current (inverter)                         | 640 A/220 ms  |         |         |

15. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

16. Measured at 30 °C.



|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 120   |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 444   |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 520   |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Specifications for 250 kW UPS

|        | Voltage (V)   | 380   | 400     | 415     |
|--------|---|---|---------|---------|
| Input  | Connections   | L1, L2, L3, N, PE (single mains)<br>L1, L2, L3, PE (dual mains) <sup>17</sup>   |         |         |
|        | Input voltage range at full load (V)                            | 304-456 <sup>18</sup>   | 320-460 | 332-477 |
|        | Frequency (Hz)  | 40-70   |         |         |
|        | Nominal input current (A)                                       | 400   | 380     | 367     |
|        | Maximum input current (A)                                       | 500   | 475     | 475     |
|        | Total harmonic distortion (THDI)                                | ≤ 3% for linear load  |         |         |
|        | Input power factor  | > 0.99 (full load)  |         |         |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Ramp-in   | Programmable and adaptive 1-40 seconds  |         |         |
|        | Protection  | Built-in backfeed protection and fuses  |         |         |
| Bypass | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Minimum bypass voltage (V)                                      | 342   | 360     | 374     |
|        | Maximum bypass voltage (V)                                      | 418   | 440     | 457     |
|        | Frequency (Hz)  | 50 or 60  |         |         |
|        | Frequency range (Hz)  | ±1 Hz, ±3 Hz, ±10 Hz (user selectable)  |         |         |
|        | Nominal bypass current (A)                                      | 386   | 367     | 354     |
|        | Maximum short circuit rating                                    | Rated conditional short-circuit current I <sub>cc</sub> = 35 kA<br>Device: Refer to Required Upstream Protection, page 32.  |         |         |
|        | Protection  | Dry contact signal for backfeed protection  |         |         |
| Output | Connections   | L1, L2, L3, N, PE   |         |         |
|        | Output voltage regulation                                       | ±1% (symmetrical load)<br>±3% (asymmetrical load)   |         |         |
|        | Overload capacity   | Normal operation: ≤110% for 60 minutes; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Bypass operation: ≤110% continuous; ≤125% for 10 minutes;<br>≤150% for 1 minute<br>Battery operation: ≤125% for 1 minute; ≤150% for 1 second |         |         |
|        | Output power factor   | 1   |         |         |
|        | Nominal output current (A)                                      | 380   | 361     | 348     |
|        | Total harmonic distortion (THDU)                                | 1% (linear load)<br>3% (non-linear load)  |         |         |
|        | Output frequency (Hz)   | 50/60 Hz bypass synchronized<br>50/60 Hz ± 0.1% free-running  |         |         |
|        | Slew rate (Hz/sec)  | Programmable to 0.25, 0.5, 1, 2, 4, 6 Hz/second   |         |         |
|        | Output performance classification (according to IEC/ EN62040-3) | VFI-SS-11   |         |         |
|        | Load power factor   | 0.7 leading to 0.7 lagging without derating   |         |         |
|        | Load crest factor   | 2.5   |         |         |
|        | Output short circuit current (inverter)                         | 800 A/220 ms  |         |         |

17. Common N with bypass. For dual mains systems with upstream 4-pole disconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.

18. Measured at 30 °C.

|         | Voltage (V)  | 380   | 400 | 415 |
|---------|--|---|-----|-----|
| Battery | Charging power in % of output power                          | 5% to 60% (selectable)                                      |     |     |
|         | Maximum charging power (kW)                                  | 150   |     |     |
|         | Nominal battery voltage (VDC)                                | 480 to 576  |     |     |
|         | Nominal float voltage (VDC)                                  | 545 to 654  |     |     |
|         | End of discharge voltage (full load) (VDC)                   | 384 to 461  |     |     |
|         | Temperature compensation (per cell)                          | -3.3 mV/°C/cell for T ≥ 25 °C<br>0 mV/°C/cell for T < 25 °C |     |     |
|         | Battery current at full load and nominal battery voltage (A) | 555   |     |     |
|         | Battery current at full load and minimum battery voltage (A) | 650   |     |     |
|         | Ripple current   | < 5% C20 (5-minute runtime)                                 |     |     |
|         | Battery test   | Manual/automatic (selectable)                               |     |     |
|         | Maximum short circuit rating                                 | 25 kA   |     |     |

## Required Upstream Protection

### DANGER

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

The upstream protection must use the required 3-pole breakers OR 4-pole breakers listed below. The use of 3-pole breaker or 4-pole breaker depends on your local and national regulations.

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

**NOTE:** For UPS systems whose ratings are not covered in the information provided below, choose the suitable 3-pole or 4-pole disconnect devices for upstream protection based on your specific configuration.

## Required 3-Pole Upstream Protection

| UPS rating      | 50 kW                          |                               | 100 kW                        |                               |
|-----------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|
|                 | Input                          | Bypass                        | Input                         | Bypass                        |
| Breaker type    | NSX100H TM100D<br>(C10H3TM100) | NSX100H TM80D<br>(C10H3TM080) | NSX250H TM200<br>(C25H3TM200) | NSX160H TM160<br>(C16H3TM160) |
| I <sub>o</sub>  | 100                            | 80                            | 200                           | 160                           |
| I <sub>r</sub>  | 100                            | 80                            | 200                           | 160                           |
| I <sub>sd</sub> | 800 (fixed)                    | 640 (fixed)                   | 5 - 10                        | 1250 (fixed)                  |

| UPS rating      | 150 kW                             |                                  | 200 kW                             |                                    | 250 kW                             |                                    |
|-----------------|------------------------------------|----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
|                 | Input                              | Bypass                           | Input                              | Bypass                             | Input                              | Bypass                             |
| Breaker type    | NSX400H<br>MiC.2.3<br>(C40H32D400) | NSX250H<br>TM250<br>(C25H3TM250) | NSX400H<br>MiC.2.3<br>(C40H32D400) | NSX400H<br>MiC.2.3<br>(C40H32D400) | NSX630H<br>MiC.2.3<br>(C63H32D630) | NSX400H<br>MiC.2.3<br>(C40H32D400) |
| I <sub>o</sub>  | 320                                | 250                              | 400                                | 320                                | 500                                | 400                                |
| I <sub>r</sub>  | 0.95                               | 250                              | 1                                  | 1                                  | 1                                  | 1                                  |
| I <sub>sd</sub> | 1.5 - 10                           | 5 - 10                           | 1.5 - 10                           | 1.5 - 10                           | 1.5 - 10                           | 1.5 - 10                           |

## Required 4-Pole Upstream Protection

| UPS rating      | 50 kW                          |                               | 100 kW                        |                                 |
|-----------------|--------------------------------|-------------------------------|-------------------------------|---------------------------------|
|                 | Input                          | Bypass                        | Input                         | Bypass                          |
| Breaker type    | NSX100H TM100D<br>(C10H4TM100) | NSX160H TM160<br>(C16H4TM160) | NSX250H TM200<br>(C25H4TM200) | NSX400H MiC.2.3<br>(C40H42D400) |
| I <sub>o</sub>  | 100                            | 160                           | 200                           | 280                             |
| I <sub>r</sub>  | 100                            | 0.8                           | 200                           | 0.95                            |
| I <sub>sd</sub> | 800 (fixed)                    | 1250 (fixed)                  | 1.5 - 10                      | 1.5 - 10                        |

| UPS rating     | 150 kW                             |                                    | 200 kW                             |                                    | 250 kW                             |                                    |
|----------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
|                | Input                              | Bypass                             | Input                              | Bypass                             | Input                              | Bypass                             |
| Breaker type   | NSX400H<br>MiC.2.3<br>(C40H42D400) | NSX400H<br>MiC.2.3<br>(C40H42D400) | NSX400H<br>MiC.2.3<br>(C40H42D400) | NSX400H<br>MiC.2.3<br>(C40H42D400) | NSX630H<br>MiC.2.3<br>(C63H42D630) | NSX400H<br>MiC.2.3<br>(C40H42D400) |
| I <sub>o</sub> | 320                                | 280                                | 400                                | 320                                | 500                                | 400                                |

| UPS rating      | 150 kW   |          | 200 kW   |          | 250 kW   |          |
|-----------------|----------|----------|----------|----------|----------|----------|
|                 | Input    | Bypass   | Input    | Bypass   | Input    | Bypass   |
| I <sub>r</sub>  | 0.95     | 0.95     | 1        | 1        | 1        | 1        |
| I <sub>sd</sub> | 1.5 - 10 | 1.5 - 10 | 1.5 - 10 | 1.5 - 10 | 1.5 - 10 | 1.5 - 10 |

## Recommended Cables 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 mm<sup>2</sup>.

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

**NOTE:** Overcurrent protection is to be provided by external devices..

Cable sizes in this manual are based on table A.52-5 of IEC 60364-5-52 with the following assertions:

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

PE size is based on table 54.3 of IEC 60364-5-54.

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

**NOTE:** Battery cables are sized according to 40 battery blocks. Contact Schneider Electric for cable sizes for systems with more than 40 battery blocks.

**NOTE:** It is recommended to use the provided screws to connect cables for clients.

**NOTE:** For UPS systems whose ratings are not covered in the information provided below, choose the suitable cable sizes based on your specific configuration.

## 50 kW UPS

|         | Cable size per phase (mm <sup>2</sup> )                                    | Neutral cable size (mm <sup>2</sup> ) | PE cable size (mm <sup>2</sup> ) |
|---------|--|---------------------------------------|----------------------------------|
| Input   | 25   | 35                                    | 16                               |
| Bypass  | 16 (for 3-pole upstream protection)<br>35 (for 4-pole upstream protection) | 35                                    | 16                               |
| Output  | 16   | 35                                    | 16                               |
| Battery | 35   | 35 <sup>19</sup>                      | 16                               |

19. Only applicable for battery solutions with midpoint.

## 100 kW UPS

|         | Cable size per phase (mm <sup>2</sup> )  | Neutral cable size (mm <sup>2</sup> ) | PE cable size (mm <sup>2</sup> ) |
|---------|--|---------------------------------------|----------------------------------|
| Input   | 70   | 2 x 70                                | 35                               |
| Bypass  | 70 (for 3-pole upstream protection)<br>2 x 70 (for 4-pole upstream protection) | 2 x 70                                | 35                               |
| Output  | 70   | 2 x 70                                | 35                               |
| Battery | 95   | 95 <sup>20</sup>                      | 50                               |

20. Only applicable for battery solutions with midpoint.

## 150 kW UPS

|         | Cable size per phase (mm <sup>2</sup> )   | Neutral cable size (mm <sup>2</sup> ) | PE cable size (mm <sup>2</sup> ) |
|---------|---|---------------------------------------|----------------------------------|
| Input   | 120   | 2 x 70                                | 70                               |
| Bypass  | 120 (for 3-pole upstream protection)<br>2 x 70 (for 4-pole upstream protection) | 2 x 70                                | 70                               |
| Output  | 120   | 2 x 70                                | 70                               |
| Battery | 2 x 70  | 2 x 70 <sup>21</sup>                  | 70                               |

## 200 kW UPS

|         | Cable size per phase (mm <sup>2</sup> ) | Neutral cable size (mm <sup>2</sup> ) | PE cable size (mm <sup>2</sup> ) |
|---------|---|---------------------------------------|----------------------------------|
| Input   | 2 x 95                                  | 2 x 95                                | 95                               |
| Bypass  | 2 x 70                                  |                                       | 70                               |
| Output  | 2 x 70                                  | 2 x 70                                | 70                               |
| Battery | 2 x 120                                 | 2 x 120 <sup>22</sup>                 | 120                              |

## 250 kW UPS

|         | Cable size per phase (mm <sup>2</sup> ) | Neutral cable size (mm <sup>2</sup> ) | PE cable size (mm <sup>2</sup> ) |
|---------|---|---------------------------------------|----------------------------------|
| Input   | 2 x 120                                 | 2 x 120                               | 120                              |
| Bypass  | 2 x 95                                  |                                       | 95                               |
| Output  | 2 x 95                                  | 2 x 95                                | 95                               |
| Battery | 2 x 150                                 | 2 x 150 <sup>22</sup>                 | 150                              |

## Recommended Bolt and Lug Sizes

### Copper

| Cable size (mm <sup>2</sup> ) | Bolt size | Cable lug type |
|-------------------------------|-----------|----------------|
| 16                            | M10x40 mm | TLK 16-10      |
| 25                            | M10x40 mm | TLK 25-10      |
| 35                            | M10x40 mm | TLK 35-10      |
| 50                            | M10x40 mm | TLK 50-10      |
| 70                            | M10x40 mm | TLK 70-10      |
| 95                            | M10x40 mm | TLK 95-10      |
| 120                           | M10x40 mm | TLK 120-10     |
| 150                           | M10x40 mm | TLK 150-10     |
| 185                           | M10x40 mm | TLK 185-10     |

21. Only applicable for battery solutions with midpoint.

22. Only applicable for battery solutions with midpoint.

## Torque Specifications

| Bolt size | Torque  |
|-----------|---------|
| M4        | 1.7 Nm  |
| M6        | 5 Nm    |
| M8        | 17.5 Nm |
| M10       | 30 Nm   |
| M12       | 50 Nm   |



## Requirements for a Third Party Battery Solution

Battery breaker boxes from Schneider Electric are recommended for the battery interface. Please contact Schneider Electric for more information.

### Third Party Battery Circuit Breaker Requirements

**⚠️⚠️ DANGER**

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

- All selected battery breakers must be equipped with instantaneous trip functionality with an undervoltage release coil or a shunt trip release coil.
- Trip delay must be set to zero on all battery breakers.

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

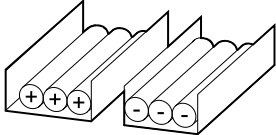
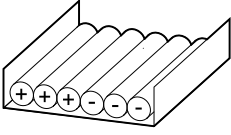
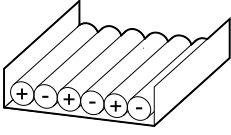
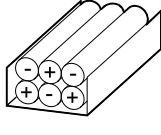
**NOTE:** There are more factors to consider when selecting a battery circuit breaker than the requirements listed below. Please contact Schneider Electric for more information.

#### Design Requirements for a Battery Circuit Breaker

|  |   |
|--|---|
| Battery circuit breaker rated DC voltage > Normal battery voltage          | The normal voltage of the battery configuration is defined as the highest nominal occurring battery voltage. This can be equivalent to the float voltage which may be defined as <b>number of battery blocks x number of cells x cell float voltage</b> . |
| Battery circuit breaker rated DC current > Rated discharge battery current | This current is controlled by the UPS and must include maximum discharge current. This will typically be the current at the end of discharge (minimum operation DC voltage or in overload condition or a combination).                                    |
| DC landings  | Two DC landings for DC cables (DC+ and DC-) are required.   |
| AUX switches for monitoring  | One AUX switch must be installed in each battery circuit breaker and connected to the UPS. The UPS can monitor up to four battery circuit breakers.   |
| Short-circuit breaking capability  | The short-circuit breaking capability must be higher than the short-circuit DC current of the (largest) battery configuration.  |
| Minimum trip current   | The minimum short-circuit current to trip the battery circuit breaker must match the (smallest) battery configuration, to make the breaker trip in case of a short circuit, up to the end of its life time.   |
| Common battery solution  | Individual battery circuit breaker for each UPS in the parallel system.   |

## Guidance for Organizing Battery Cables

- NOTE:** For 3rd party batteries, use only high rate batteries for UPS applications.
- NOTE:** When the battery bank is placed remotely, the organizing of the cables is important to reduce voltage drop and inductance. The distance between the battery bank and the UPS must not exceed 200 m (656 ft). Contact Schneider Electric for installations with a longer distance.
- NOTE:** To minimize the risk of electromagnetic radiation, it is highly recommended to follow the below guidance and to use grounded metallic tray supports.

| Cable Length |  |  |  |  |
|--------------|---|---|--|---|
| <30 m        | Not recommended   | Acceptable  | Recommended  | Recommended   |
| 31–75 m      | Not recommended   | Not recommended   | Acceptable   | Recommended   |
| 76–150 m     | Not recommended   | Not recommended   | Acceptable   | Recommended   |
| 151–200 m    | Not recommended   | Not recommended   | Not recommended  | Recommended   |

## Environment

|                             | Operating   | Storage              |
|-----------------------------|---|----------------------|
| Temperature                 | 0 °C to 50 °C with load derating above 40 °C <sup>23</sup>  | -25 °C to 55 °C      |
| Relative humidity           | 0-95% non-condensing  | 0-95% non-condensing |
| Elevation                   | Designed for operation in 0-3000 m elevation.<br><br>Derating required from 1000-3000 m with forced air cooling:<br>Up to 1000 m: 1.000<br>Up to 1500 m: 0.975<br>Up to 2000 m: 0.950<br>Up to 2500 m: 0.925<br>Up to 3000 m: 0.900 |                      |
| Audible noise <sup>24</sup> | 68 dB at 70% load<br><br>74 dB at 100% load   |                      |
| Protection class            | IP20  |                      |
| Color                       | Black   |                      |

## Compliance

|                      |  |
|----------------------|--|
| Safety               | IEC 62040-1:2017, Edition 2.0, Uninterruptible power systems (UPS) – Part 1: Safety requirements   |
| EMC                  | IEC 62040-2:2016, Edition 3.0, Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements.<br>IEC 62040-2:2005-10, Edition 2.0, Uninterruptible Power Systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements |
| Performance          | IEC 62040-3: 2021-03, Edition 3.0, Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements  |
| Transportation       | IEC TR 60721-4-2: 2001 Level 2M2   |
| Pollution degree     | 2  |
| Overvoltage category | III  |
| Earthing system      | TN-S, TN-C, TN-C-S, TT   |
| Protective class     | I  |
| Arc flash safety     | IEC TR 61641: 2014 Edition 3.0   |

23. For temperatures between 40 °C and 50 °C, derate the load power rating to 75%.

24. Values are measured for the maximum configuration.

## UPS Weights and Dimensions

### UPS with One Internal Switch

| Type                         | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------|-----------|-----------|----------|----------|
| 50 kW                        | 216       | 1991      | 600      | 850      |
| 50 kW with N+1 power module  | 244       | 1991      | 600      | 850      |
| 100 kW                       | 244       | 1991      | 600      | 850      |
| 100 kW with N+1 power module | 272       | 1991      | 600      | 850      |
| 150 kW                       | 272       | 1991      | 600      | 850      |
| 150 kW with N+1 power module | 300       | 1991      | 600      | 850      |
| 200 kW                       | 300       | 1991      | 600      | 850      |
| 200 kW with N+1 power module | 328       | 1991      | 600      | 850      |
| 250 kW                       | 328       | 1991      | 600      | 850      |
| 250 kW with N+1 power module | 356       | 1991      | 600      | 850      |

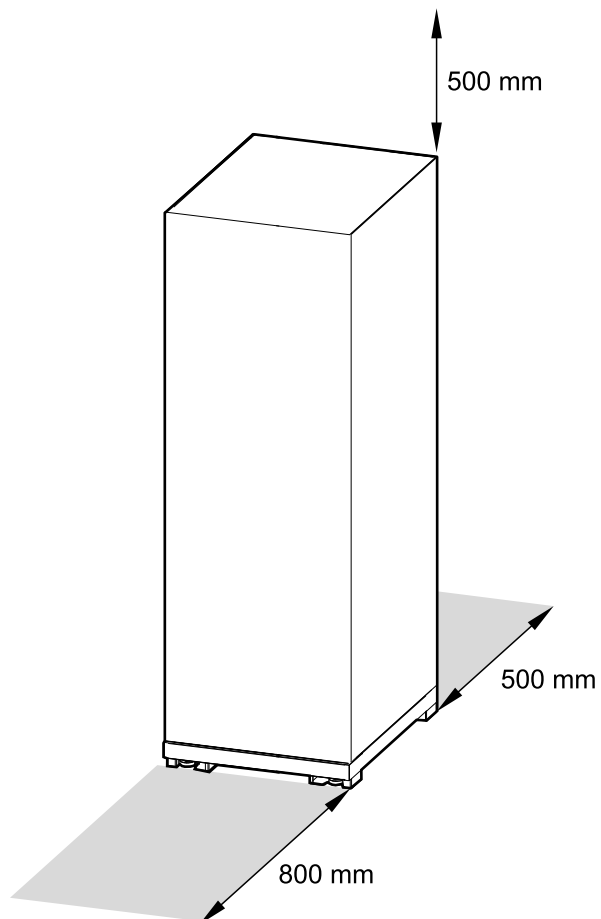
### UPS with Four Internal Switches

| Type                         | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------|-----------|-----------|----------|----------|
| 50 kW                        | 251       | 1991      | 600      | 850      |
| 50 kW with N+1 power module  | 279       | 1991      | 600      | 850      |
| 100 kW                       | 279       | 1991      | 600      | 850      |
| 100 kW with N+1 power module | 307       | 1991      | 600      | 850      |
| 150 kW                       | 307       | 1991      | 600      | 850      |
| 150 kW with N+1 power module | 335       | 1991      | 600      | 850      |
| 200 kW                       | 335       | 1991      | 600      | 850      |
| 200 kW with N+1 power module | 363       | 1991      | 600      | 850      |
| 250 kW                       | 363       | 1991      | 600      | 850      |
| 250 kW with N+1 power module | 391       | 1991      | 600      | 850      |

