Easy UPS 3-Phase Modular

50-250 kW

Installation

380 V, 400 V, 415 V

Latest updates are available on the Schneider Electric website
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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.

Additional Safety Precautions for Tall, Thin, and Heavy Products





These symbols indicate a risk of tip-over and potential crushing injury. When displayed on a product or package, they warn that the item may become unstable due to a high center of gravity, uneven weight distribution, or overall heaviness. Exercise caution when handling or moving the product. Always read and follow any specific handling instructions provided, and consider using professional movers if necessary to ensure safe transport, installation, and decommissioning.

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 and Physical Security Recommendations

Install the Product in a Secure Location

Custodians should secure products from unauthorized physical access.

- Access should be restricted to those who require access to maintain the product.
- Restricted areas should be clearly marked for authorized personnel only.
- Restricted areas should be secured by locked doors.
- Access to the restricted areas should produce a physical or electronic audit trail.

Secure Access to the User Interface and Communication Ports of the Product

Install the product in a rack or cage that can be locked with a suitable key, or other physical methods. This will prevent access to the user interface and the physical communication ports of the product.

Description of Risk

Attackers with physical access to the product can access the equipment without authorization.

Recommendations

Physical security must be in place to control physical access to restricted areas and facilities containing the product. The product should be located under lock and key or protected by physical restraints that prevent unauthorized access or removal from restricted areas. Access to areas containing the product should only be granted to personnel who require access based on their job function.

Restricted areas should display signs that clearly indicate access is for authorized personnel only. Facilities containing the product should give minimum indication of their purpose, with no obvious signs identifying the presence of related functions.

Physical access control devices, such as key card readers, doors and cabinet locks, should be tested prior to use and on a periodic basis (e.g. annually). Resource custodians should produce physical or electronic audit trails to record all personnel's physical access to restricted areas for security incident investigation. Inventory of who has physical access to control devices should be regularly reviewed, and any inappropriate access identified during the review should be promptly removed.

Firmware Updates

Schneider Electric strongly recommends that you review the security bulletins that relate to your Schneider Electric product.

For information on new and updated security bulletins, visit the **Schneider Electric Security Bulletins web page**.

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) L1, L2, L3, PE (dual mains)(1)		
	Input voltage range at full load (V)	304-456(2)	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 Icc = 35 kA		
	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 Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		

(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
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(3); ≤ 140% for 1 second (4)		
	Output power factor	1		
	Nominal output current (A)	30	29	28
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		
Battery	Charging power in % of output power(5)	60% to 7.5%		
	Maximum charging power (kW)	12		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(3) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(4) Total battery voltage must be lower than 460 V.
(5) At 0-100% load.

Specifications for 30 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(6)		
	Input voltage range at full load (V)	304-456(7)	320-460	332-477
	Frequency (Hz)	40-70		
	Nominal input current (A)	48	45	44
	Maximum input current (A)	60	57	57
	Total harmonic distortion (THDI)	≤ 3% for linear load		
	Input power factor	> 0.99 (full load)		
	Maximum short circuit rating	Rated conditional short-circuit current Icc = 35 kA		
	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)	46	44	42
	Maximum short circuit rating	Rated conditional short-circuit current Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(8); ≤ 140% for 1 second (9)		
	Output power factor	1		
	Nominal output current (A)	45	43	42
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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)	96 A / 220 ms		

(6) 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.
(7) Measured at 30 °C.
(8) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(9) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(10)	60% to 7.5%		
	Maximum charging power (kW)	18		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 0 mV/°C/cell for T < 25 °C		
	Battery current at full load and nominal battery voltage (A)	66		
	Battery current at full load and minimum battery voltage (A)	78		
	Ripple current	< 5% C20 (5-minute runtime)		
	Battery test	Manual/automatic (selectable)		
	Maximum short circuit rating	25 kA		

(10) At 0-100% load.

Specifications for 40 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(11)		
	Input voltage range at full load (V)	304-456(12)	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 Icc = 35 kA		
	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 Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(13); ≤ 140% for 1 second (14)		
	Output power factor	1		
	Nominal output current (A)	61	58	56
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(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.
(13) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(14) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(15)	60% to 7.5%		
	Maximum charging power (kW)	24		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(15) At 0-100% load.

Specifications for 50 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(16)		
	Input voltage range at full load (V)	304-456(17)	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(18); ≤ 140% for 1 second (19)		
	Output power factor	1		
	Nominal output current (A)	76	73	70
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(16) 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.
(17) Measured at 30 °C.
(18) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(19) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(20)	60% to 7.5%		
	Maximum charging power (kW)	30		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 0 mV/°C/cell for T < 25 °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		

(20) At 0-100% load.

Specifications for 60 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(21)		
	Input voltage range at full load (V)	304-456(22)	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 Icc = 35 kA		
	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 Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(23); ≤ 140% for 1 second (24)		
	Output power factor	1		
	Nominal output current (A)	91	87	84
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(21) 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.
(22) Measured at 30 °C.
(23) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(24) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(25)	60% to 7.5%		
	Maximum charging power (kW)	36		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 0 mV/°C/cell for T < 25 °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		

(25) At 0-100% load.

Specifications for 80 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(26)		
	Input voltage range at full load (V)	304-456(27)	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 Icc = 35 kA		
	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 Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(28); ≤ 140% for 1 second (29)		
	Output power factor	1		
	Nominal output current (A)	122	116	112
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(26) 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.
(27) Measured at 30 °C.
(28) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(29) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(30)	60% to 7.5%		
	Maximum charging power (kW)	48		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(30) At 0-100% load.

Specifications for 90 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(31)		
	Input voltage range at full load (V)	304-456(32)	320-460	332-477
	Frequency (Hz)	40-70		
	Nominal input current (A)	144	135	132
	Maximum input current (A)	180	171	171
	Total harmonic distortion (THDI)	≤ 3% for linear load		
	Input power factor	> 0.99 (full load)		
	Maximum short circuit rating	Rated conditional short-circuit current Icc = 35 kA		
	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)	138	132	126
	Maximum short circuit rating	Rated conditional short-circuit current Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(33); ≤ 140% for 1 second (34)		
	Output power factor	1		
	Nominal output current (A)	135	130	126
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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)	288 A / 220 ms		

(31) 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.
(32) Measured at 30 °C.
(33) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(34) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(35)	60% to 7.5%		
	Maximum charging power (kW)	54		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 0 mV/°C/cell for T < 25 °C		
	Battery current at full load and nominal battery voltage (A)	198		
	Battery current at full load and minimum battery voltage (A)	234		
	Ripple current	< 5% C20 (5-minute runtime)		
	Battery test	Manual/automatic (selectable)		
	Maximum short circuit rating	25 kA		

(35) At 0-100% load.

Specifications for 100 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(36)		
	Input voltage range of full load (V)	304-456(37)	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤125% for 10 minutes; ≤150% for 1 minute Bypass operation: ≤110% continuous; ≤125% for 10 minutes; ≤150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(38); ≤ 140% for 1 second (39)		
	Output power factor	1		
	Nominal output current (A)	152	145	140
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(36) Common N with bypass. For dual mains systems with upstream 4-pole diconnect devices: install an N connection with the UPS input cables (L1, L2, L3, N, PE) and connect Input N with Bypass N.
(37) Measured at 30 °C.
(38) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(39) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(40)	60% to 7.5%		
	Maximum charging power (kW)	60		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(40) At 0-100% load.

Specifications for 120 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(41)		
	Input voltage range at full load (V)	304-456(42)	320-460	332-477
	Frequency (Hz)	40-70		
	Nominal input current (A)	192	182	176
	Maximum input current (A)	240	228	228
	Total harmonic distortion (THDI)	≤ 3% for linear load		
	Input power factor	> 0.99 (full load)		
	Maximum short circuit rating	Rated conditional short-circuit current Icc = 35 kA		
	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)	186	176	170
	Maximum short circuit rating	Rated conditional short-circuit current Icc = 35 kA		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(43); ≤ 140% for 1 second (44)		
	Output power factor	1		
	Nominal output current (A)	182	174	168
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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)	384 A / 220 ms		

(41) 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.
(42) Measured at 30 °C.
(43) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(44) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(45)	60% to 7.5%		
	Maximum charging power (kW)	72		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 0 mV/°C/cell for T < 25 °C		
	Battery current at full load and nominal battery voltage (A)	266		
	Battery current at full load and minimum battery voltage (A)	312		
	Ripple current	< 5% C20 (5-minute runtime)		
	Battery test	Manual/automatic (selectable)		
	Maximum short circuit rating	25 kA		

(45) At 0-100% load.