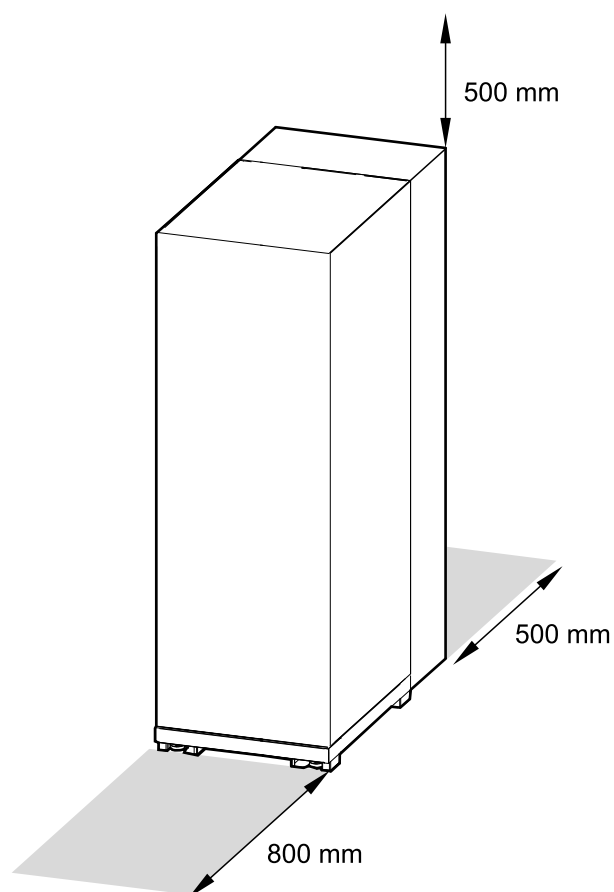
## Clearance

**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.

**UPS**



**UPS with Depth Adapter**



**NOTE:** 500 mm rear clearance is also required when the depth adapter is installed with the UPS.

# Overview

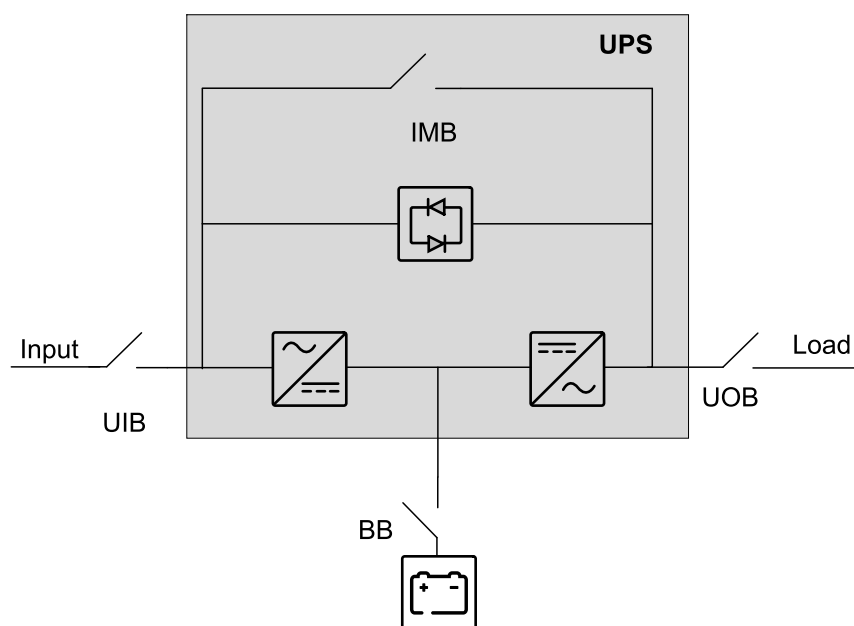
## Single System Overview

### UPS with One Internal Switch

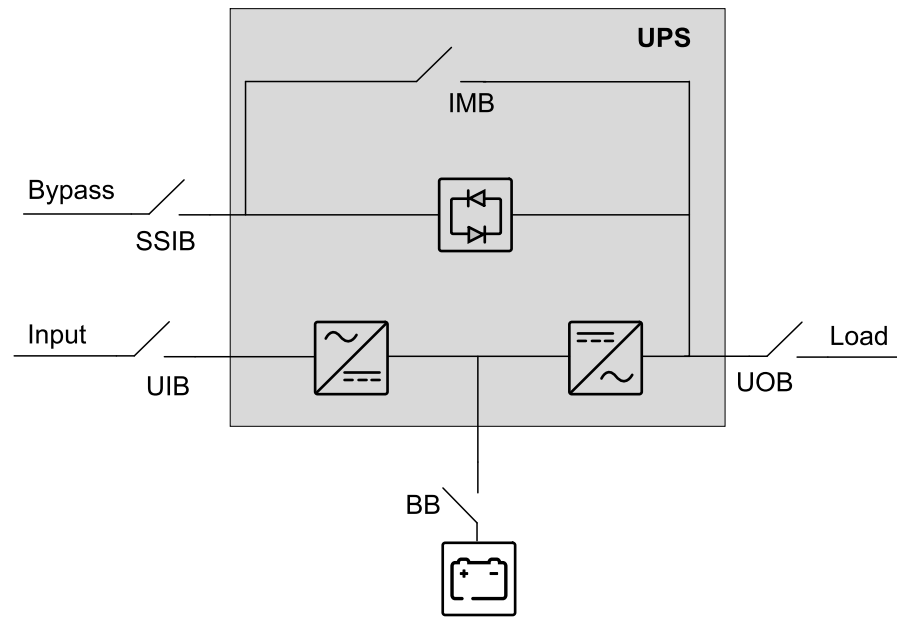
|      |  |
|------|--|
| UIB  | Unit input disconnect device           |
| SSIB | Static switch input disconnect device  |
| UOB  | Unit output disconnect device          |
| IMB  | Internal maintenance disconnect device |
| BB   | Battery disconnect device              |

**NOTE:** In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

#### Single System – Single Mains (One Internal Switch)



### Single System – Dual Mains (One Internal Switch)

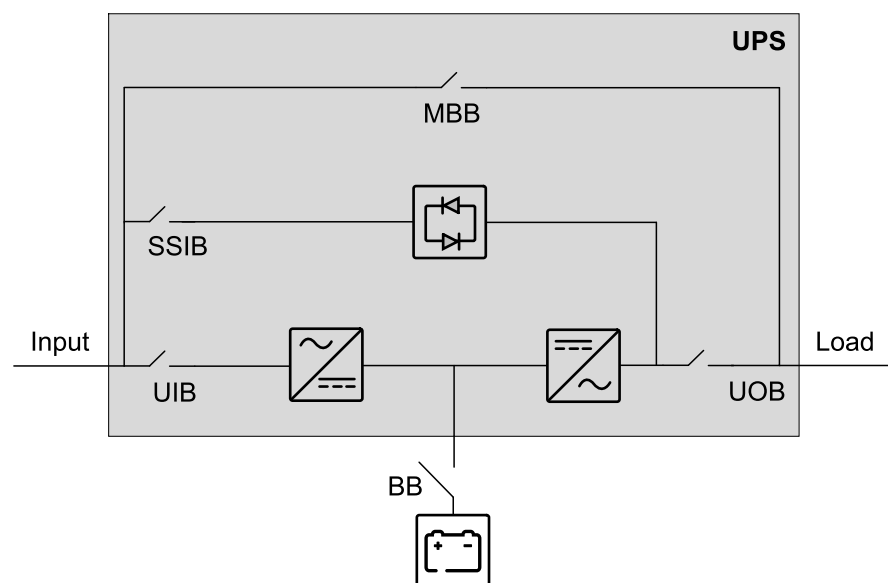


## UPS with Four Internal Switches

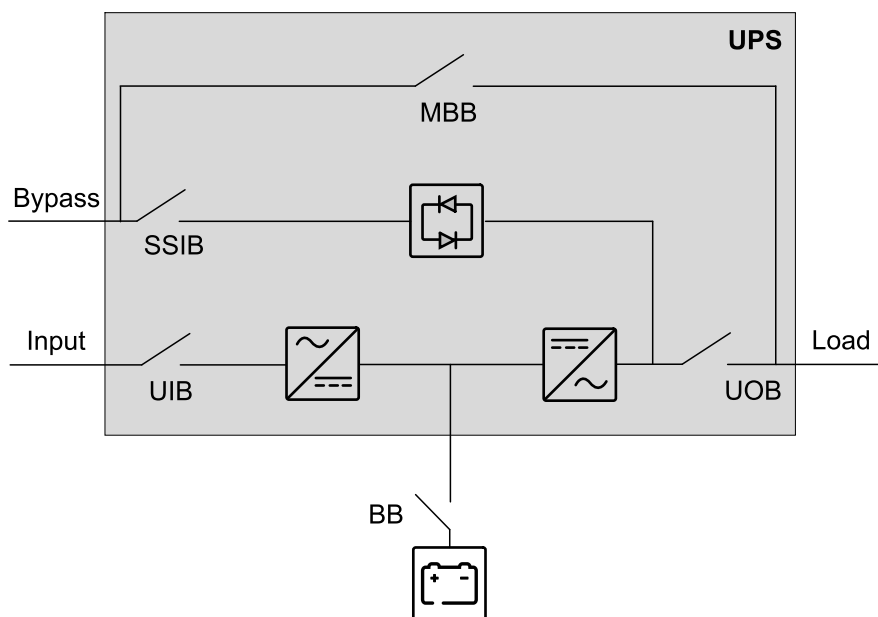
Maintenance bypass disconnect device

|      |                                       |
|------|---------------------------------------|
| UIB  | Unit input disconnect device          |
| SSIB | Static switch input disconnect device |
| UOB  | Unit output disconnect device         |
| MBB  | Maintenance bypass disconnect device  |
| BB   | Battery disconnect device             |

### Single System – Single Mains (Four Internal Switches)



### Single System – Dual Mains (Four Internal Switches)



## Parallel System Overview

The UPS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy.

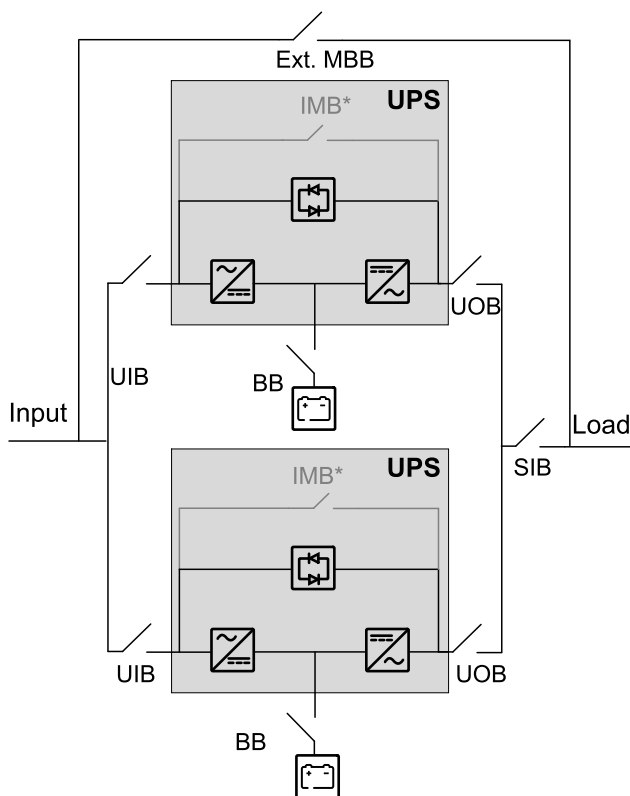
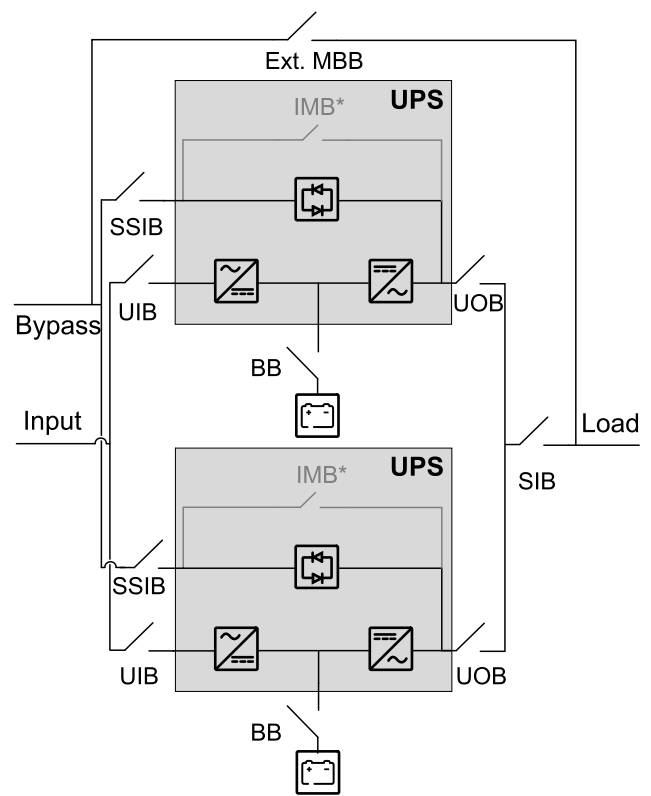
**NOTE:** In a parallel system, an external maintenance bypass disconnect device (Ext. MBB) must be provided and the internal maintenance disconnect device IMB and MBB (marked with an \* in the diagrams) must be padlocked in the open position.

## UPS with One Internal Switch

|          |   |
|----------|---|
| UIB      | Unit input disconnect device                  |
| SSIB     | Static switch input disconnect device         |
| UOB      | Unit output disconnect device                 |
| SIB      | System isolation disconnect device            |
| BB       | Battery disconnect device                     |
| IMB      | Internal maintenance disconnect device        |
| Ext. MBB | External maintenance bypass disconnect device |

**NOTE:** In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.



**Parallel System – Single Mains (One Internal Switch)****Parallel System – Dual Mains (One Internal Switch)**

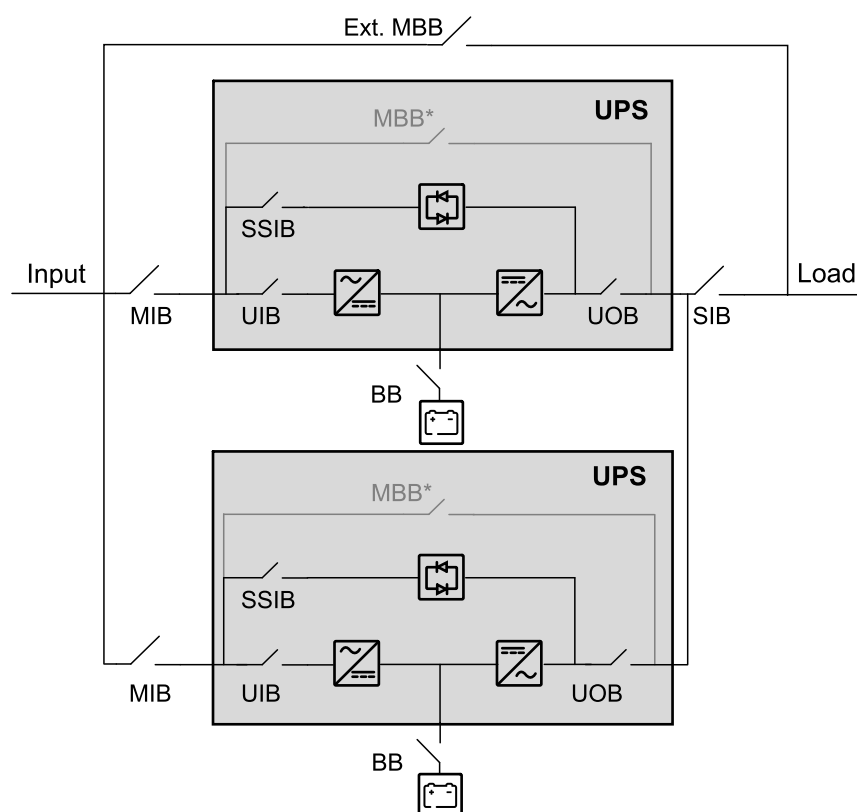
## UPS with Four Internal Switches

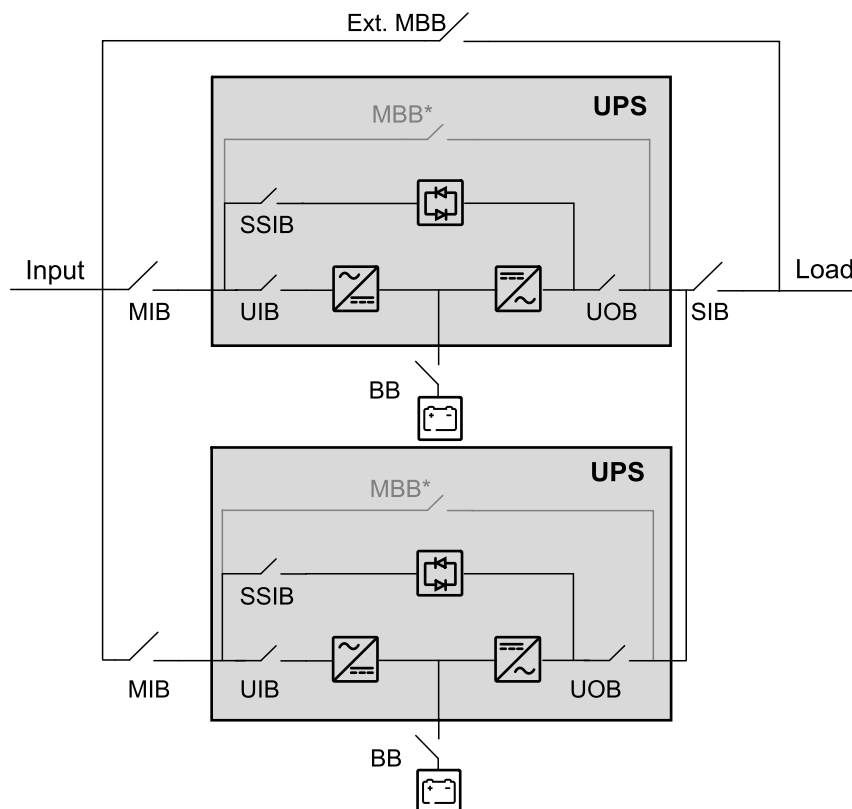
|          |   |
|----------|---|
| UIB      | Unit input disconnect device                  |
| SSIB     | Static switch input disconnect device         |
| UOB      | Unit output disconnect device                 |
| SIB      | System isolation disconnect device            |
| BIB      | Bypass input disconnect device                |
| MIB      | Main input disconnect device                  |
| BB       | Battery disconnect device                     |
| MBB      | Maintenance bypass disconnect device          |
| Ext. MBB | External maintenance bypass disconnect device |

**NOTE:** In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

The UPS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy.

### Parallel System – Single Mains (Four Internal Switches)



**Parallel System – Dual Mains (Four Internal Switches)**

# Installation Procedure

## DANGER

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

The UPS must be secured against movement. Perform one of the following actions/procedures once the UPS is in its final position:

- Reinstall the front transportation bracket on the UPS and mount it to the floor, OR
- Install the seismic anchoring kit.

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

## WARNING

### TILTING HAZARD

The cabinet is top heavy - move with care and use ramps over uneven floors.

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

1. Perform one of the following procedures:
  - Without seismic anchoring: Position the UPS, page 49, or
  - With seismic anchoring: Install the Seismic Anchoring (Option), page 51.
2. Perform one of the following procedures:
  - Top cable entry: Prepare the UPS for Top Cable Entry, page 55, or
  - Bottom cable entry: Follow the installation manual provided with the bottom entry cabinet.
3. **Only for TN-C earthing system:** Prepare for TN-C Earthing System, page 59.
4. **Only for UPS with one internal switch:** Install the Neutral Disconnection Kit (Option), page 60.
5. Perform one of the following procedures:
  - Connect the Power Cables for the UPS with One Internal Switch, page 62, or
  - Connect the Power Cables for the UPS with Four Internal Switches, page 65.
6. Connect the Signal Cables, page 69.
7. Connect the Signal Cables from Switchgear and Third-Party Auxiliary Products, page 72.
8. Connect the Modbus Cables, page 75.
9. **Only for parallel system:** Connect the PBUS Cables, page 77.
10. Install the Power Module(s), page 78.
11. Install the Redundant Intelligence Module (RIM) Kit (Option), page 80.
12. Final Installation, page 86.

For moving or decommissioning the UPS after installation has been completed, see Decommission or Move the UPS to a New Location, page 88.

## Position the UPS

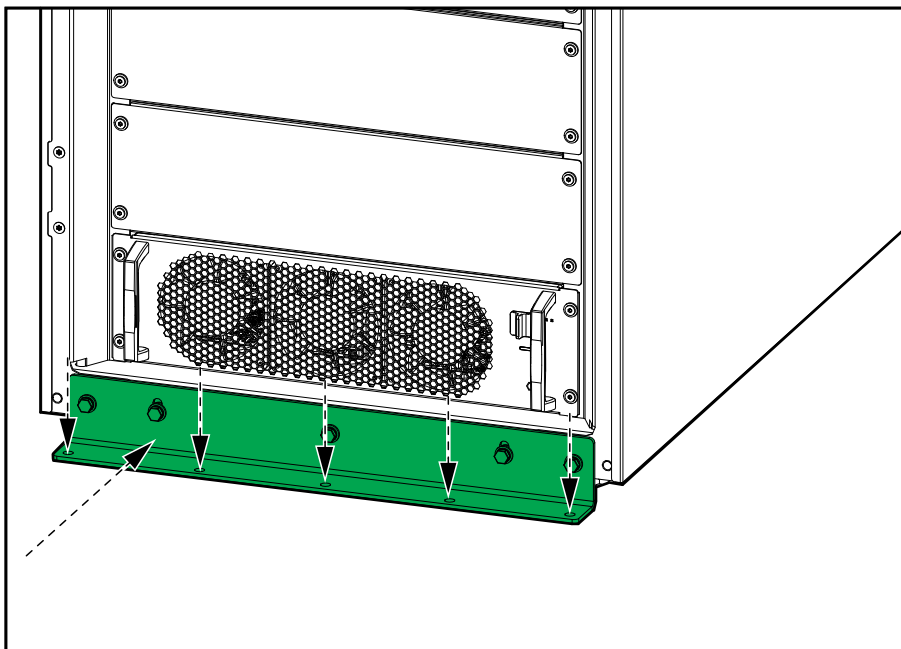
### **⚡⚠ DANGER**

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

The UPS must be secured against movement. Once the UPS is in its final position, reinstall the front and rear transportation brackets on the UPS and mount them to the floor.

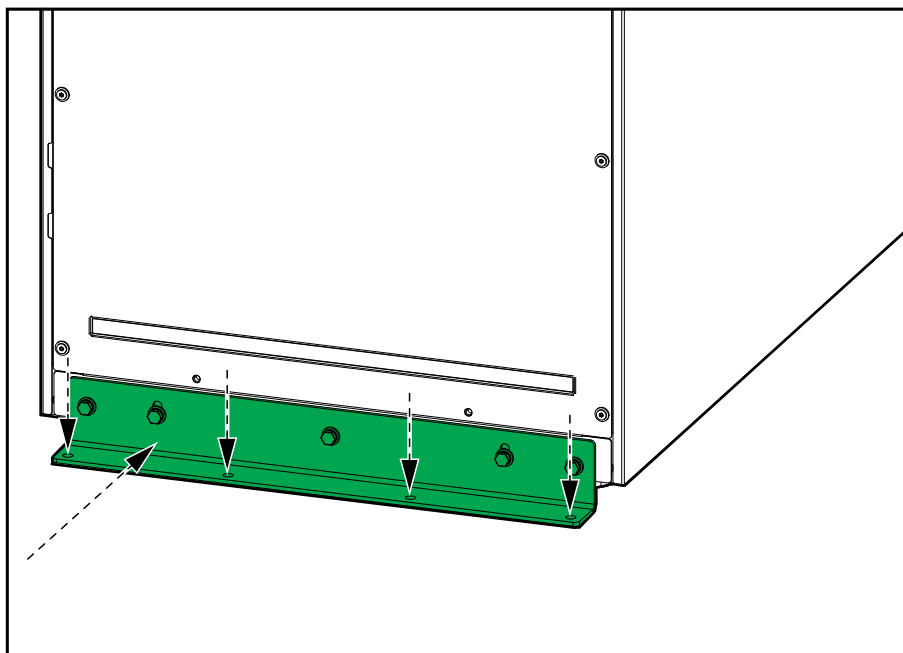
**Failure to follow these instructions will result in death or serious injury.**

1. Push the UPS into the final position.
2. Lower the front and rear feet on the UPS with a wrench until they connect with the floor. The casters must not have contact with the floor. Use a bubble-leveler to check that the UPS is level.
3. Reinstall the front transportation bracket on the UPS and mount it to the floor. Use appropriate hardware for the floor type – the hole diameter in the bracket is  $\varnothing 10$  mm. The requirement is M8 strength grade 8.8 hardware.



4. Reinstall the rear transportation bracket on the UPS and mount it to the floor. Use appropriate hardware for the floor type – the hole diameter in the bracket is  $\varnothing 10$  mm. The requirement is M8 strength grade 8.8 hardware.