Specifications for 150 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(46)		
	Input voltage range at full load (V)	304-456(47)	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(48); ≤ 140% for 1 second (49)		
	Output power factor	1		
	Nominal output current (A)	228	217	209
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(46) 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.
(47) Measured at 30 °C.
(48) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(49) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(50)	60% to 7.5%		
	Maximum charging power (kW)	90		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(50) At 0-100% load.

Specifications for 200 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(51)		
	Input voltage range at full load (V)	304-456(52)	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(53); ≤ 140% for 1 second (54)		
	Output power factor	1		
	Nominal output current (A)	304	289	279
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(51) 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.
(52) Measured at 30 °C.
(53) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(54) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(55)	60% to 7.5%		
	Maximum charging power (kW)	120		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(55) At 0-100% load.

Specifications for 250 kW UPS

	Voltage (V)	380	400	415
Input	Connections	L1, L2, L3, N, PE (single mains) L1, L2, L3, PE (dual mains)(56)		
	Input voltage range at full load (V)	304-456(57)	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	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 Icc = 35 kA Device: Refer to Required Upstream Protection, page 39.		
	Protection	Dry contact signal for backfeed protection		
Output	Connections	L1, L2, L3, N, PE		
	Output voltage regulation	±1% (symmetrical load) ±3% (asymmetrical load)		
	Overload capacity	Normal operation: ≤ 110% for 60 minutes; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Bypass operation: ≤ 110% continuous; ≤ 125% for 10 minutes; ≤ 150% for 1 minute Battery operation: ≤ 125% for 1 minute; ≤ 150% for 1 second(58); ≤ 140% for 1 second (59)		
	Output power factor	1		
	Nominal output current (A)	380	361	348
	Total harmonic distortion (THDU)	1% (linear load) 3% (non-linear load)		
	Output frequency (Hz)	50/60 Hz bypass synchronized 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		

(56) 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.
(57) Measured at 30 °C.
(58) Total battery voltage must be at least 460 V. If it previously fell below 460 V, it must rise to 470 V with 10 V threshold before the condition is considered recovered.
(59) Total battery voltage must be lower than 460 V.

	Voltage (V)	380	400	415
Battery	Charging power in % of output power(60)	60% to 7.5%		
	Maximum charging power (kW)	150		
	Nominal battery voltage (VDC)	384 to 576		
	Nominal float voltage (VDC)	436 to 654		
	End of discharge voltage (full load) (VDC)	307 to 461		
	Temperature compensation (per cell)	-3.3 mV/°C/cell for T ≥ 25 °C 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		

(60) At 0-100% load.

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 (C10H3TM100)	NSX100H TM80D (C10H3TM080)	NSX250H TM200 (C25H3TM200)	NSX160H TM160 (C16H3TM160)
Io	100	80	200	160
Ir	100	80	200	160
Isd	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 MiC.2.3 (C40H32D400)	NSX250H TM250 (C25H3TM250)	NSX400H MiC.2.3 (C40H32D400)	NSX400H MiC.2.3 (C40H32D400)	NSX630H MiC.2.3 (C63H32D630)	NSX400H MiC.2.3 (C40H32D400)
Io	320	250	400	320	500	400
Ir	0.95	250	1	1	1	1
Isd	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 (C10H4TM100)	NSX160H TM160 (C16H4TM160)	NSX250H TM200 (C25H4TM200)	NSX400H MiC.2.3 (C40H42D400)
Io	100	160	200	280
Ir	100	0.8	200	0.95
Isd	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 MiC.2.3 (C40H42D400)	NSX400H MiC.2.3 (C40H42D400)	NSX400H MiC.2.3 (C40H42D400)	NSX400H MiC.2.3 (C40H42D400)	NSX630H MiC.2.3 (C63H42D630)	NSX400H MiC.2.3 (C40H42D400)
Io	320	280	400	320	500	400

UPS rating	150 kW		200 kW		250 kW	
	Input	Bypass	Input	Bypass	Input	Bypass
Ir	0.95	0.95	1	1	1	1
Isd	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 mm².

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 B.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 54.2 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.

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

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Refer to the installation manual provided with the auxiliary product.

NOTE: The DC cable sizes given here are recommendations – Always follow the specific instructions in the battery solution documentation for DC cable sizes and DC PE cable sizes and ensure that the DC cable sizes match the battery disconnect device rating.

50 kW UPS

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²))
Input	25	35	16
Bypass	16 (for 3-pole upstream protection) 35 (for 4-pole upstream protection)	35	16
Output	16	35	16
Battery	35	35(61)	16

(61) Only applicable for battery solutions with midpoint.