#### Rear View



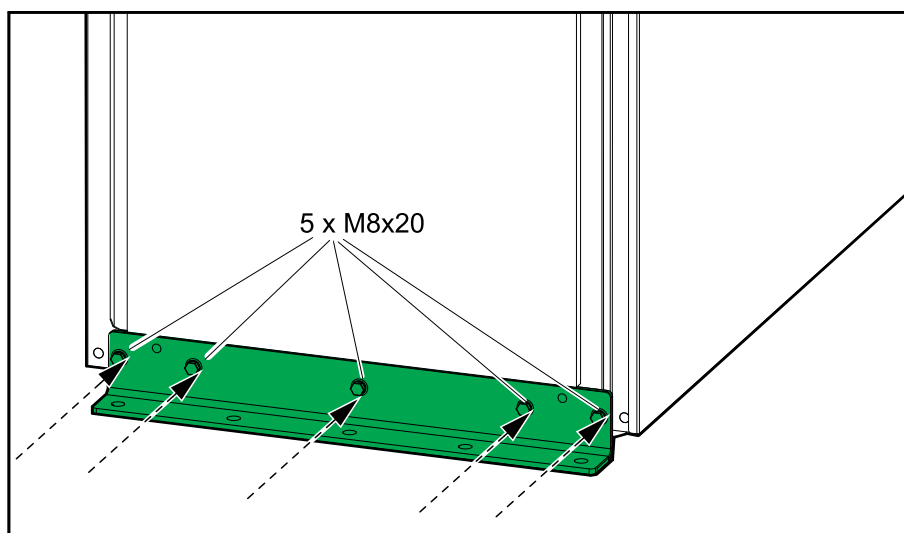
## Install the Seismic Anchoring (Option)

**NOTE:** Use the optional seismic kit SP3OPT005 for this procedure.

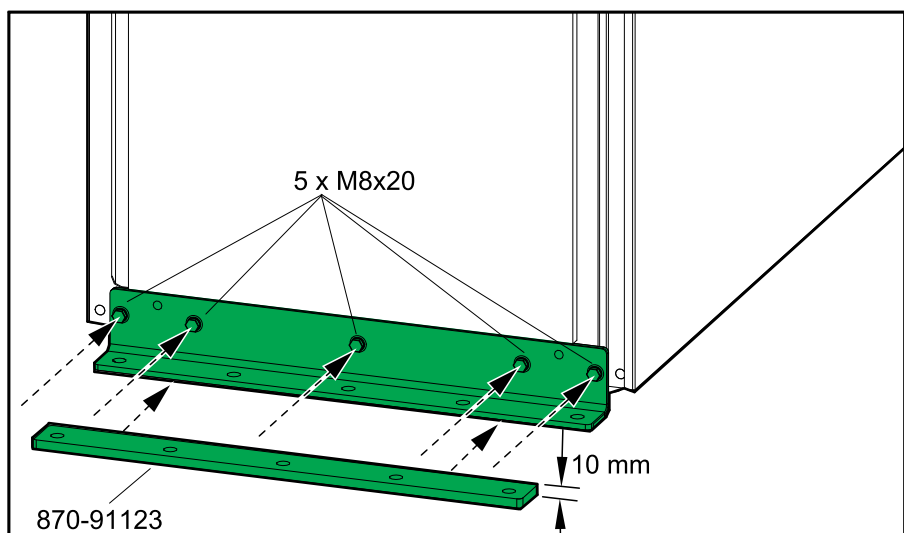
1. Push the UPS into the final position.
2. Install the rear anchoring bracket on the UPS with the provided M8 x 20 bolts.

**Option:** Use the shimming sheet (870-91123) for alignment with a two meter tall rack.

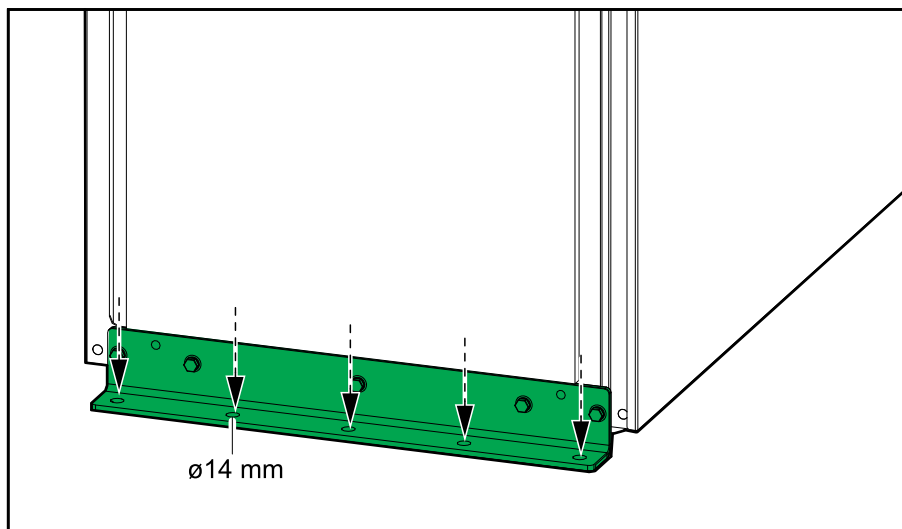
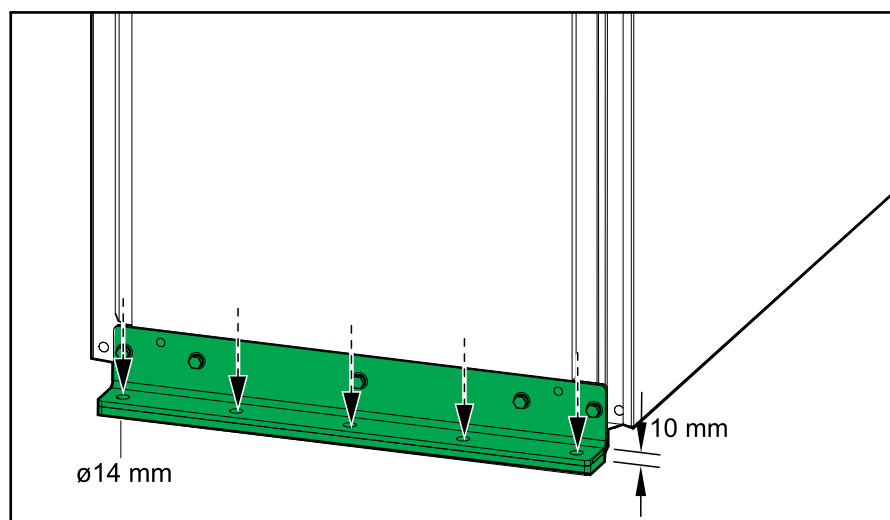
### Rear View (without Shimming Sheet)



### Rear View (with Shimming Sheet)



3. Mount the rear anchoring bracket to the floor. Use appropriate hardware for the floor type – the hole diameter in the rear anchors is  $\varnothing 14$  mm. The requirement is M12 strength grade 8.8 hardware.

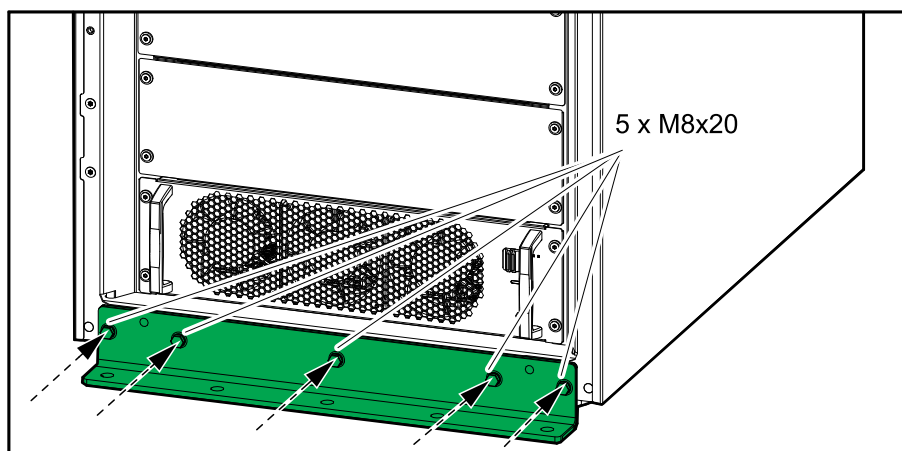
**Rear View (without Shimming Sheet)****Rear View (with Shimming Sheet)**



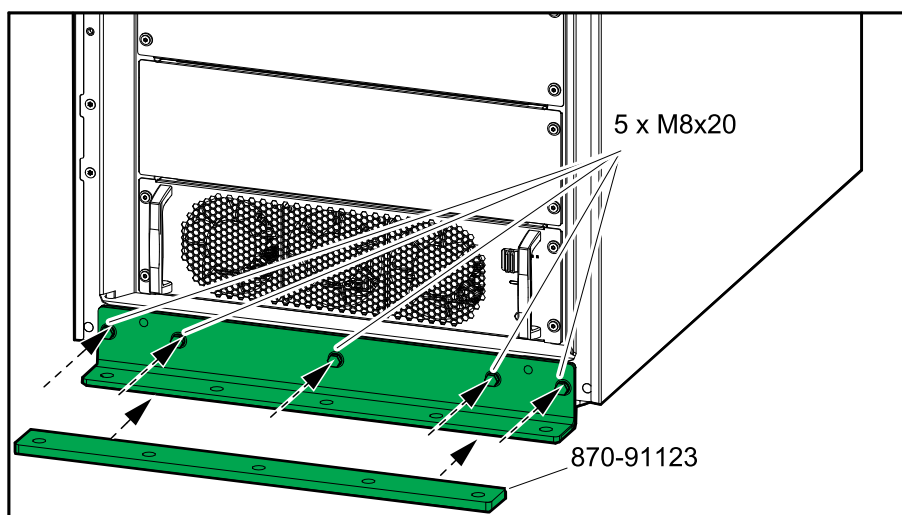
4. Install the front anchoring bracket on the UPS and mount it to the floor. Use appropriate hardware for the floor type – the hole diameter in the rear anchors is  $\varnothing 14$  mm. The requirement is M12 strength grade 8.8 hardware.

**Option:** Use the shimming sheet (870-91123) for alignment with a two meter tall rack.

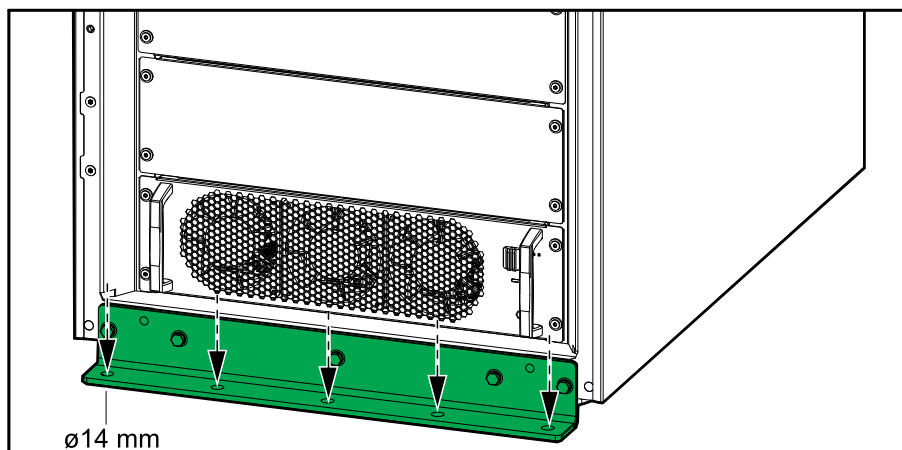
**Front View (without Shimming Sheet)**

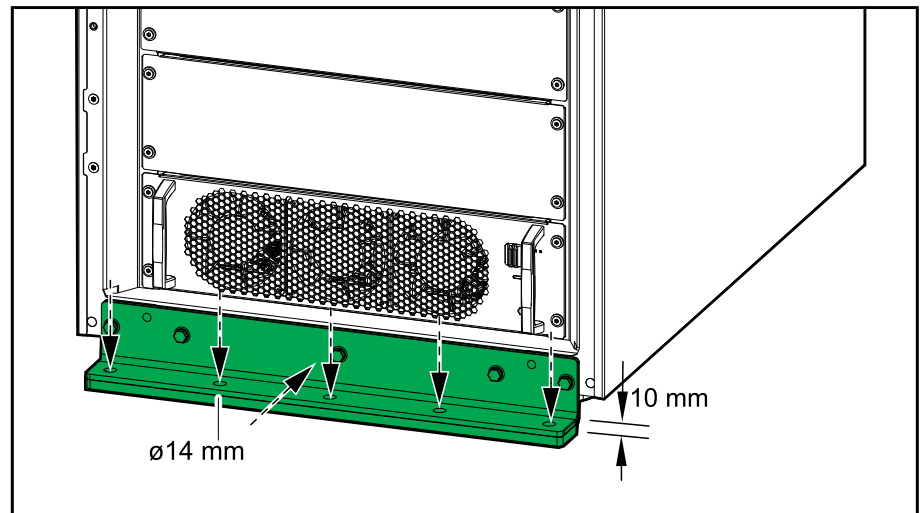


**Front View (with Shimming Sheet)**



**Front View (without Shimming Sheet)**



**Front View (with Shimming Sheet)**

# Prepare the UPS for Top Cable Entry

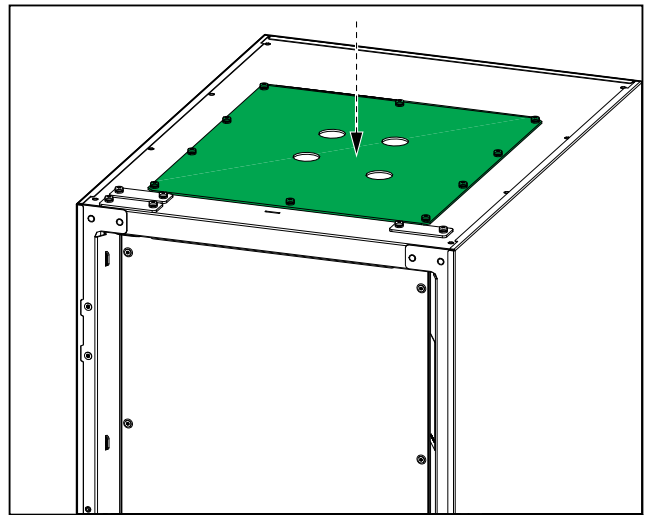
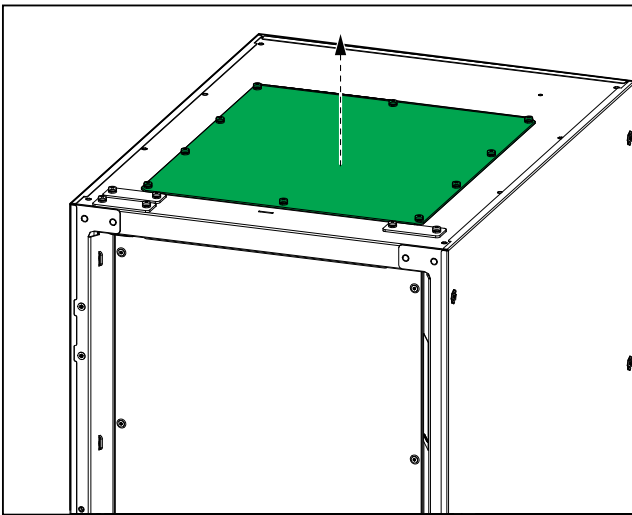
## **⚡⚠ DANGER**

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

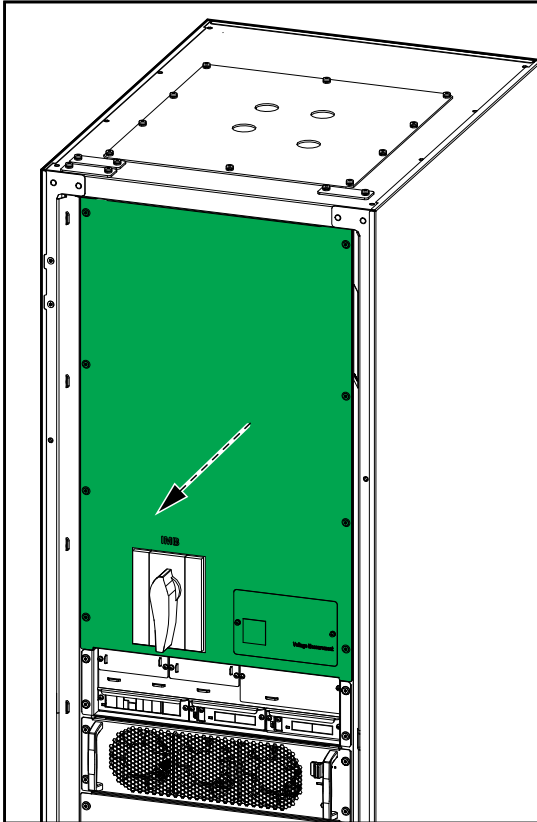
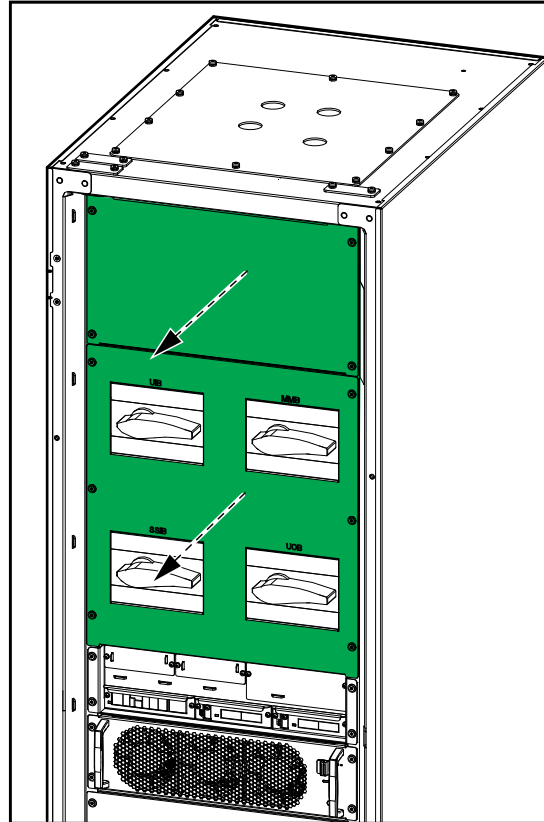
Do not drill or punch holes with the gland plates installed and do not drill or punch holes in close proximity to the cabinet.

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

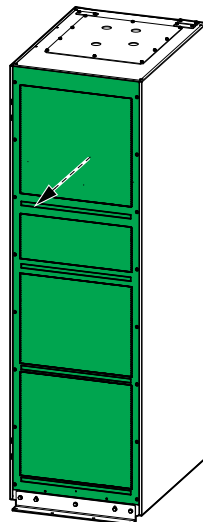
1. Prepare for power cables:
  - a. Remove the gland plate from the top of the UPS.
  - b. Drill/punch holes for power cables or glands/grommets in the gland plate. Install glands/grommets (not provided), if applicable.
  - c. Reinstall the gland plate.



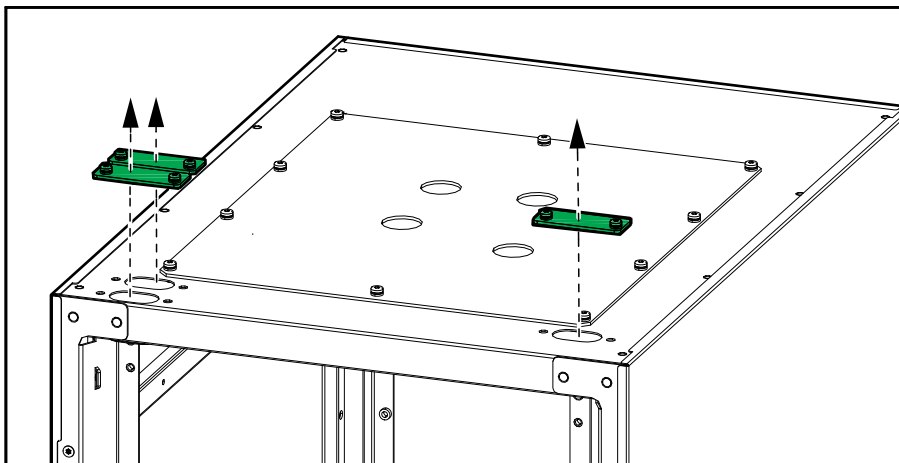
2. Remove the front inner cover(s) from the UPS.

**UPS with One Internal Switch****UPS with Four Internal Switches**

3. Remove the rear panel from the UPS.

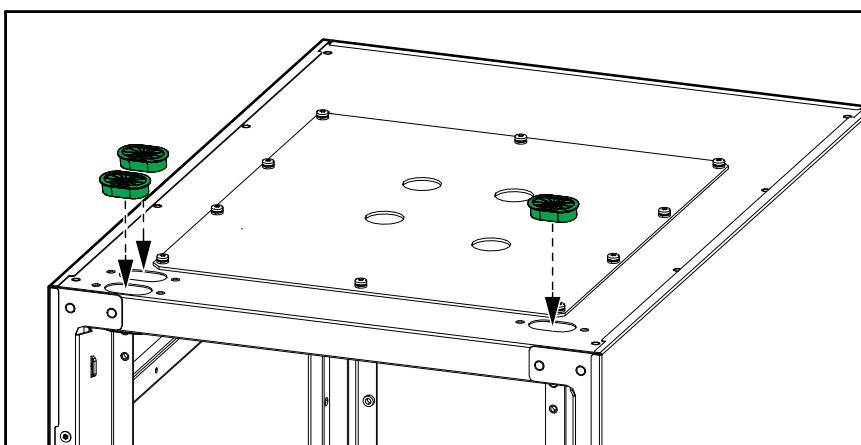
**Rear View**

4. Remove the signal cable covers from the top of the UPS.

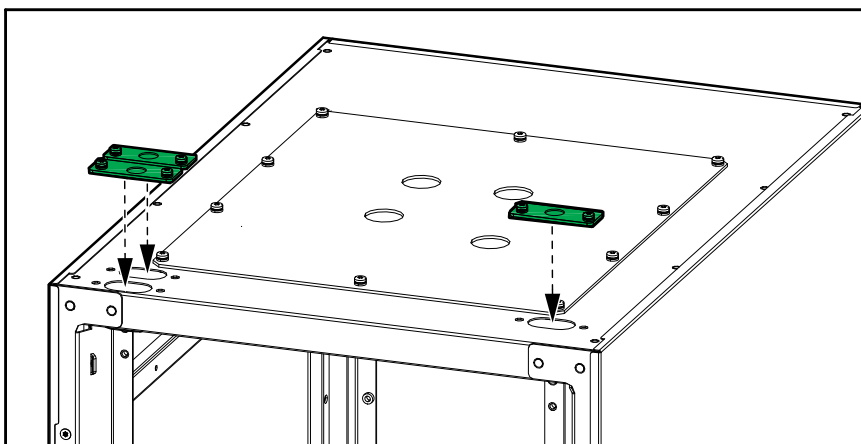


5. Perform one of the following:

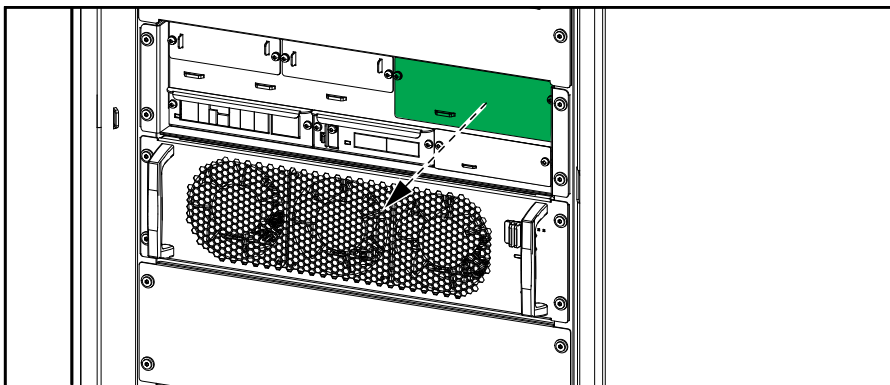
- Install the provided cable brush plugs from the hardware kit, OR



- Drill holes in the signal cable covers. Install glands/grommets (not provided) if applicable. Reinstall the signal cable covers.

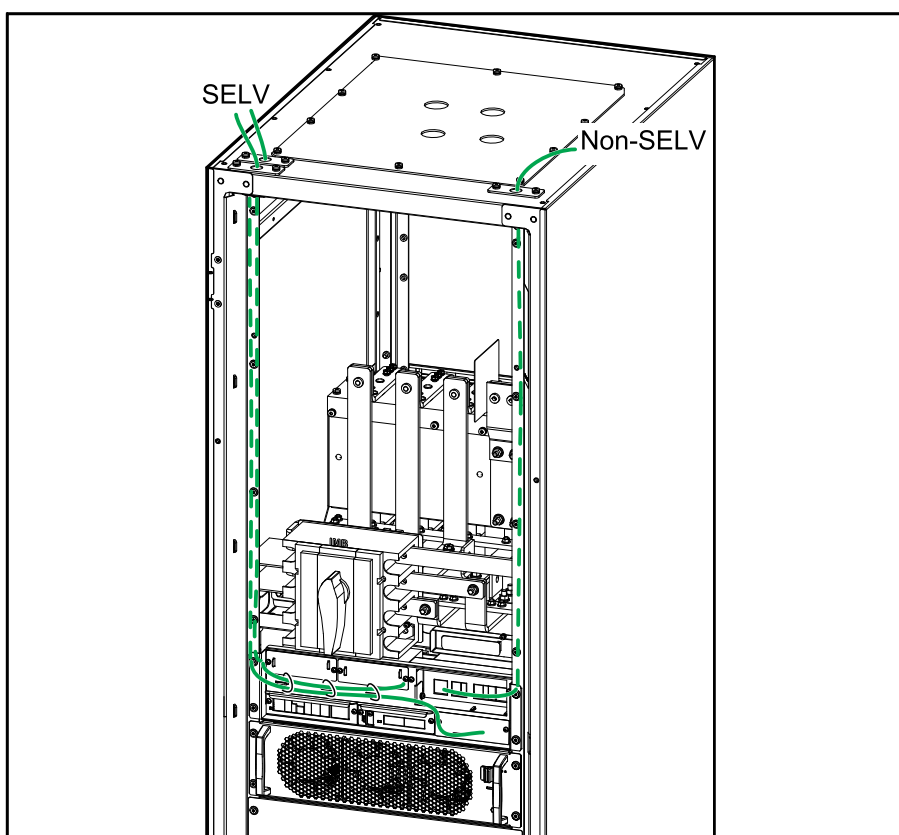


6. Remove the cover from the signal connection terminals.



7. Route the signal cables as shown to separate the Class 2/SELV cables from the non-Class 2/non-SELV cables.

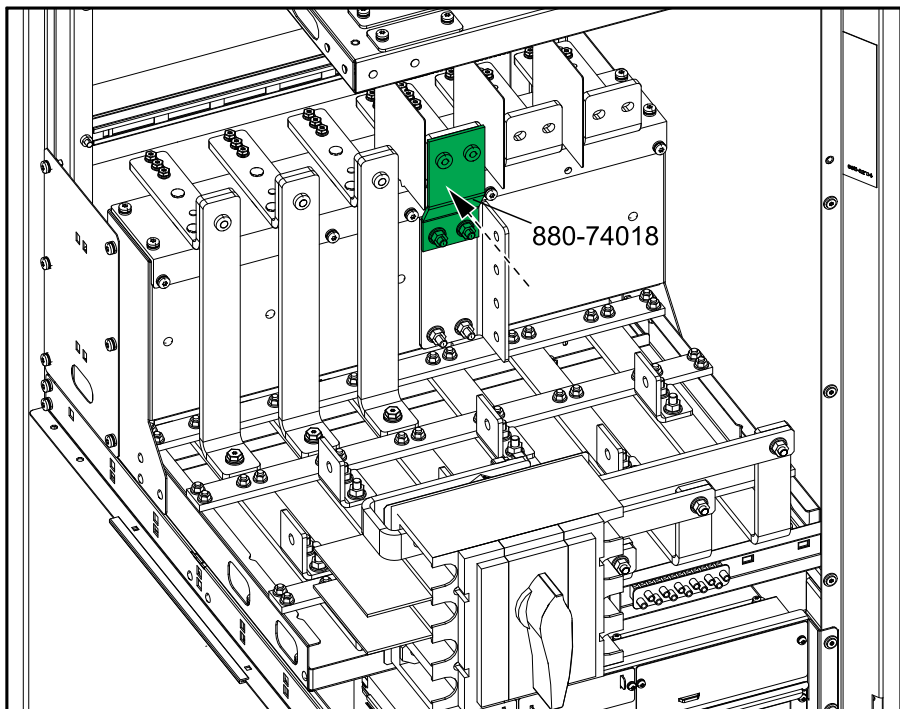
**NOTE:** For more information about the locations of Class 2/SELV and non-Class 2/non-SELV cables, see [Connect the Signal Cables](#), page 69.



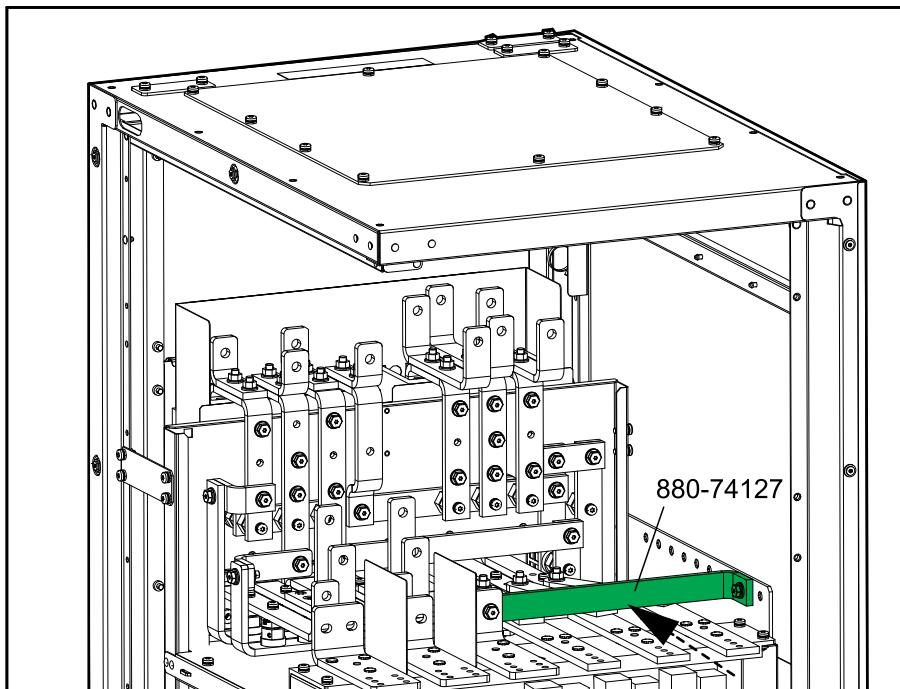
## Prepare for TN-C Earthing System

1. Unpack the optional grounding kit and install the copper busbar (880-74018 or 880-74127) in the UPS.

### UPS with One Internal Switch



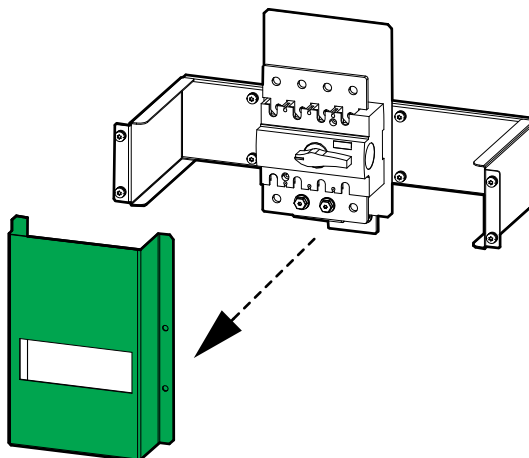
### UPS with Four Internal Switches



## Install the Neutral Disconnection Kit (Option)

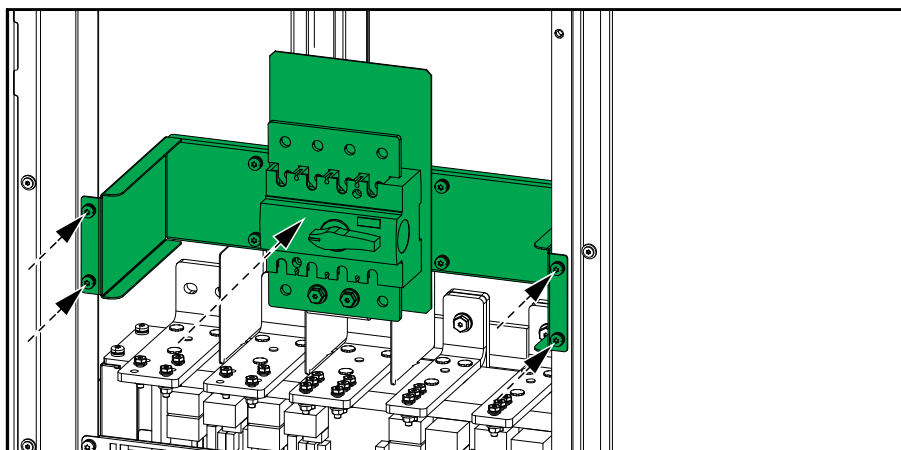
**NOTE:** Use the optional neutral disconnection kit SP3OPT004 for this procedure. The neutral disconnection kit is only applicable for a UPS with one internal switch.

1. Remove the plastic cover from the neutral disconnection assembly.



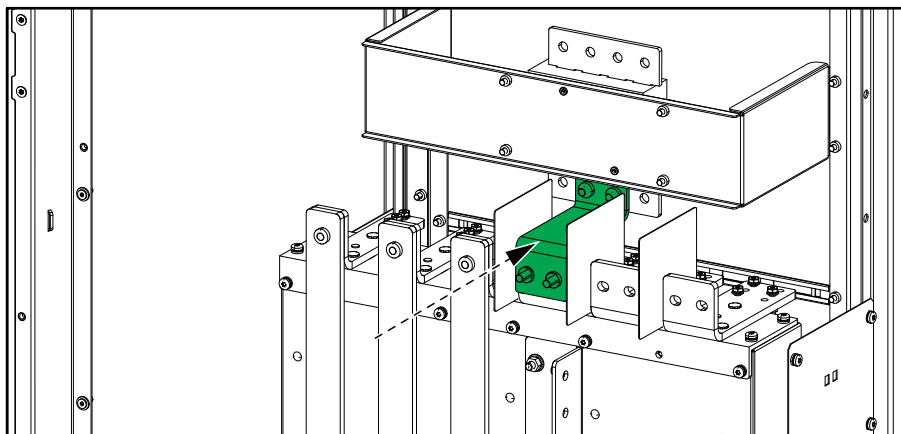
2. Install the neutral disconnection assembly to the rear posts in the UPS with the four provided screws.

### Rear View of the UPS



3. Connect the bottom busbar of the neutral disconnection assembly to the neutral busbar in the UPS with the two provided screws.

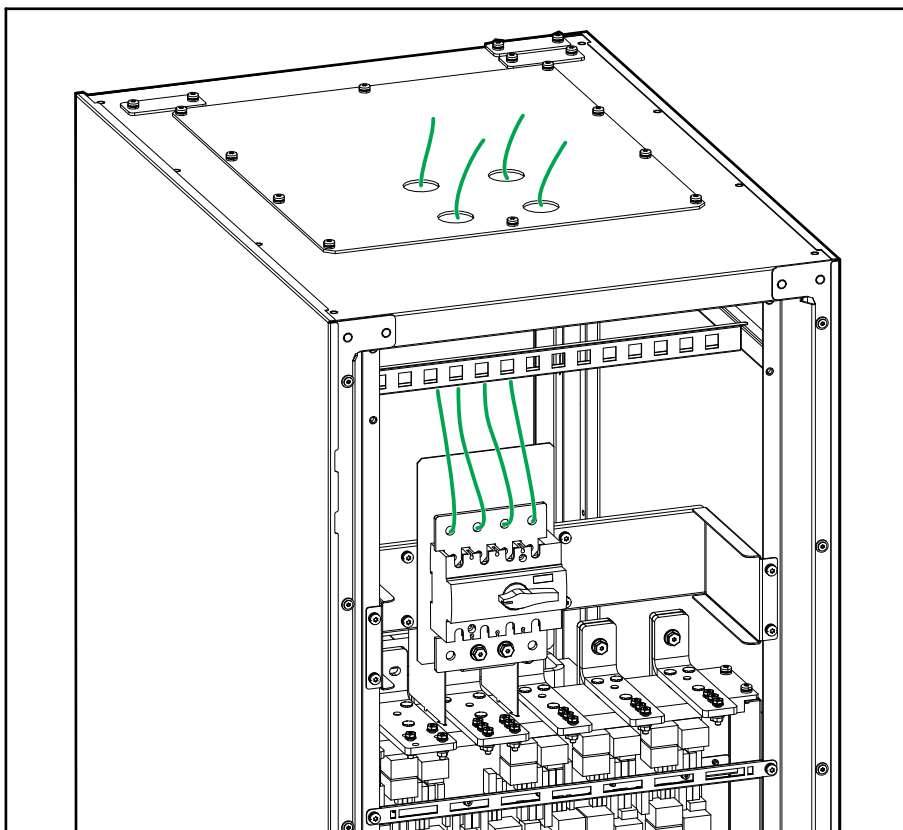
### Front View of the UPS





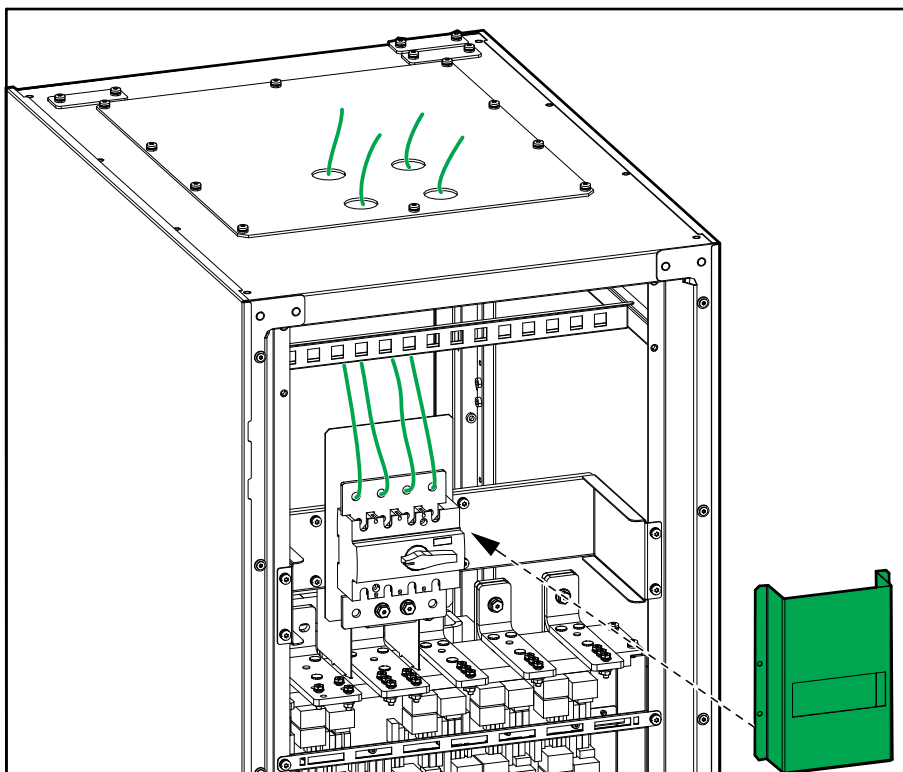
4. Connect the external neutral cables to the upper busbar of the neutral disconnection assembly.

#### Rear View of the UPS



5. Reinstall the plastic cover on the neutral disconnection assembly.

#### Rear View of the UPS



# Connect the Power Cables for the UPS with One Internal Switch

## NOTICE

### RISK OF EQUIPMENT DAMAGE

To ensure correct load sharing in bypass operation in a parallel system:

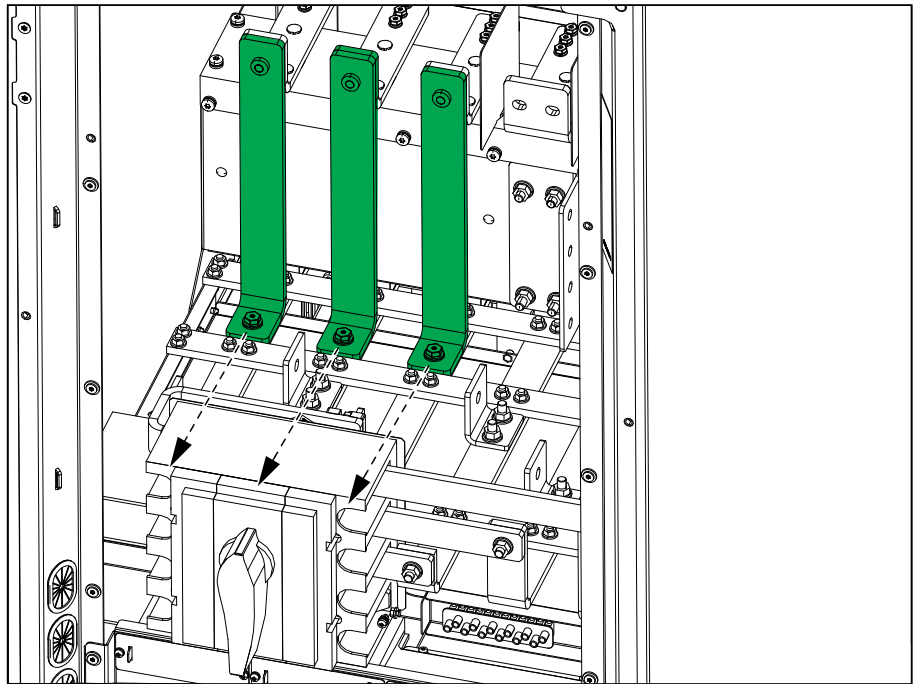
- All bypass cables must be the same length for all UPSs.
- All output cables must be the same length for all UPSs.
- All input cables must be the same length for all UPSs (only required in single mains system).

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

1. **Only for dual mains:** Remove the single mains jumper busbars.

**NOTE:** Save the single mains jumper busbars. They are needed for testing during start-up of the UPS.

### Front View of the UPS



2. Connect the power cables in the described order.

- a. Connect the PE cables.

**NOTE:** The earth/PE connection must be common for all the UPSs in the parallel system.

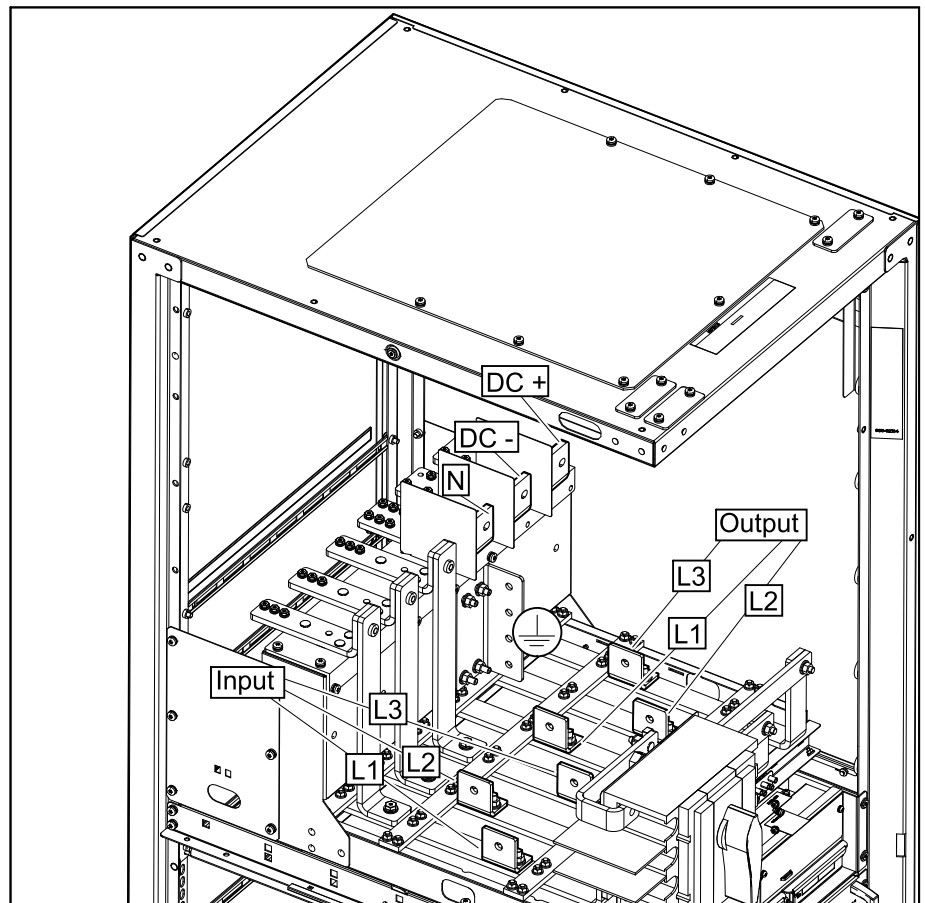
- b. Connect the input cables (L1, L2, L3, (N)).

- c. **Only for dual mains:** Connect the bypass cables (L1, L2, L3, N).

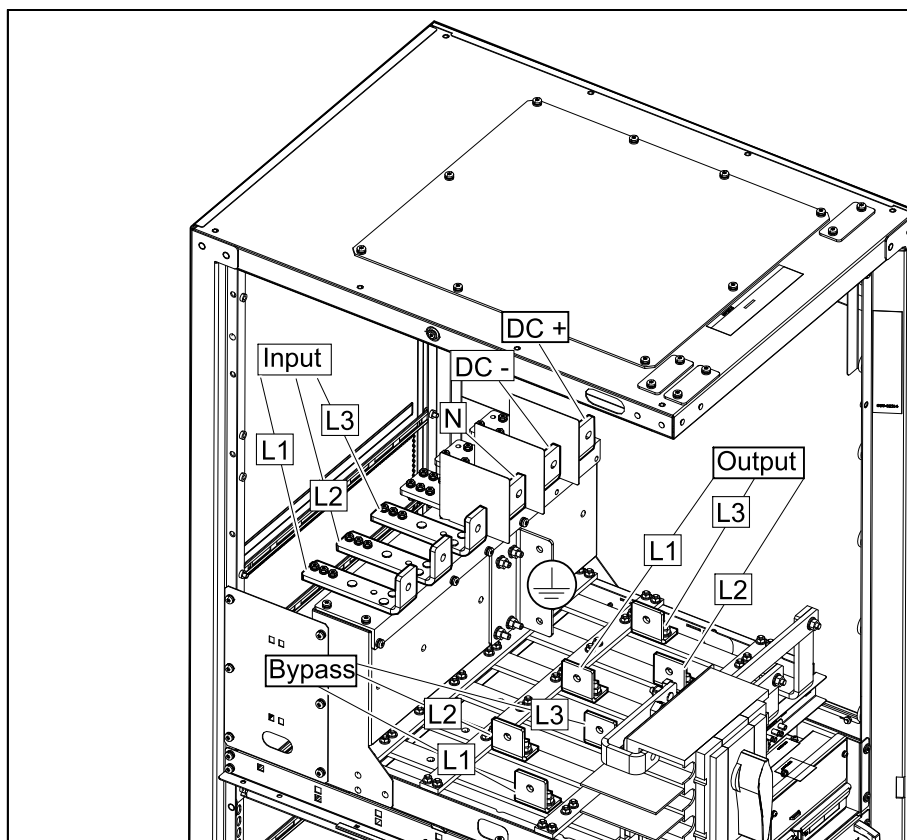
- d. Connect the output cables (L1, L2, L3, N).

- e. Connect the DC cables (DC+, DC-).