100 kW UPS

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²))
Input	70	2 x 70	35
Bypass	70 (for 3-pole upstream protection) 2 x 70 (for 4-pole upstream protection)	2 x 70	35
Output	70	2 x 70	35
Battery	95	95(62)	50

150 kW UPS

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²))
Input	120	2 x 70	70
Bypass	120 (for 3-pole upstream protection) 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(62)	70

200 kW UPS

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²))
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(63)	120

250 kW UPS

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²))
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(63)	150

Recommended Bolt and Lug Sizes

Copper

Cable size (mm²)	Bolt size	Cable lug type
16	M10x40 mm	TLK 16-10
25	M10x40 mm	TLK 25-10

(62) Only applicable for battery solutions with midpoint.
(63) Only applicable for battery solutions with midpoint.

Copper (Continued)

Cable size (mm²)	Bolt size	Cable lug type
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

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 circuit 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 circuit 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 circuit 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

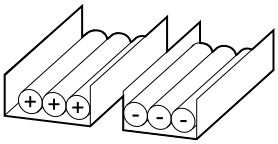
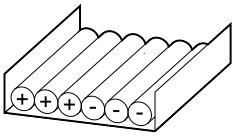
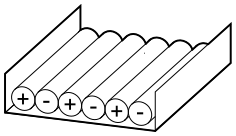
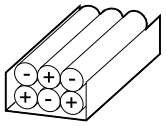
Battery circuit breaker rated DC voltage > Normal battery voltage	The normal voltage of the battery configuration is defined as the highest nominal occurring battery voltage. This can be equivalent to the float voltage which may be defined as **number of battery blocks x number of cells x cell float voltage**.
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 circuit 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 third 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. 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(64)	-25 °C to 55 °C
Relative humidity	0-95% non-condensing	0-95% non-condensing
Elevation	Designed for operation in 0-3000 m elevation. Derating required from 1000-3000 m with forced air cooling: Up to 1000 m: 1.000 Up to 1500 m: 0.975 Up to 2000 m: 0.950 Up to 2500 m: 0.925 Up to 3000 m: 0.900	
Audible noise(65)	68 dB at 70% load 74 dB at 100% load	
Protection class	IP20	
Color	Black	

NOTE: If the equipment is expected to remain in storage for more than 18 months from the date of receipt, please consult your Schneider Electric customer services representative for additional storage related requirements that will help to ensure the long-term reliability and performance of the equipment.

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. 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

(64) For temperatures between 40 °C and 50 °C, derate the load power rating to 75%.
(65) 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