**Single Mains**

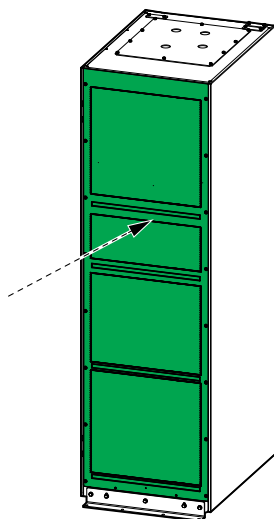


### Dual Mains



3. Reinstall the rear panel on the UPS.

### Rear View



# Connect the Power Cables for the UPS with Four Internal Switches

## NOTICE

### RISK OF EQUIPMENT DAMAGE

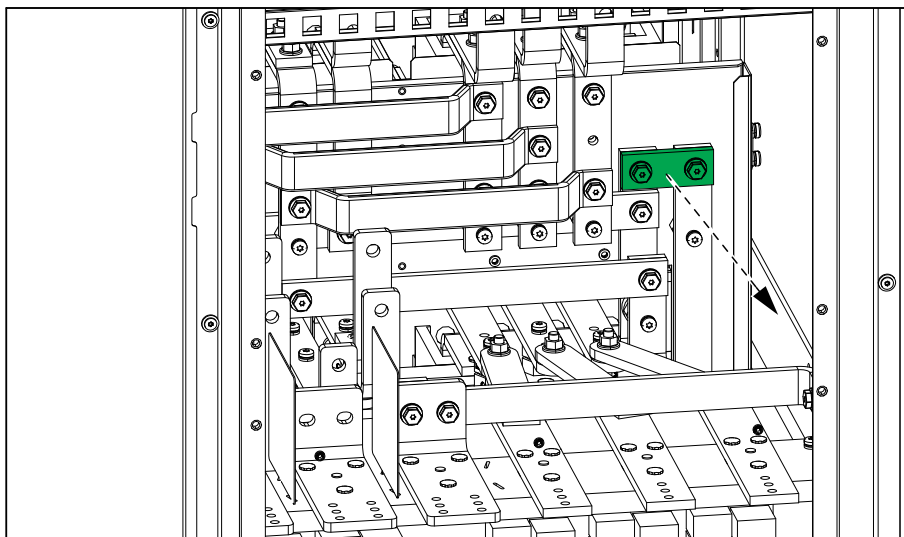
To ensure correct load sharing in bypass operation in a parallel system:

- All bypass cables must be the same length for all UPSs.
- All output cables must be the same length for all UPSs.
- All input cables must be the same length for all UPSs (only required in single mains system).

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

1. **Only when the local codes/regulations require removal of the neutral jumper:** Remove the neutral jumper (880-74129). The neutral jumper makes a bolted connection of the neutral so that the neutral is not disconnected when the 4-pole switches are opened.

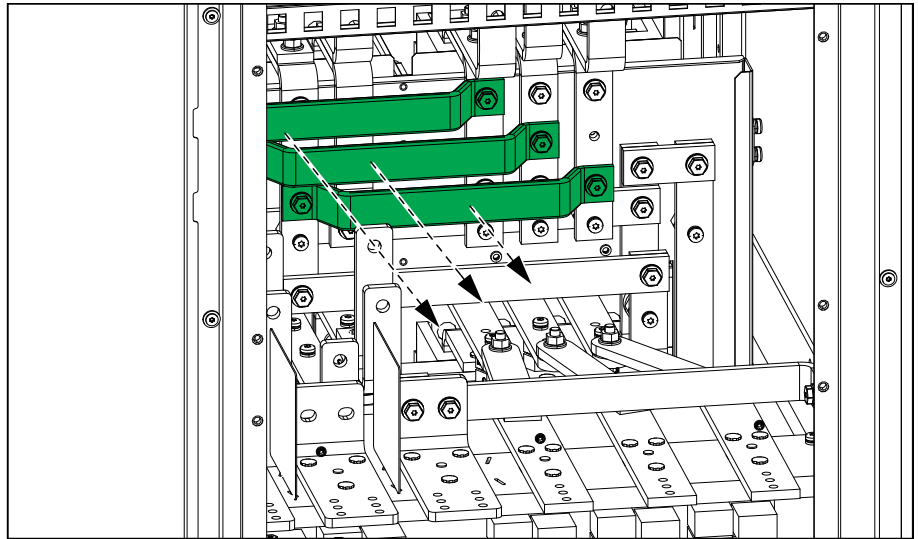
### Rear View of the UPS



2. **Only for dual mains:** Remove the single mains jumper busbars.

**NOTE:** Save the single mains jumper busbars. They are needed for testing during start-up of the UPS.

#### Rear View of the UPS



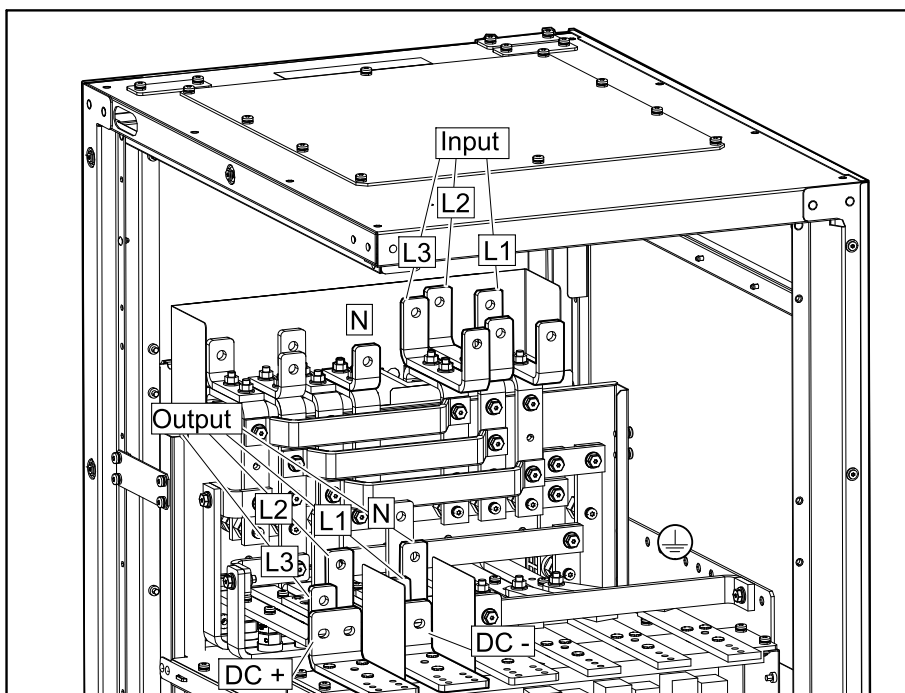
3. Connect the power cables in the described order.

- a. Connect the PE cables.

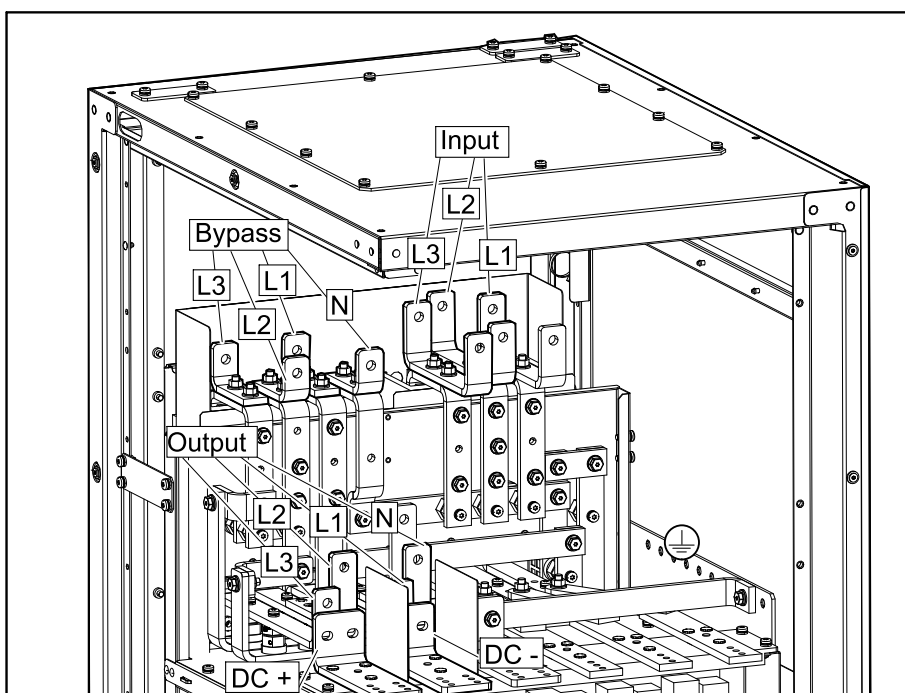
**NOTE:** The earth/PE connection must be common for all the UPSs in the parallel system.

- b. Connect the input cables (L1, L2, L3, (N)).
- c. **Only for dual mains:** Connect the bypass cables (L1, L2, L3, N).
- d. Connect the output cables (L1, L2, L3, N).
- e. Connect the DC cables (DC+, DC-).

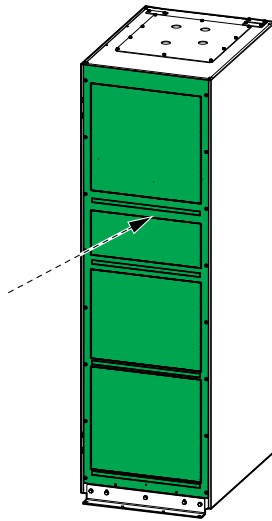
**Single Mains**



**Dual Mains**



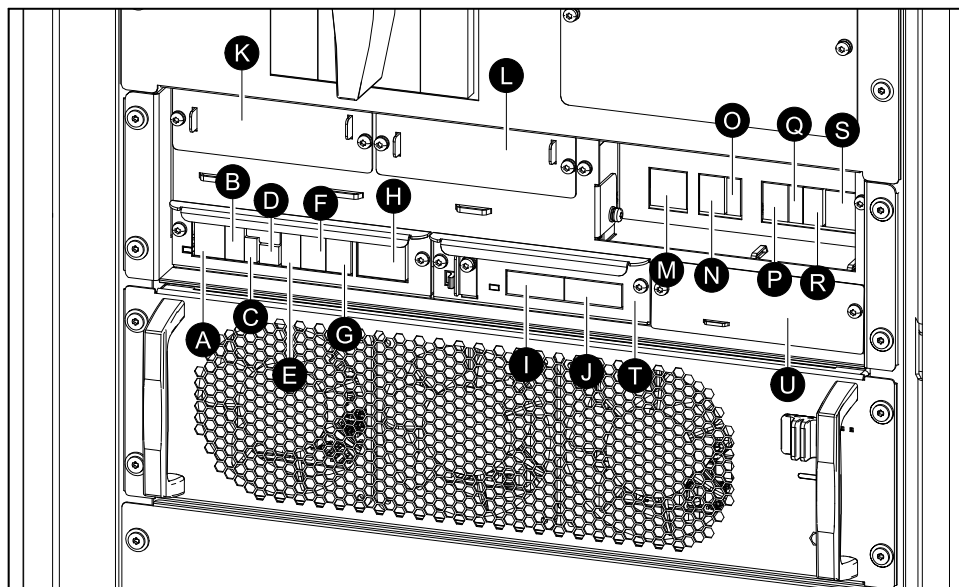
4. Reinstall the rear panel on the UPS.

**Rear View**



# Connect the Signal Cables

## Overview of Signal Connection Terminals in the UPS



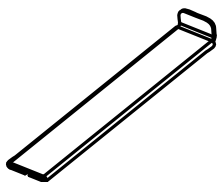
- A. Remote EPO (J6600)
- B. Display port (for internal use)
- C. USB port (for service)
- D. Tuner port (for service)
- E. Modbus port
- F. Battery temperature sensor (J3008)
- G. Input contacts (J3009)
- H. Output relays (J3001)
  - I. PBUS2
  - J. PBUS1
- K. Network management card (NMC) slot 1
- L. Network management card (NMC) slot 2
- M. Backfeed relay and sync output relay (J8310)
- N. Auxiliary contacts 1 (J8302)
- O. Auxiliary contacts 2 (J8303)
- P. Battery disconnect device auxiliary contacts (J8304)
- Q. IMB and RIMB auxiliary contacts (J8305)
- R. Sync input (J8300)
- S. Battery disconnect device trip (J8301)
- T. IM1 slot for intelligence module
- U. IM2 slot for intelligence module

**NOTE:** Route the signal cables separately from the power cables and route the Class 2/SELV cables (A to L, T and U) separately from the non-Class 2/non-SELV cables (M to S). Non-Class 2/non-SELV cables should be rated for 600 V.

**NOTE:** The recommended size for the signal cables is 0.5 mm<sup>2</sup>.

**NOTE:** Do not unplug the signal terminals by hand. Be sure to use the tool (TME12560) in the accessory bag to unplug the signal terminals. Be sure to restore the two rows of terminals to their original position: the grey terminals in the upper row and the green terminals in the lower row.

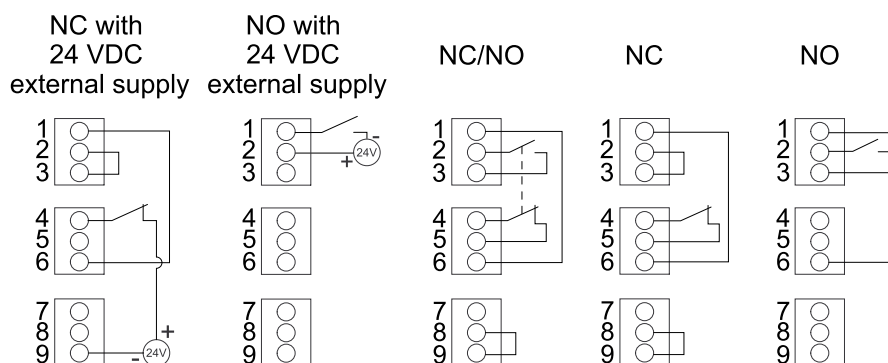
1. Use the provided terminal unplugging tool (TME12560) to remove the covers for the signal connection terminals. Save the tool for future use.



2. Connect the Class 2/SELV signal cables from the building EPO to the remote EPO (J6600) in the UPS according to one of the options below.

The EPO circuit is considered Class 2/SELV. 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.

#### EPO Configurations (Terminal J6600, 1-9)



The EPO input supports 24 VDC.

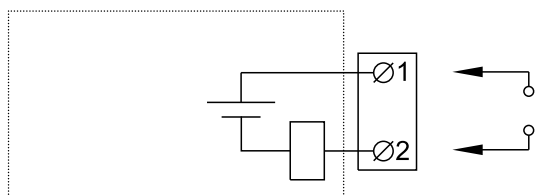
**NOTE:** The default setting for the EPO activation is to turn off the inverter.

If you want the EPO activation to transfer the UPS into forced static bypass operation instead, please contact Schneider Electric.

3. Connect the Class 2/SELV signal cables to the input contacts and output relays in the UPS.

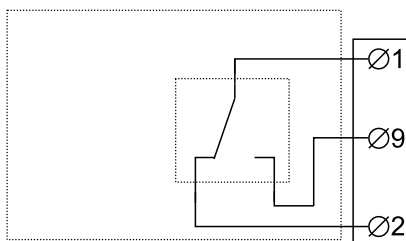
Do not connect any circuit to the input contacts unless it can be confirmed that the circuit is Class 2/SELV.

The input contacts support 24 VDC 10 mA. All circuits connected must have the same 0 V reference.



| Name                   | Description                | Location            |
|------------------------|----------------------------|---------------------|
| IN_1 (input contact 1) | Configurable input contact | Terminal J3009, 1-2 |
| IN_2 (input contact 2) |                            | Terminal J3009, 3-4 |
| IN_3 (input contact 3) |                            | Terminal J3009, 5-6 |
| IN_4 (input contact 4) |                            | Terminal J3009, 7-8 |

The output relays support 24 VAC/VDC 1 A. All external circuitry must be fused with maximum 1 A fast acting fuses.



| Name                   | Description               | Location   |
|------------------------|---------------------------|--|
| OUT_1 (output relay 1) | Configurable output relay | Terminal J3001, 1 (common), 9 (NO <sup>25</sup> ), 2 (NC <sup>26</sup> ) |
| OUT_2 (output relay 2) |                           | Terminal J3001, 10 (common), 3 (NO), 11 (NC)                             |
| OUT_3 (output relay 3) |                           | Terminal J3001, 4 (common), 12 (NO), 5 (NC)                              |
| OUT_4 (output relay 4) |                           | Terminal J3001, 13 (common), 6 (NO), 14 (NC)                             |
| OUT_5 (output relay 5) |                           | Terminal J3001, 7 (common), 15 (NO), 8 (NC)                              |

4. Connect the signal cables from the auxiliary products to the UPS. Follow the instructions in the auxiliary product manuals.

25. Normally open  
26. Normally close

# Connect the Signal Cables from Switchgear and Third-Party Auxiliary Products

**NOTE:** Route the signal cables separately from the power cables and route the Class 2/SELV cables separately from the non-Class 2/non-SELV cables.

1. Install the optional battery temperature sensor in the battery solution. In battery cabinets, install the battery temperature sensor in the top corner of the battery cabinet.

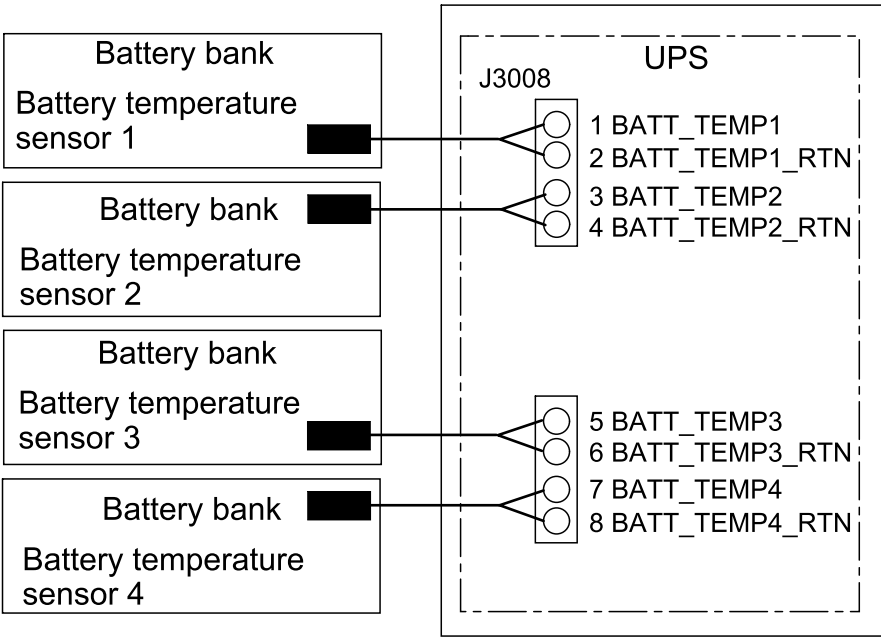
**⚠ WARNING**

**HAZARD OF FIRE**  
Position the battery temperature sensor as described to ensure correct temperature measurements.  
**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

2. Route the battery temperature sensor cables from the battery solution to the UPS and connect as shown.

**NOTE:** Battery temperature sensors (SP3OPT006) are available as an optional kit.

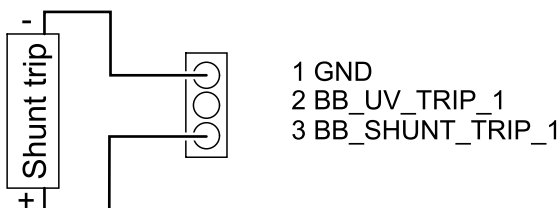
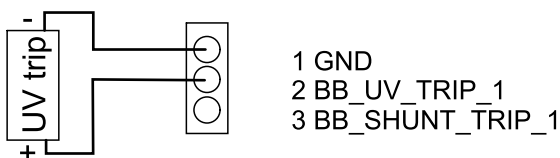
**NOTE:** The battery temperature sensor cables are considered Class 2/SELV. Class 2/SELV circuits must be isolated from the primary circuitry.



3. Connect the signal cables from the battery disconnect device(s) in your battery solution for shunt trip or undervoltage (UV) trip connection to the UPS. Follow the illustration for connection with internal 24 VDC supply. The UPS can connect to and monitor up to three (if J8301-10 is used for backfeed) or four battery disconnect devices.
  - a. Connect battery disconnect device 1 to terminal J8301 in the UPS.
  - b. Connect battery disconnect device 2 to terminal J8301 in the UPS.
  - c. Connect battery disconnect device 3 to terminal J8301 in the UPS.
  - d. Connect battery disconnect device 4 to terminal J8301 in the UPS.
  - e. For battery disconnect device trip 4, connect trip unit negative to pin 1 or 4 or 7 of terminal J8301.

**NOTE:** The following diagram and table demonstrate the battery disconnect device trip connection with internal 24 VDC supply and pin connections.

#### Battery Disconnect Device Trip Connection with Internal 24 VDC Supply



#### J8301 Pin Connections for Battery Disconnect Device(s)

The cable supplying the shunt trip shall be a jacket cable and rated for 600 VAC. The cables shall be sized taking the cable voltage drop and the recommendation of the shunt trip manufacturer into consideration.

##### Battery Disconnect Device 1

| Pin number | Function        |
|------------|-----------------|
| 1          | GND             |
| 2          | BB_UV_TRIP_1    |
| 3          | BB_SHUNT_TRIP_1 |

##### Battery Disconnect Device 2

| Pin number | Function        |
|------------|-----------------|
| 4          | GND             |
| 5          | BB_UV_TRIP_2    |
| 6          | BB_SHUNT_TRIP_2 |

##### Battery Disconnect Device 3

| Pin number | Function |
|------------|----------|
| 7          | GND      |

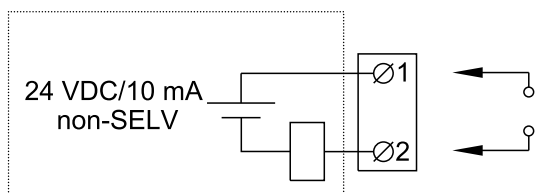
**Battery Disconnect Device 3 (Continued)**

|   |                 |
|---|-----------------|
| 8 | BB_UV_TRIP_3    |
| 9 | BB_SHUNT_TRIP_3 |

**Battery Disconnect Device 4**

| Pin number | Function        |
|------------|-----------------|
| 10         | 24 V            |
| 11         | BB_UV_TRIP_4    |
| 12         | BB_SHUNT_TRIP_4 |

4. Connect signal cables from the auxiliary contacts in your switchgear to the UPS.



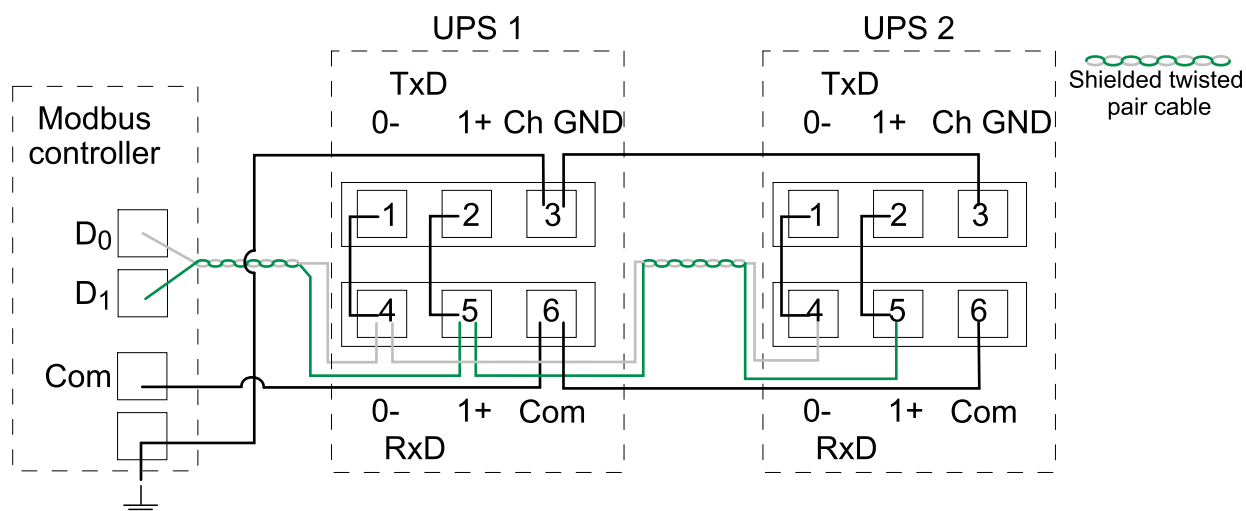
| Terminal number | Function  | Connection   |
|-----------------|---|--|
| J8302, 1-2      | UIB (unit input disconnect device)  | Connect to normally open (NO) auxiliary contacts in unit input disconnect device UIB. UIB must contain an auxiliary contact for each connected UPS.                                |
| J8302, 3-4      | SSIB (static switch input disconnect device)  | Connect to normally open (NO) auxiliary contacts in static switch input disconnect device SSIB. SSIB must contain an auxiliary contact for each connected UPS.                     |
| J8302, 5-6      | Ext. MBB (external maintenance bypass disconnect device)  | Connect to normally closed (NC) auxiliary contacts in external maintenance bypass disconnect device (Ext. MBB). Ext. MBB must contain an auxiliary contact for each connected UPS. |
| J8302, 7-8      | UOB (unit output disconnect device)   | Connect to normally open (NO) auxiliary contacts in unit output disconnect device UOB.   |
| J8303, 1-2      | RUOB (redundant AUX switch in unit output disconnect device)  | Connect to redundant auxiliary contacts in unit output disconnect device UOB.  |
| J8303, 3-4      | SIB (system isolation disconnect device)  | Connect to normally open (NO) auxiliary contacts in system isolation disconnect device SIB for parallel system. SIB must contain an auxiliary contact for each connected UPS.      |
| J8304, 1-2      | BB1 (battery disconnect device 1)   | Connect to normally open (NO) auxiliary contacts in battery disconnect device number 1.  |
| J8304, 3-4      | BB2 (battery disconnect device 2)   | Connect to normally open (NO) auxiliary contacts in battery disconnect device number 2.  |
| J8304, 5-6      | BB3 (battery disconnect device 3)   | Connect to normally open (NO) auxiliary contacts in battery disconnect device number 3.  |
| J8304, 7-8      | BB4 (battery disconnect device 4)   | Connect to normally open (NO) auxiliary contacts in battery disconnect device number 4.  |
| J8305, 1-2      | <b>One internal switch UPS:</b><br>IMB (internal maintenance disconnect device)<br><b>Four internal switches UPS:</b><br>MBB (maintenance bypass disconnect device) | Connect to normally closed (NC) auxiliary contacts in internal maintenance disconnect device IMB or maintenance bypass disconnect device MBB.                                      |
| J8310, 1        | Backfeed relay common   | See Backfeed Protection, page 82.  |
| J8310, 2        | Backfeed relay normally closed (NC)   | See Backfeed Protection, page 82.  |
| J8310, 3        | Backfeed relay normally open (NO)   | See Backfeed Protection, page 82.  |

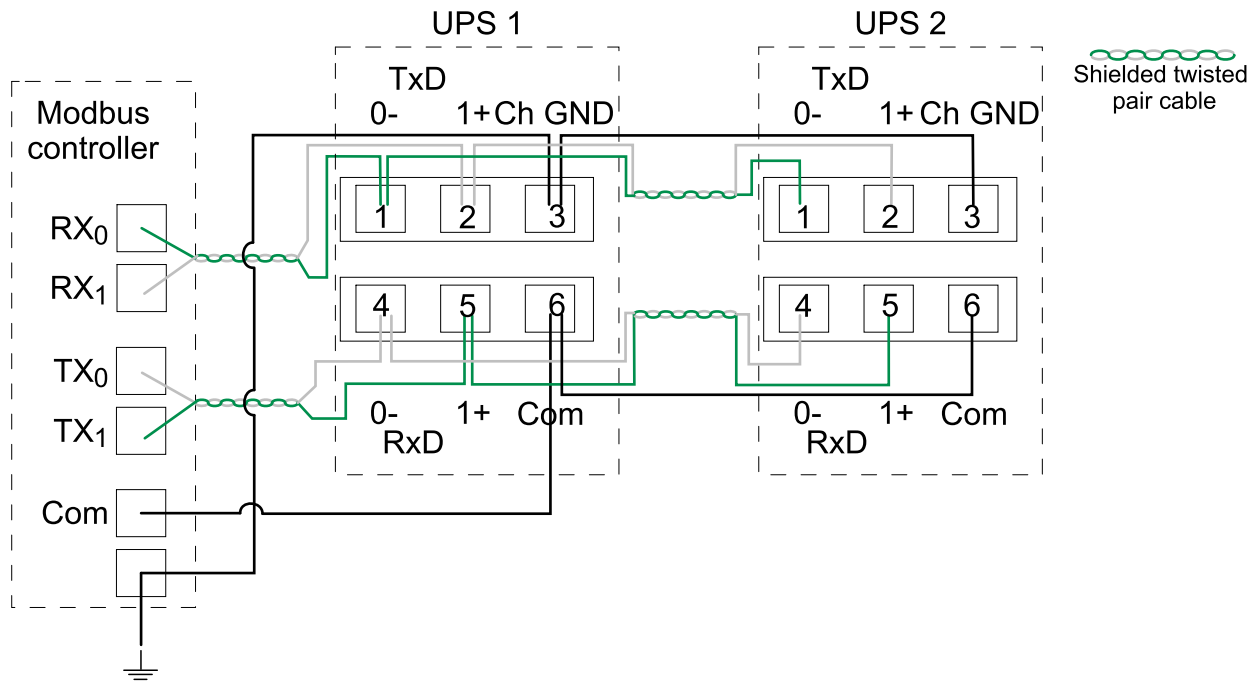
## Connect the Modbus Cables

**NOTE:** For cyber security protection, strict access control to the installation room must be exerted at all times.

1. Connect the Modbus cables to the terminal J3000 of the UPS(s). Use either 2-wire or 4-wire connection.
  - All Modbus signal cables shall be double insulated/jacket cable and minimum rated for 30 VDC.
  - Shielded twisted pair cables must be used for Modbus connections. The shield connection to the ground must be as short as possible (ideally below 1 cm). The cable shield must be connected to the Ch Gnd pin on each device.
  - Wiring should be done in accordance with local wiring codes.
  - Route signal cables separately from power cables to ensure sufficient isolation.
  - The Modbus port is galvanically isolated with the Com pin as ground reference.

### Example: 2-Wire Connection with Two UPSs



**Example: 4-Wire Connection with Two UPSs**

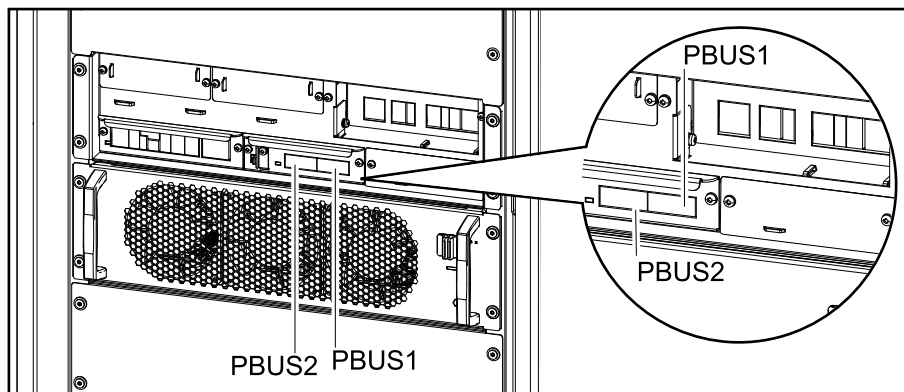
2. Install 150 Ohm termination resistors at each end of each bus if the buses are very long and operate at high data rates. Buses under 610 meters at 9600 baud or under 305 meters at 19.200 baud should not require termination resistors.



## Connect the PBUS Cables

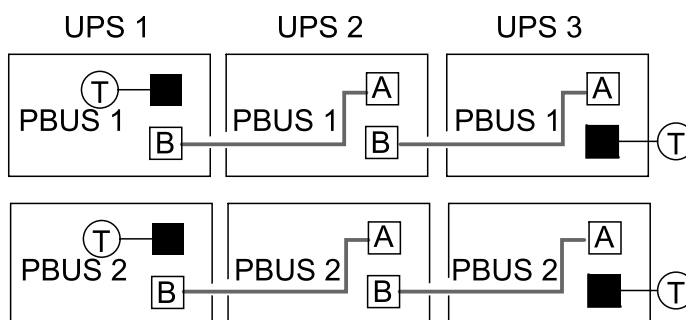
**NOTE:** Do not connect the PBUS cables to the network. The connection is not intended for network connection and may cause inoperability of the network.

1. Connect the provided PBUS 1 (white) and PBUS 2 (red) cables to the PBUS ports on the UPSs.

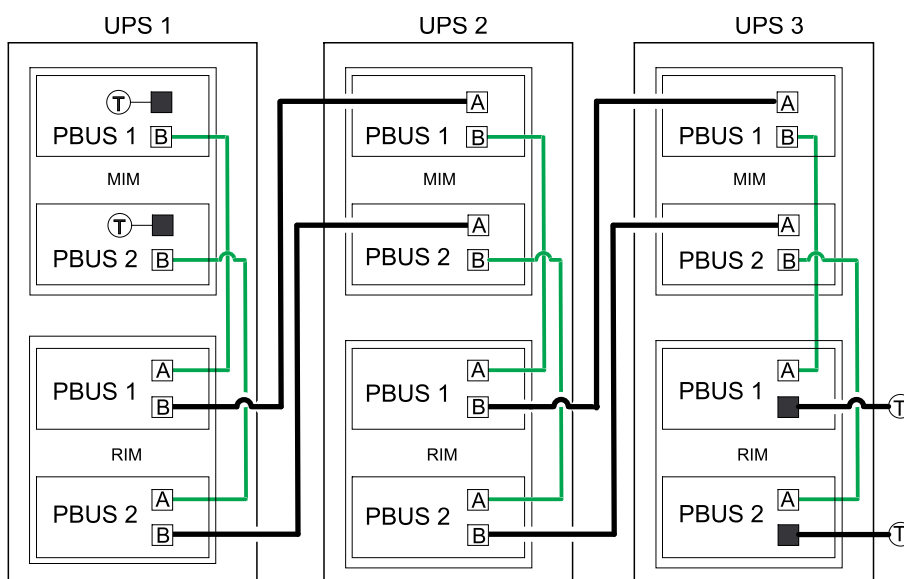


2. Mount termination plugs (T) in the unused connectors.

### Example of System with Three UPSs in Parallel without the RIM



### Example of System with Three UPSs in Parallel with the RIM



**NOTE:** If the RIM is present, the PBUS cables between the two intelligence modules in one UPS (highlighted in green) should be obtained from the redundant intelligence module kit SP3OPT001.

# Install the Power Module(s)

**NOTE:** The power module must be in **Off** mode.

**NOTE:** One 50 kW power module is preinstalled in the UPS. Additional power modules are shipped separately for UPS ratings over 50 kW and must be installed to reach the correct UPS kW rating.

**NOTE:** Install power modules starting with the bottom positions and upward.

## ⚠ WARNING

### RISK OF EQUIPMENT DAMAGE

- Before installing a new power module, check the upstream and downstream protection configuration first. Make sure your UPS is configured correctly for the upgraded frame rating. For example, if your UPS is upgraded from 200 kW to 250 kW, the choice of breaker type must be based on the rating of 250 kW.

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

## ⚠ WARNING

### RISK OF EQUIPMENT DAMAGE

- Store the power modules at an ambient temperature of -25 °C to 55 °C, 0-95% non-condensing humidity.
- Store the power modules in their original protective packaging.

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

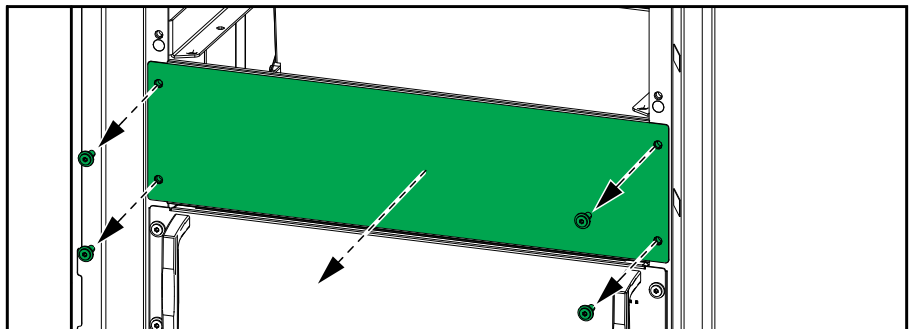
## ⚠ CAUTION

### HEAVY LOAD

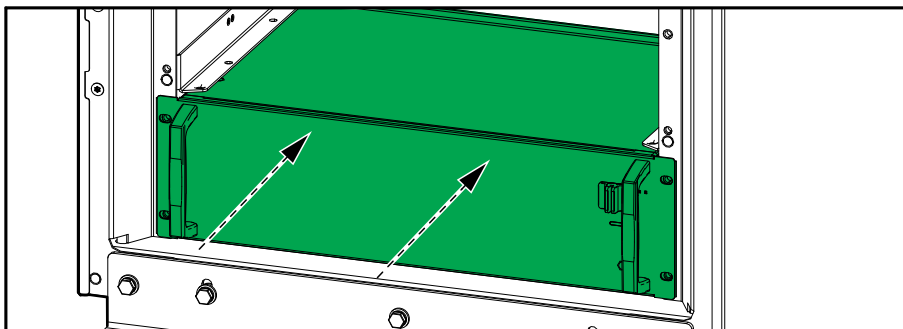
Power modules are heavy (28 kg) and require two persons to lift.

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

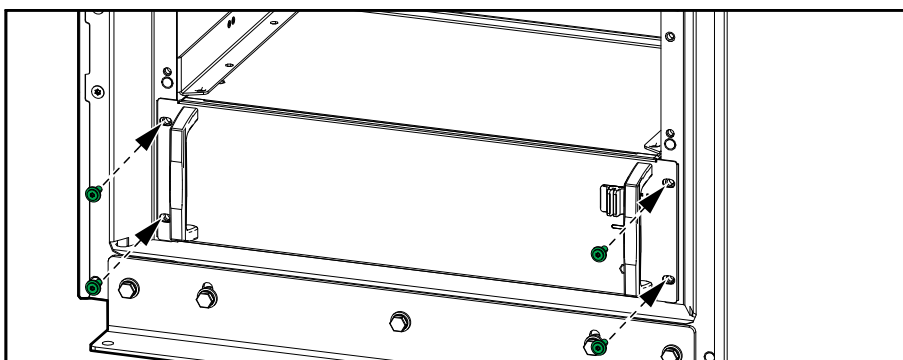
1. Remove the filler plate from the empty power module slot. Save the filler plate for future use.



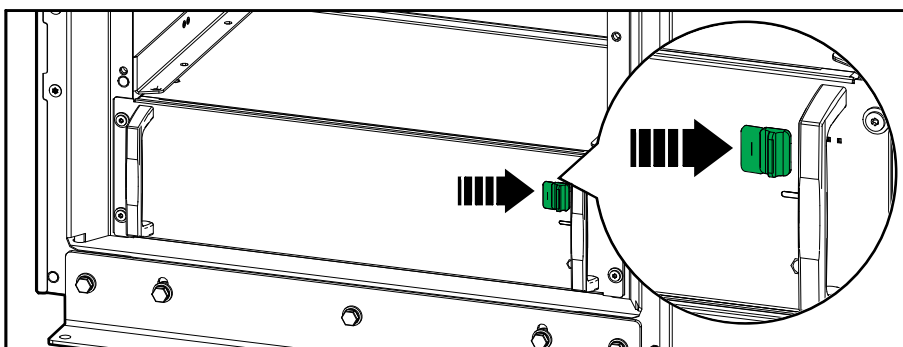
2. Set the unlock tab on the power module to the OFF position. Push the power module into the slot. The enable mechanism will latch when the power module is correctly inserted.



3. Reinstall the screws in the sides of the power module.



4. Set the unlock tab on the power module to the ON position.



## **DANGER**

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

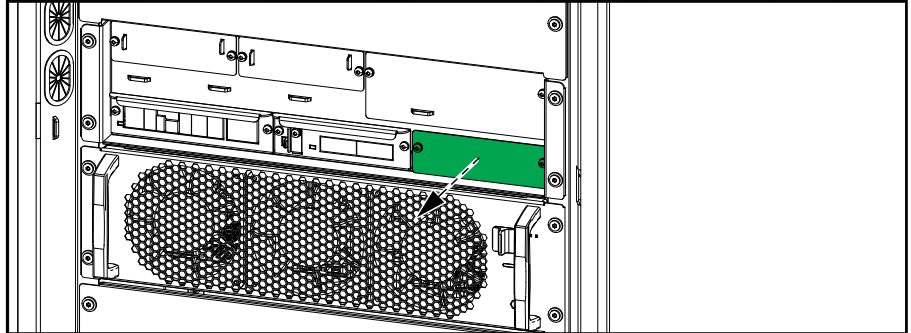
All power module slots must have either a power module or a filler plate installed.

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

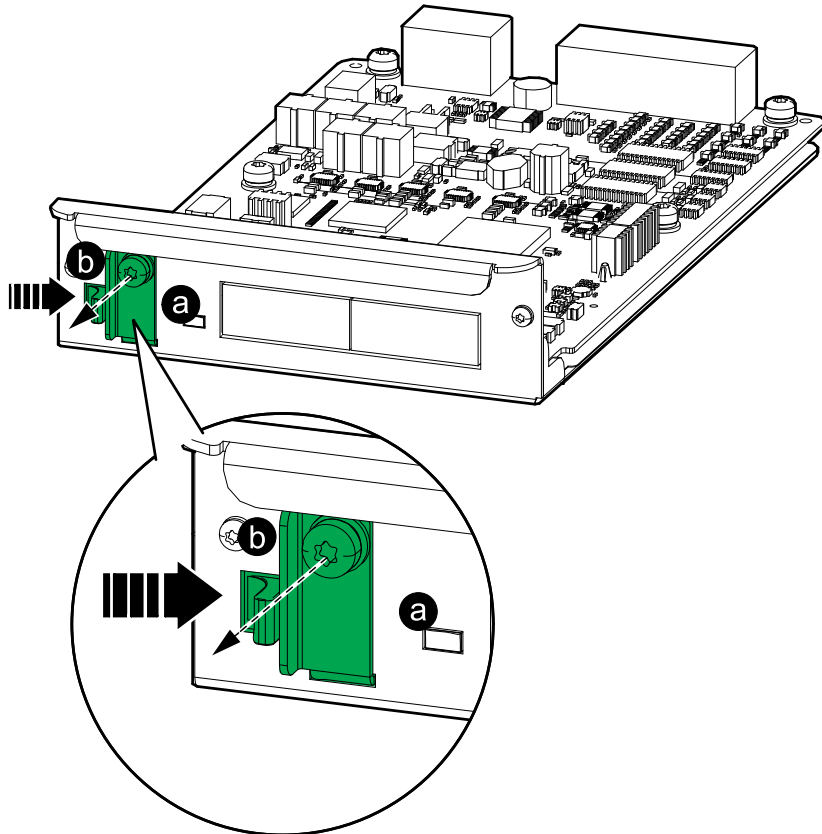
# Install the Redundant Intelligence Module (RIM) Kit (Option)

**NOTE:** Use the optional redundant intelligence module (RIM) kit SP3OPT001 for this procedure.

1. Remove the IM2 slot cover.

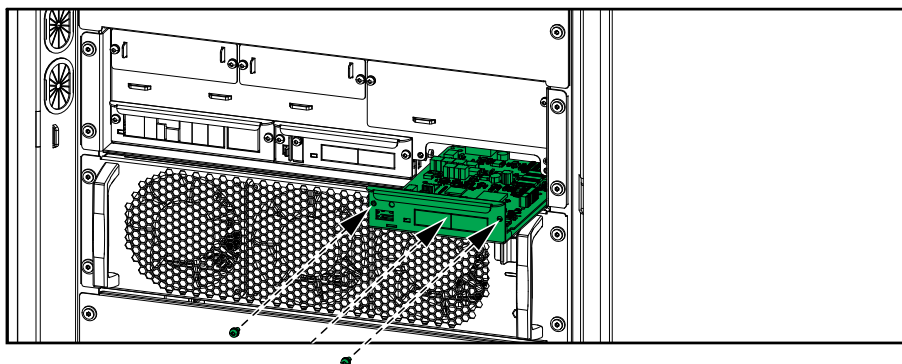


2. Loosen the indicated screw and remove the enable switch fixing plate. Set the enable switch to the OFF position.

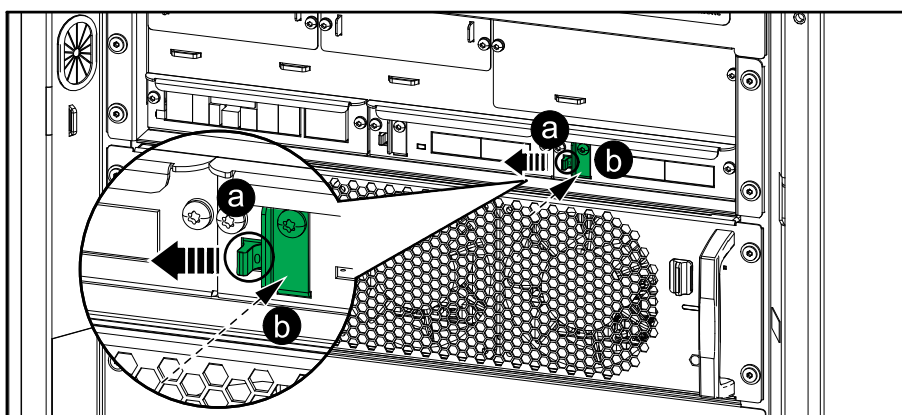


3. Install the redundant intelligence module from the kit in the slot with two screws.

**NOTE:** Push on the bottom part of the intelligence module to ensure a smooth push-in.



4. Set the enable switch to the ON position. Reinstall the enable switch fixing plate and fasten with the screw removed in step 2.



## Backfeed Protection

### **DANGER**

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

Mandatory backfeed protection on bypass must be implemented by installation of upstream disconnect device with shunt trip or under voltage trip connected to the UPS. See diagrams and instructions below.

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

## Installation of Third Party Backfeed Protection

Connect the disconnect device shunt trip and AUX switch to the UPS as shown below. Use double insulated cables. Disconnect device shunt trip must be rated for 24 VDC nominal, inrush max 20 W. The cable supplying the shunt trip shall be a jacket cable and rated for 600 VAC. The cables shall be sized taking the cable voltage drop and the recommendation of the shunt trip manufacturer into consideration.

885-92858 (provided with the UPS) must be placed visible at the bypass upstream disconnect device.

### **DANGER**

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

In systems where backfeed protection is not a part of the standard design, an automatic isolation device (Schneider Electric backfeed protection option or other device, such as a disconnect device or contactor with trip function, meeting the requirements of IEC62040-1 or UL1778 5th edition – depending on which standard applies to your local area), is required to be installed to prevent hazardous voltage or energy at the input terminals of the isolation device. The device must be rated and controlled according to the specifications in this manual.