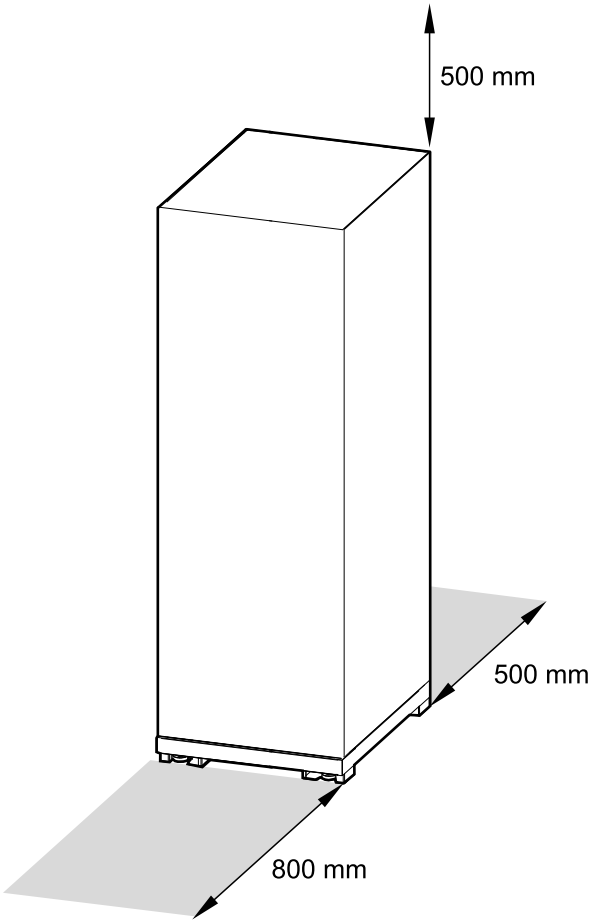
UPS with Four Internal Switches

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

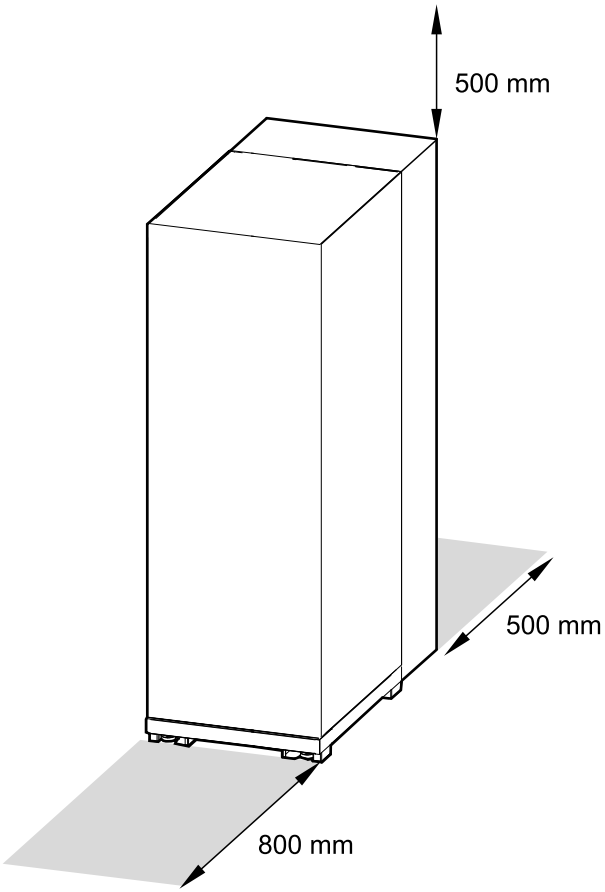
Clearance

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

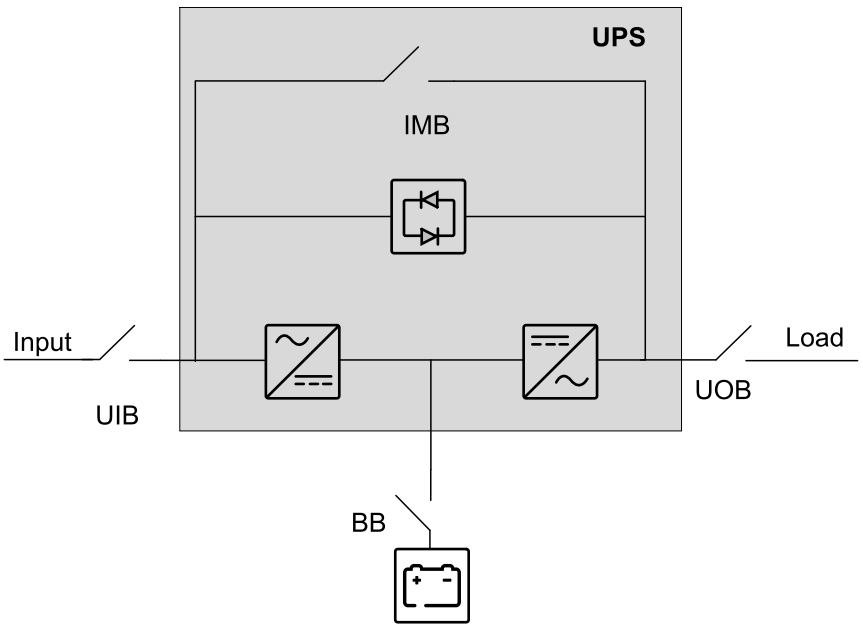
Single System Overview

UPS with One Internal Switch

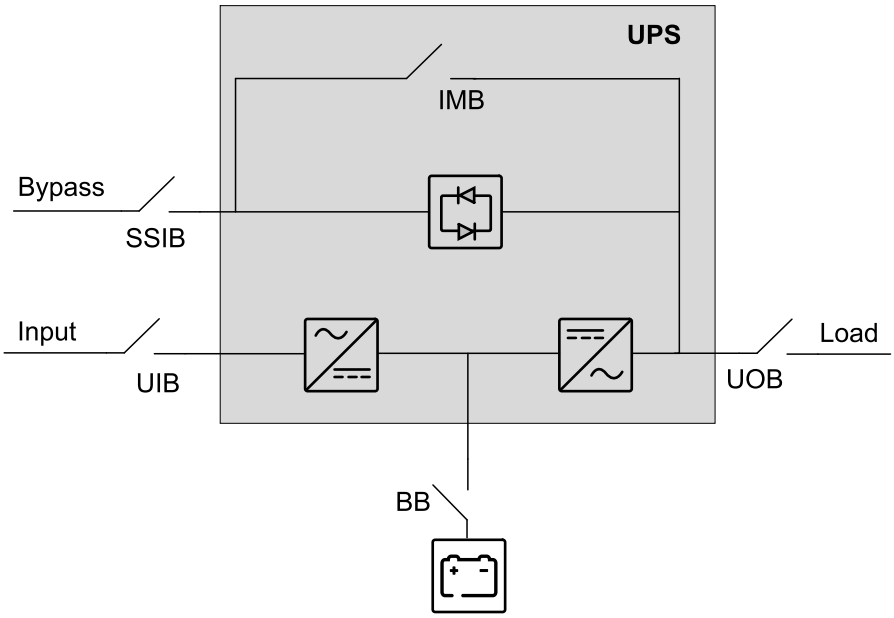
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