**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 remotely 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):

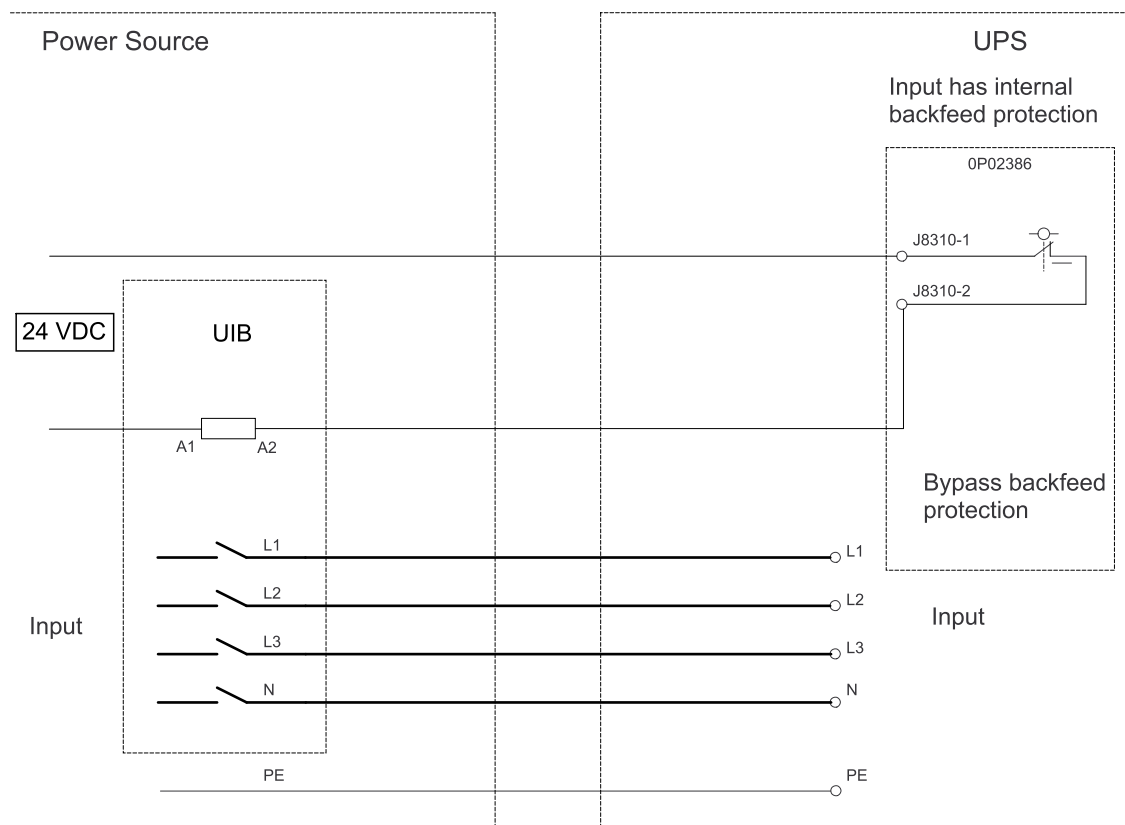
### **DANGER**

#### **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.

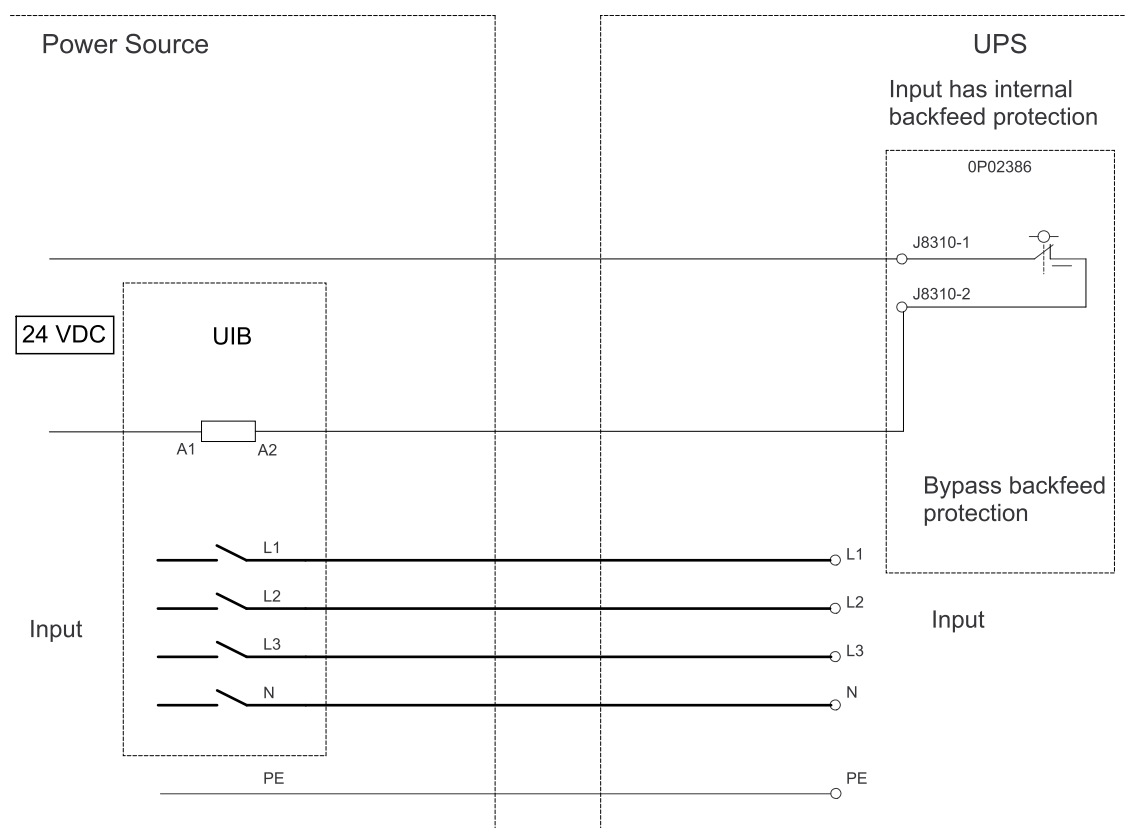
**Failure to follow these instructions will result in death or serious injury.**

### UPS and Third Party Backfeed Protection (UVR trip) – Single Mains

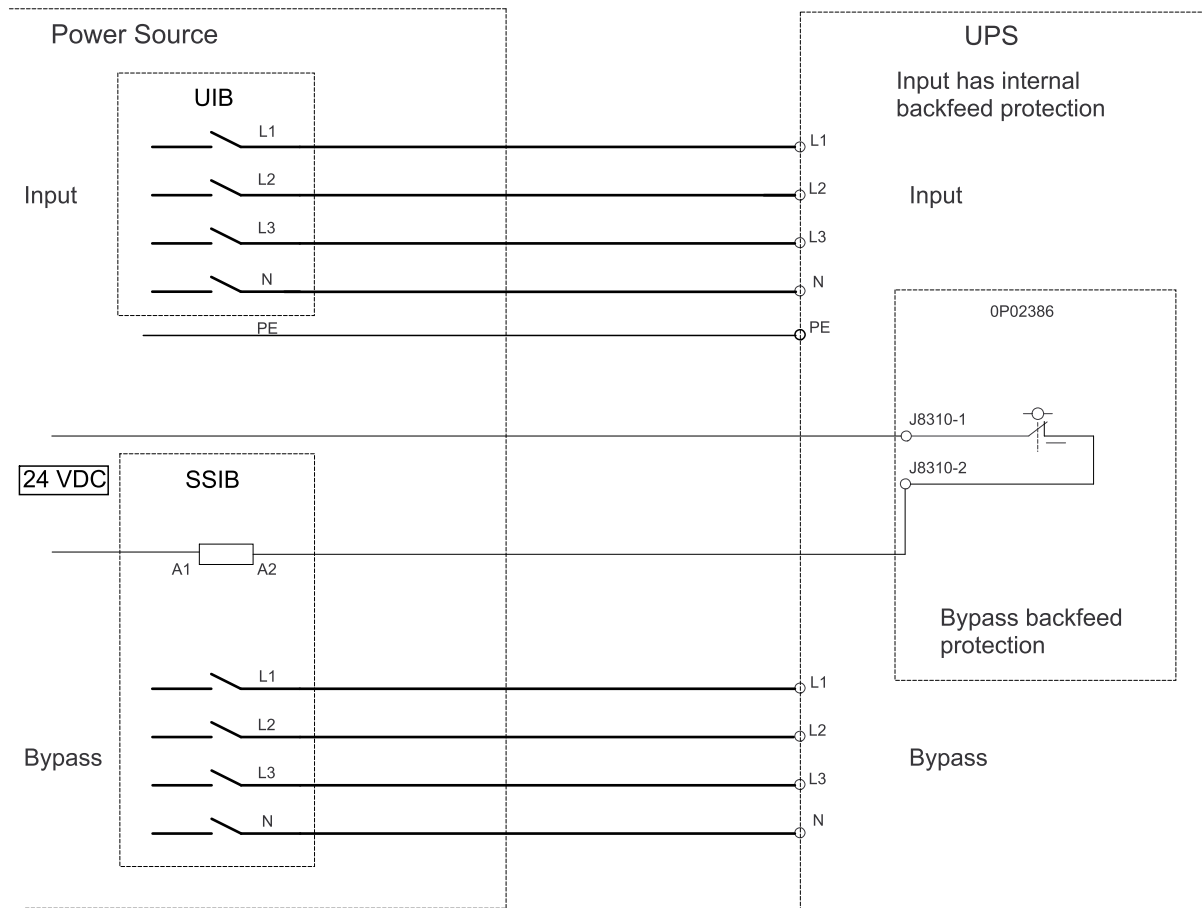


**NOTE:** An external 24 V power supply is required for backfeed protection with UVR trip.

### UPS and Third Party Backfeed Protection (Shunt trip) – Single Mains

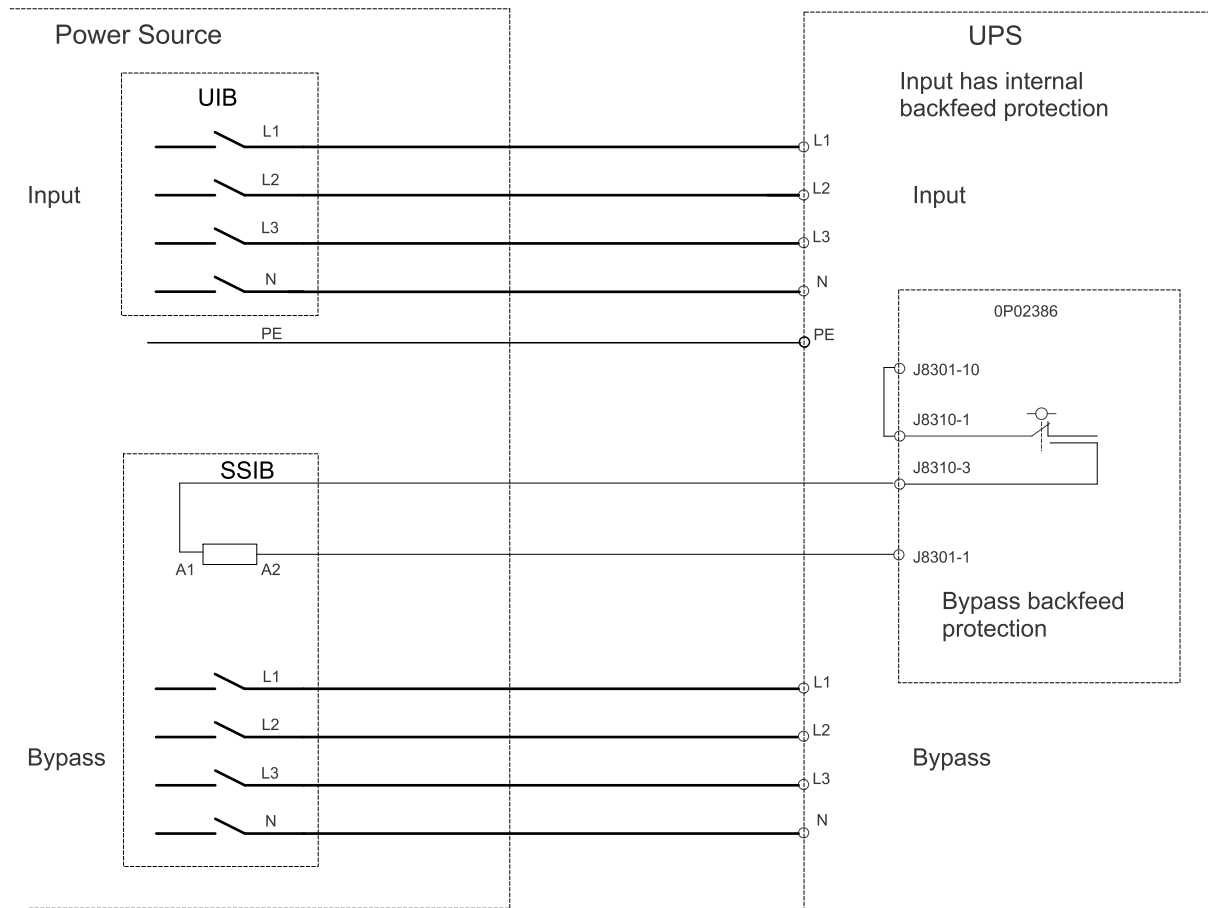


### UPS and Third Party Backfeed Protection (UVR trip) – Dual Mains



**NOTE:** An external 24 V power supply is required for backfeed protection with UVR trip.

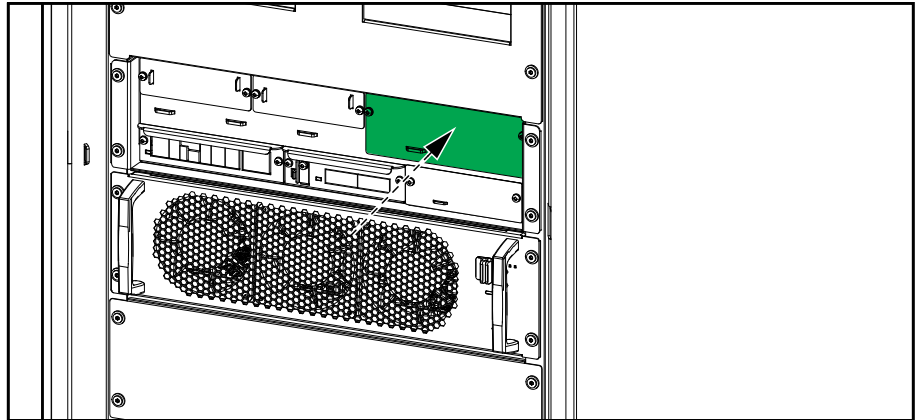


**UPS and Third Party Backfeed Protection (Shunt trip) – Dual Mains**

# Final Installation

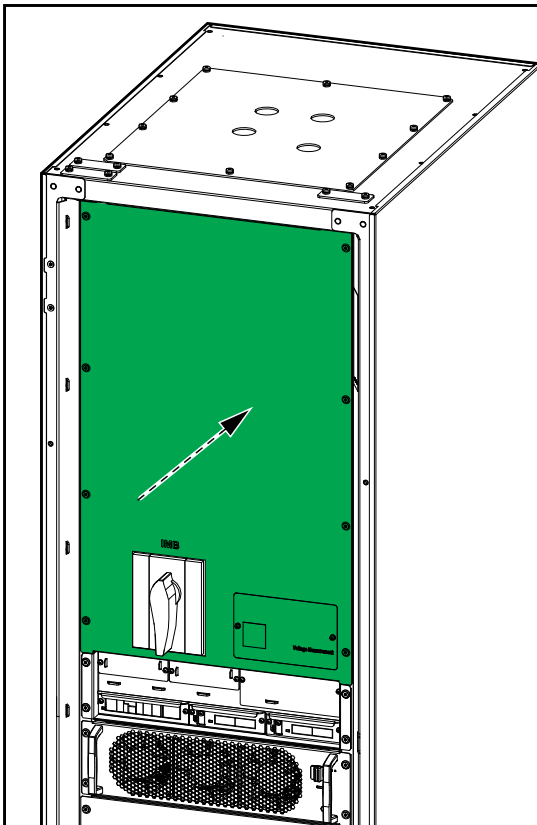
1. Reinstall the cover over the signal connection terminals.

## Front View of the UPS

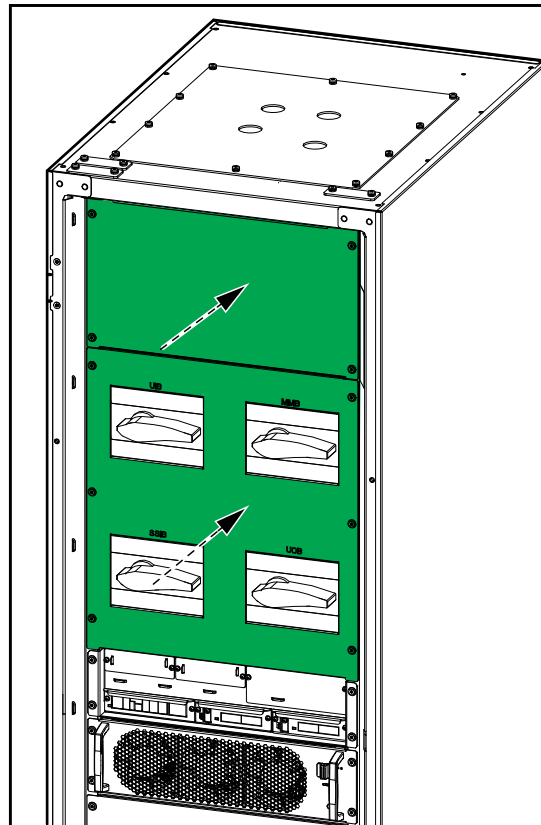


2. Reinstall the front inner cover(s) on the UPS.

### UPS with One Internal Switch



### UPS with Four Internal Switches



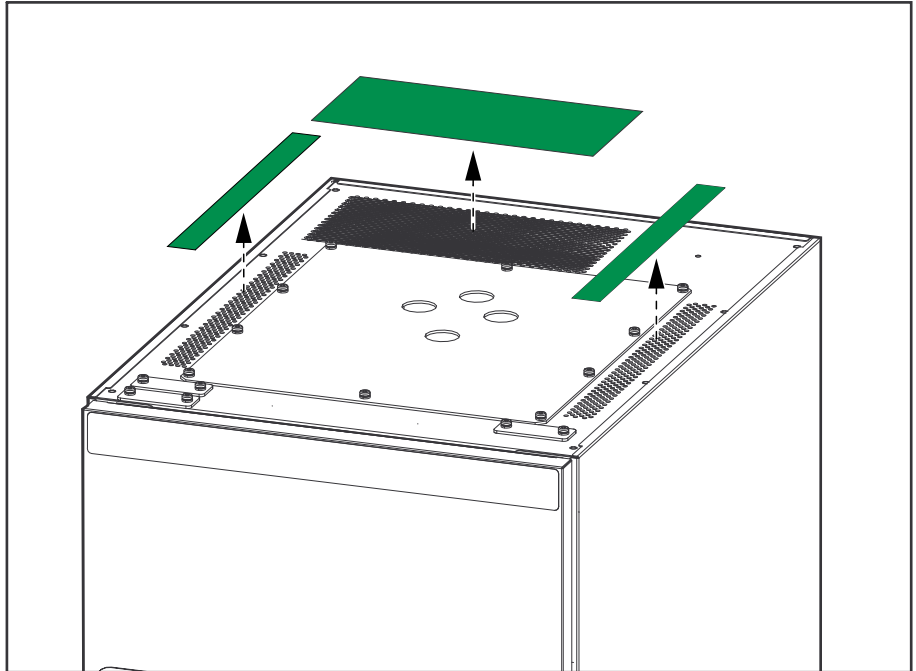
3. **For parallel system:** Install a padlock (not provided) on the internal maintenance disconnect device IMB in the open position on all UPSs in the parallel system.

4. Fill out the model-specific power rating information on the UPS name plate.

|                  |            |
|------------------|------------|
| Model installed: |            |
| ___ V            | ___ kW/kVA |

Note: Refer to the type specifications label or the installation manual for nominal currents for all kW/kVA sizes.

5. Remove the labels 885-92827(x 2) and 885-92828 (x 1) from the top dust covers.



## Decommission or Move the UPS to a New Location

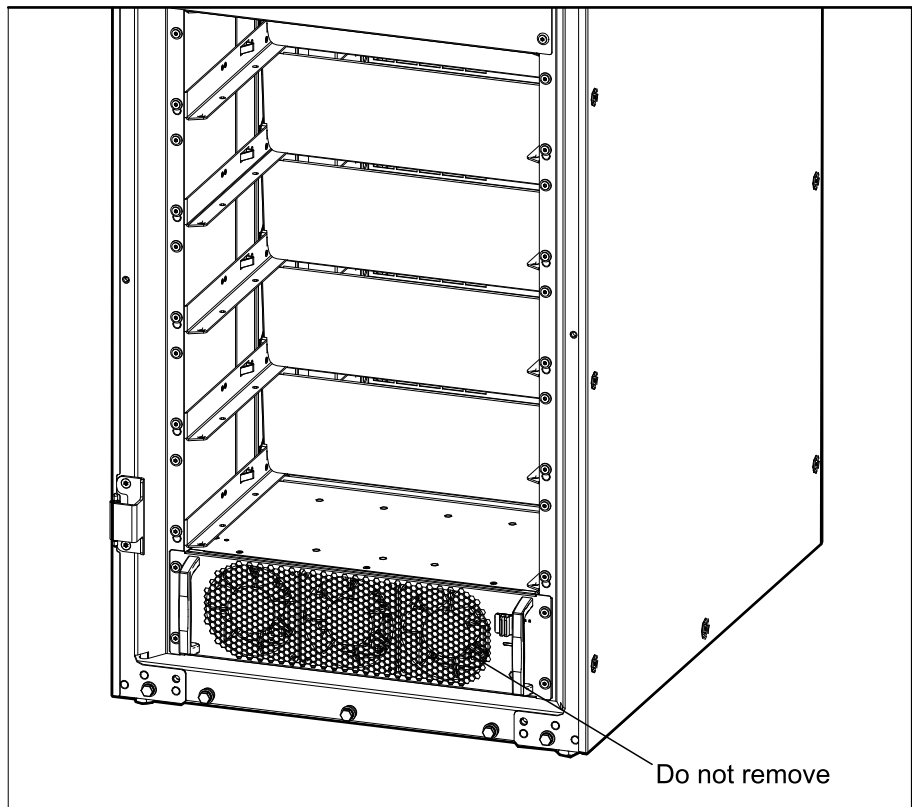
1. Shut down the UPS completely – follow the instructions in the UPS operation manual.
2. Lockout/Tagout all disconnect devices in the maintenance bypass panel/the switchgear in the OFF (open) position.
3. Lockout/Tagout all battery disconnect devices in the switchgear/battery solution in the OFF (open) position.
4. Open the front door of the UPS.
5. Remove all the power modules EXCEPT the power module in the lowest position. See *Install the Power Module(s)*, page 78 for details.

### ⚠ CAUTION

#### HEAVY LOAD

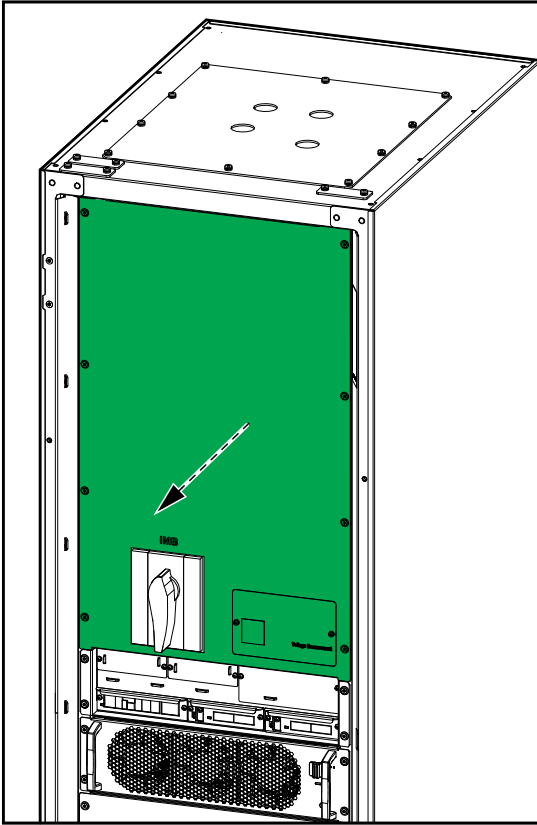
Power modules are heavy (28 kg) and require two persons to lift.

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

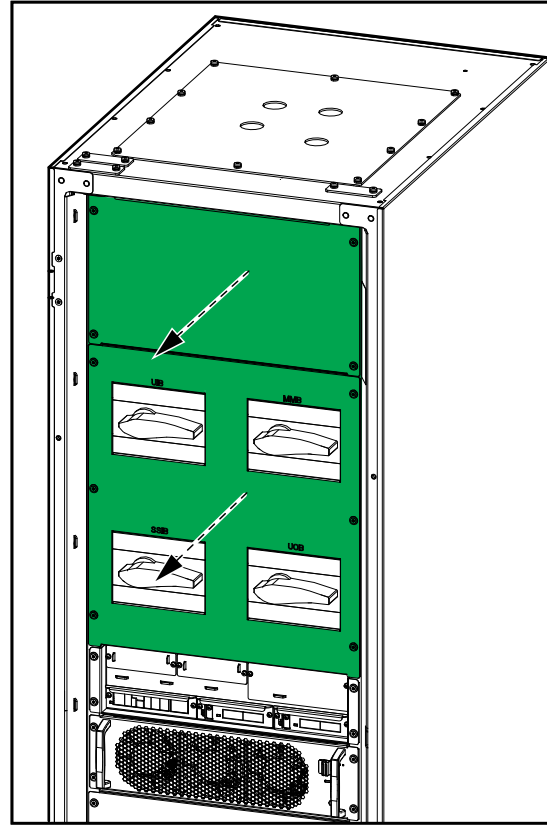


## 6. Remove the front inner cover(s) from the UPS.

UPS with One Internal Switch



UPS with Four Internal Switches



7. Measure for and verify ABSENCE of voltage on each measurement point before continuing.

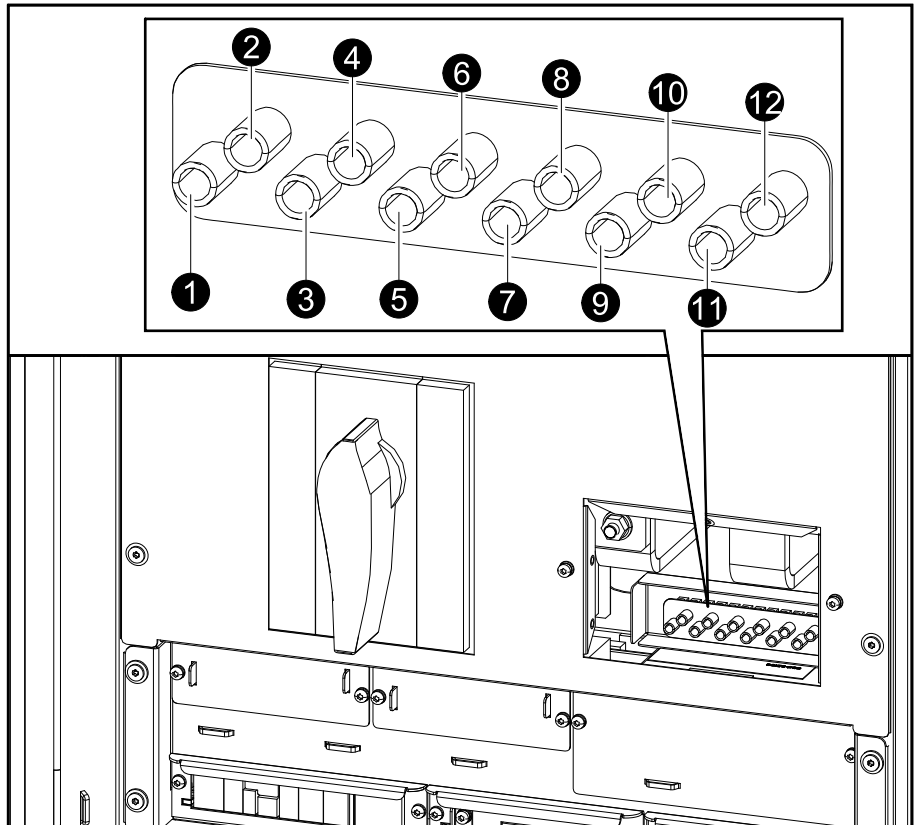
**⚡⚠ DANGER**

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

Measure for and verify ABSENCE of voltage on each measurement point before continuing.

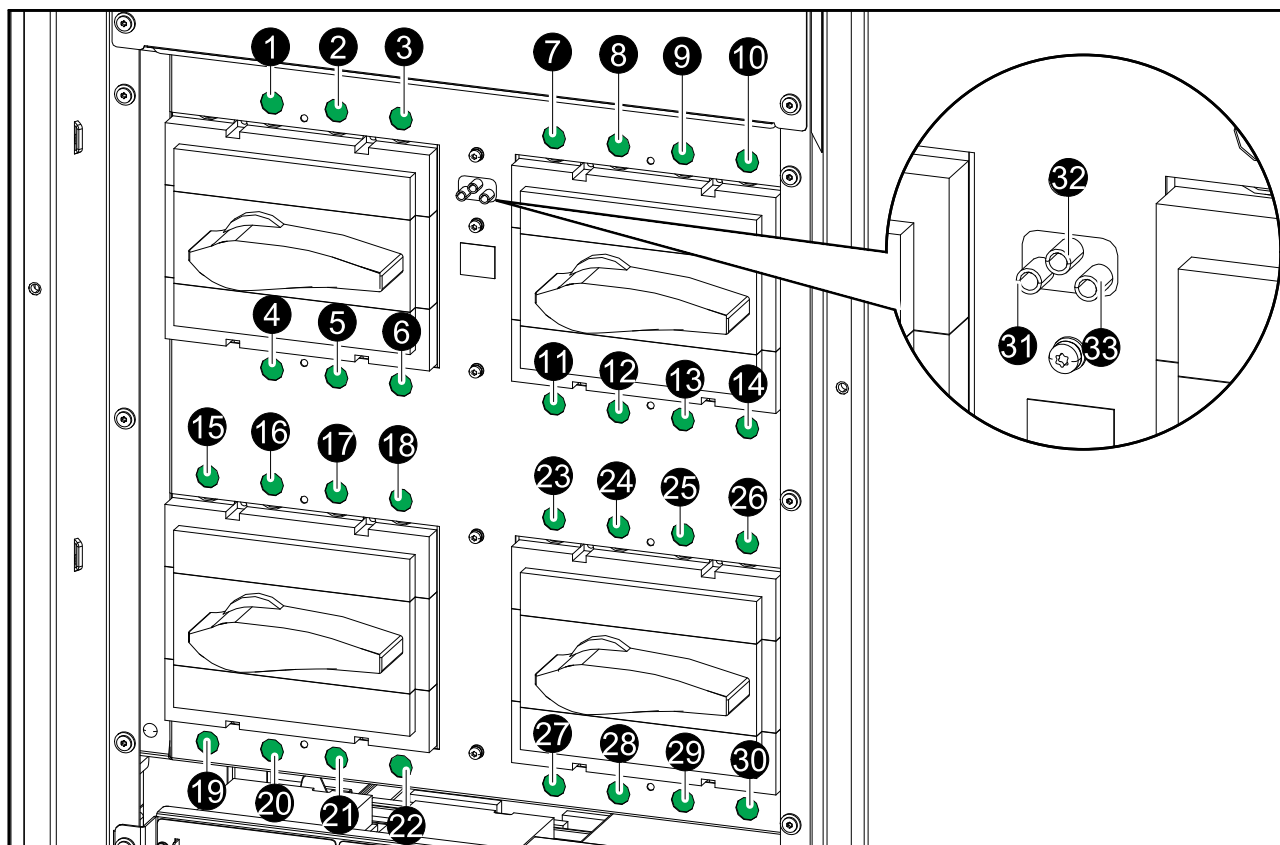
**Failure to follow these instructions will result in death or serious injury.**

### Front View of UPS with One Internal Switch



| Number | Description | Number | Description |
|--------|-------------|--------|-------------|
| 1      | Output L3   | 7      | Battery +   |
| 2      | Output L2   | 8      | Battery –   |
| 3      | Output L1   | 9      | Neutral     |
| 4      | Bypass L3   | 10     | Input L3    |
| 5      | Bypass L2   | 11     | Input L2    |
| 6      | Bypass L1   | 12     | Input L1    |

## Front View of UPS with Four Internal Switches



| Number | Description  | Number | Description   |
|--------|--------------|--------|---------------|
| 1      | UIB L1 (in)  | 18     | SSIB L3 (in)  |
| 2      | UIB L2 (in)  | 19     | SSIB N (out)  |
| 3      | UIB L3 (in)  | 20     | SSIB L1 (out) |
| 4      | UIB L1 (out) | 21     | SSIB L2 (out) |
| 5      | UIB L2 (out) | 22     | SSIB L3 (out) |
| 6      | UIB L3 (out) | 23     | UOB N (out)   |
| 7      | MBB N (in)   | 24     | UOB L1 (out)  |
| 8      | MBB L1 (in)  | 25     | UOB L2 (out)  |
| 9      | MBB L2 (in)  | 26     | UOB L3 (out)  |
| 10     | MBB L3 (in)  | 27     | UOB N (in)    |
| 11     | MBB N (out)  | 28     | UOB L1 (in)   |
| 12     | MBB L1 (out) | 29     | UOB L2 (in)   |
| 13     | MBB L2 (out) | 30     | UOB L3 (in)   |
| 14     | MBB L3 (out) | 31     | Battery +     |
| 15     | SSIB N (in)  | 32     | Battery –     |
| 16     | SSIB L1 (in) | 33     | Battery N     |
| 17     | SSIB L2 (in) |        |               |

8. Measure for and verify ABSENCE of voltage on each input/bypass/output/DC busbar before continuing.

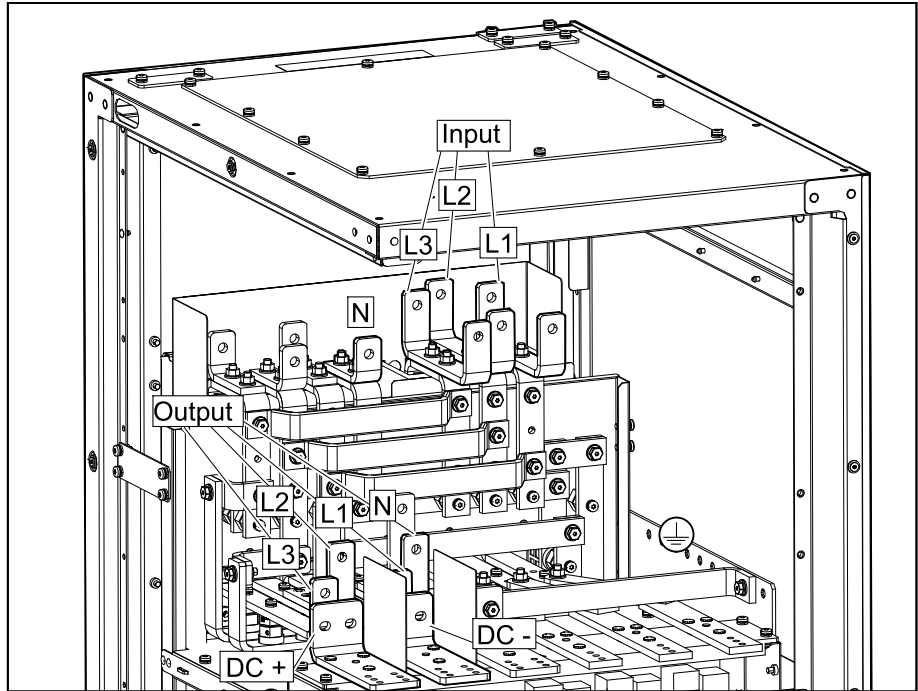
## **⚡ DANGER**

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

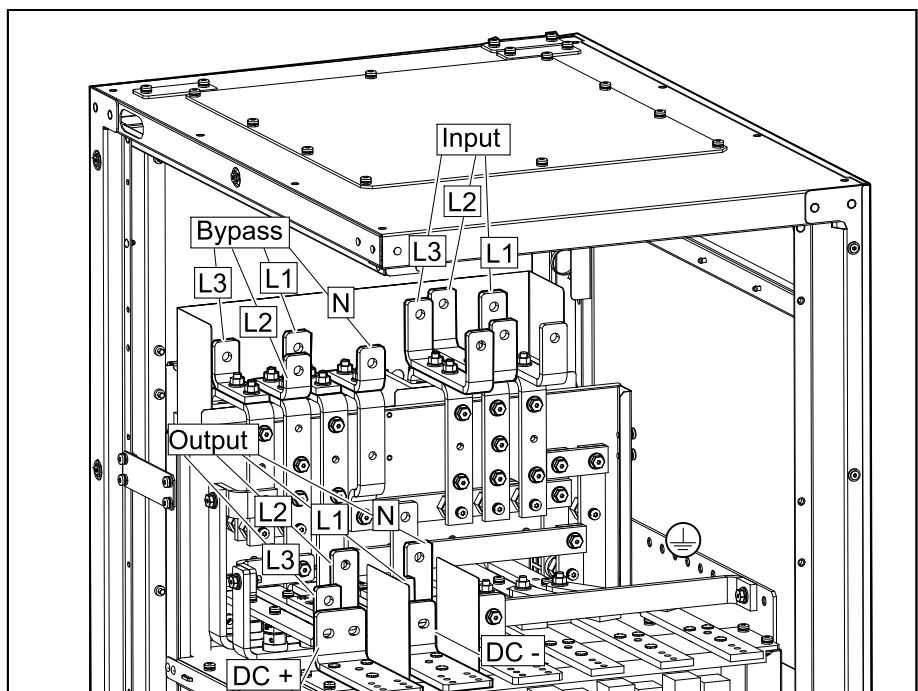
Measure for and verify ABSENCE of voltage on each input/bypass/output/DC busbar before continuing.

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

### **Single Mains**

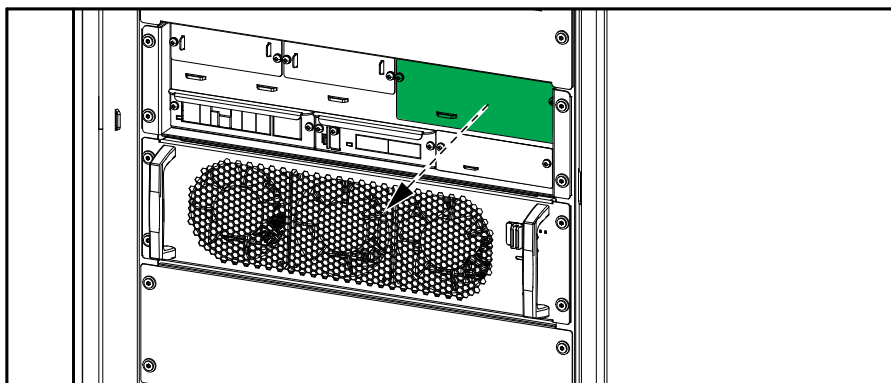


### **Dual Mains**



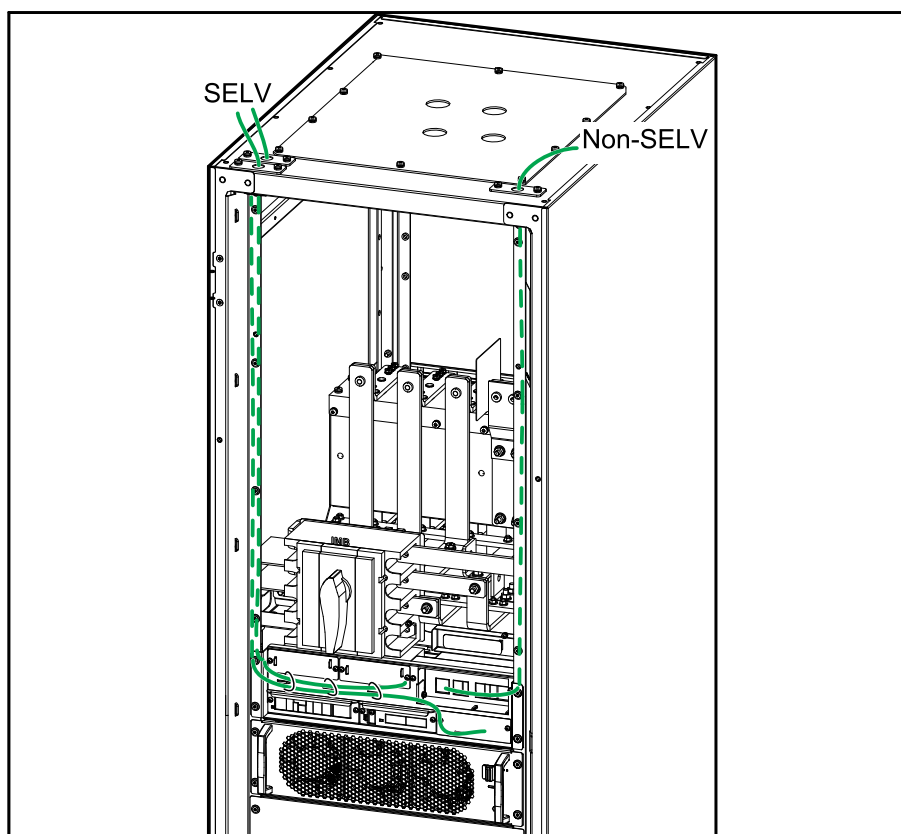


9. Disconnect and remove all power cables from the UPS. See [Connect the Power Cables for the UPS with One Internal Switch](#), page 62 or [Connect the Power Cables for the UPS with Four Internal Switches](#), page 65 for details.
10. Reinstall the front inner cover(s) and reinstall the screws.
11. Remove the cover from the signal connection terminals.



12. Disconnect and remove all signal cables from the UPS. See [Connect the Signal Cables](#), page 69 for details.

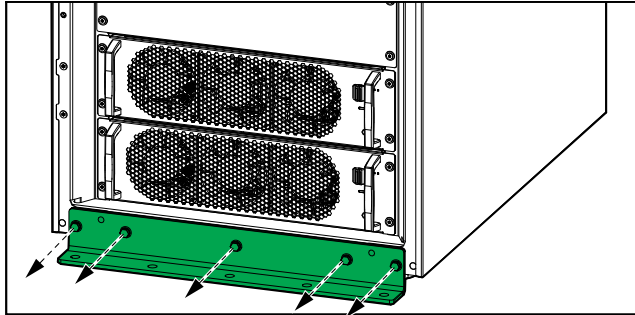
### Front View of the UPS



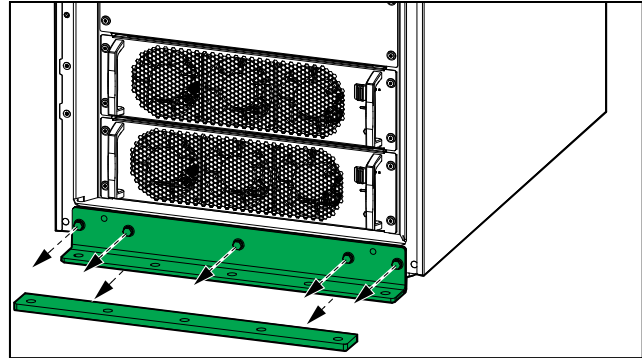
13. **For UPS system with a depth adapter:** Remove the interconnection hardware between the UPS and the depth adapter. Remove the depth adapter. See the installation manual provided with the depth adapter for details. Save all parts for reinstallation.
14. **For UPS system with a bottom entry cabinet:** Remove the interconnection hardware between the UPS and the bottom entry cabinet. Remove the bottom entry cabinet. See the installation manual provided with the bottom entry cabinet for details. Save all parts for reinstallation.
15. Reinstall all removed plates and covers. See [Final Installation](#), page 86 for details.

16. If present, remove the front seismic anchoring bracket/front transportation bracket from the UPS and the floor. Save for reinstallation.

**Front View of the UPS (without Shimming Sheet)**

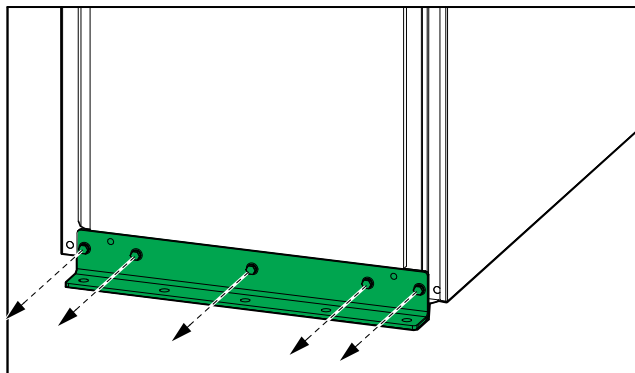


**Front View of the UPS (with Shimming Sheet)**

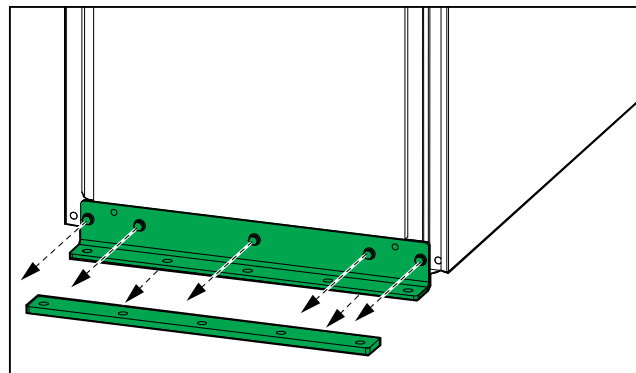


17. If present, remove the rear seismic anchoring bracket/rear transportation bracket from the UPS and from the floor. Save for reinstallation.

**Rear View of the UPS (without Shimming Sheet)**



**Rear View of the UPS (with Shimming Sheet)**



18. Close and lock the front door.  
 19. Raise the feet of the UPS until the casters have full contact with the floor.  
 20. You can now move the UPS by rolling it over the floor on the casters.

## **⚠ WARNING**

### **TIPPING HAZARD**

- The casters of the UPS are exclusively for transport on flat, even, hard, and horizontal surfaces.
- The casters of the UPS 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 UPS.

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

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

**⚠ WARNING****TOP-HEAVY CABINET**

The UPS will be top-heavy with one power module installed. Take appropriate precautions during handling and preparation for transport/shipment.

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

**⚠ WARNING****TIPPING HAZARD**

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

- that personnel performing the transport have necessary skill and have received adequate training;
- to use appropriate tools to safely lift and transport the UPS;
- 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.**

Transportation requirements:

- Schneider Electric recommends to reuse the original shipping pallet in combination with the original transportation brackets for long-distance transportation, if in undamaged condition. If the original shipping pallet and original transportation brackets are not available or are damaged, use an appropriate pallet suitable for the weight of the UPS (309 kg with one power module installed) with appropriate dimensions (minimum 1250 mm x 900 mm).
- Use appropriate means of fixation to mount the UPS to the pallet. Follow the procedures in the receiving and unpacking manual to fix the UPS to the pallet when using the original pallet and transportation brackets.

**⚠ DANGER****TIPPING HAZARD**

- The UPS 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 UPS 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.**

22. Perform one of the following:

- Decommission the UPS, OR
- Move the UPS to a new location to install it.

23. **Only for installing the UPS in a new location:** Follow the installation manual to install the UPS in the new location. See [Installation Procedure](#), page 48 for installation overview. Start-up must only be performed by Schneider Electric.

**⚡ ⚠ DANGER**

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

Start-up 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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