UOB	Unit output disconnect device
IMB	Internal maintenance disconnect device
BB	Battery disconnect device

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)



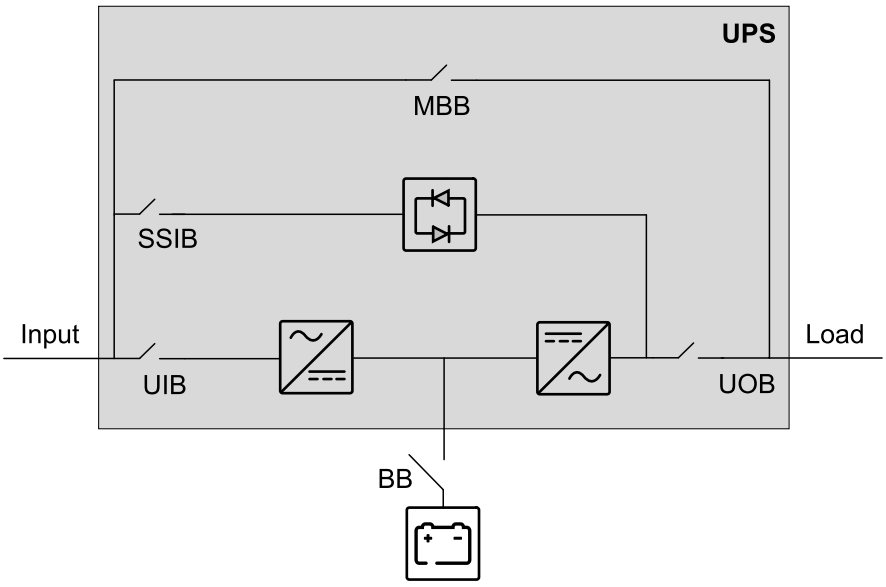
Single System – Dual Mains (One Internal Switch)



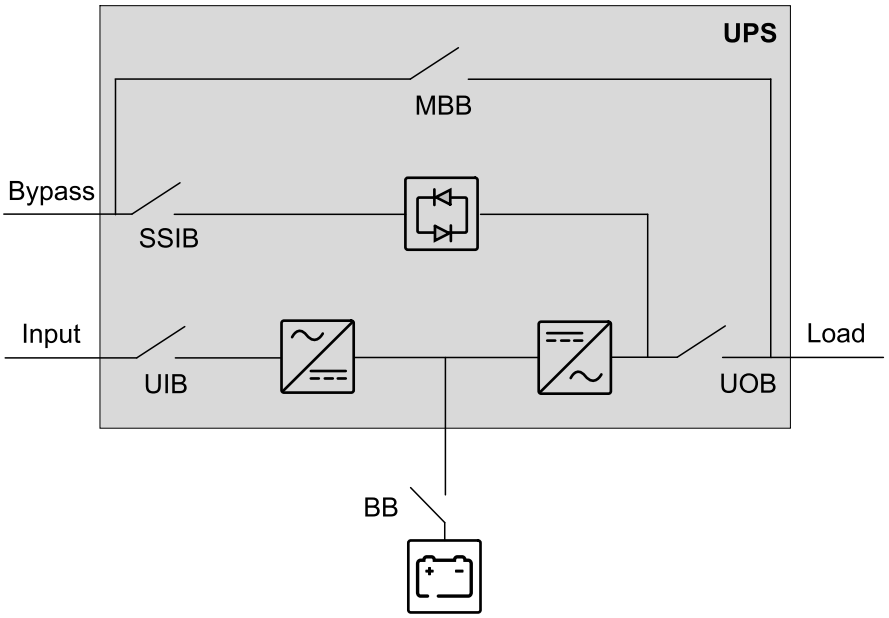
UPS with Four Internal Switches

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.

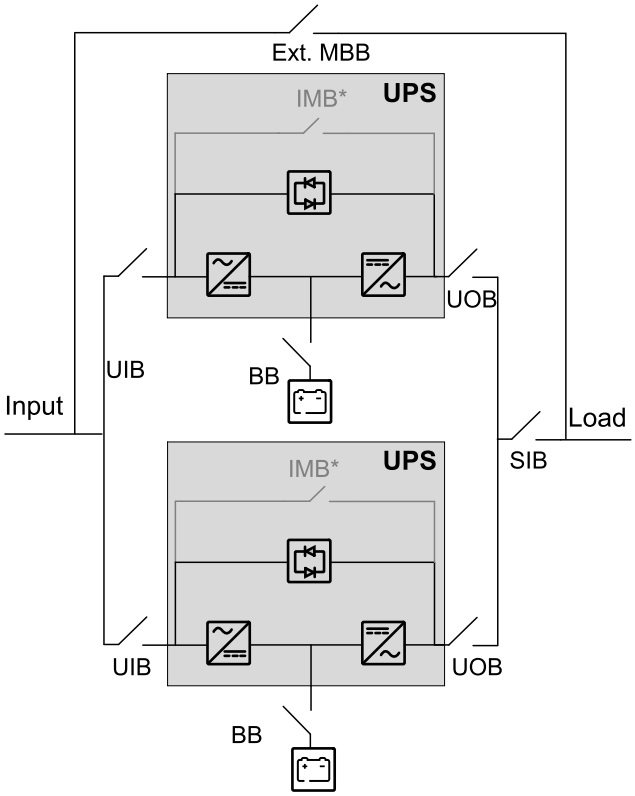
NOTE: In a parallel system, an external maintenance bypass disconnect device (Ext. MBB) must be provided and the internal maintenance disconnect device IMB and MBB (marked with an * in the diagrams) must be padlocked in the open position.

UPS with One Internal Switch

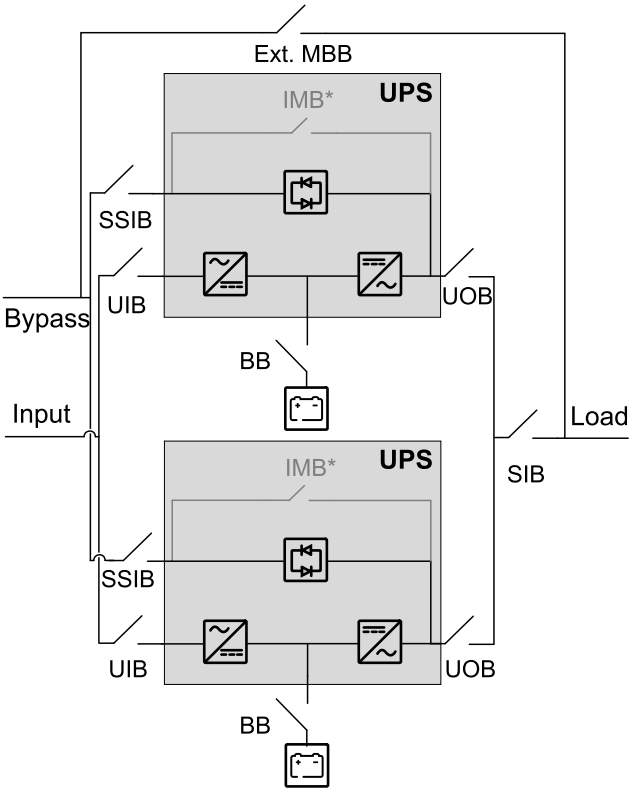
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
UOB	Unit output disconnect device
SIB	System isolation disconnect device
BB	Battery disconnect device
IMB	Internal maintenance disconnect device
Ext. MBB	External maintenance bypass disconnect device

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)



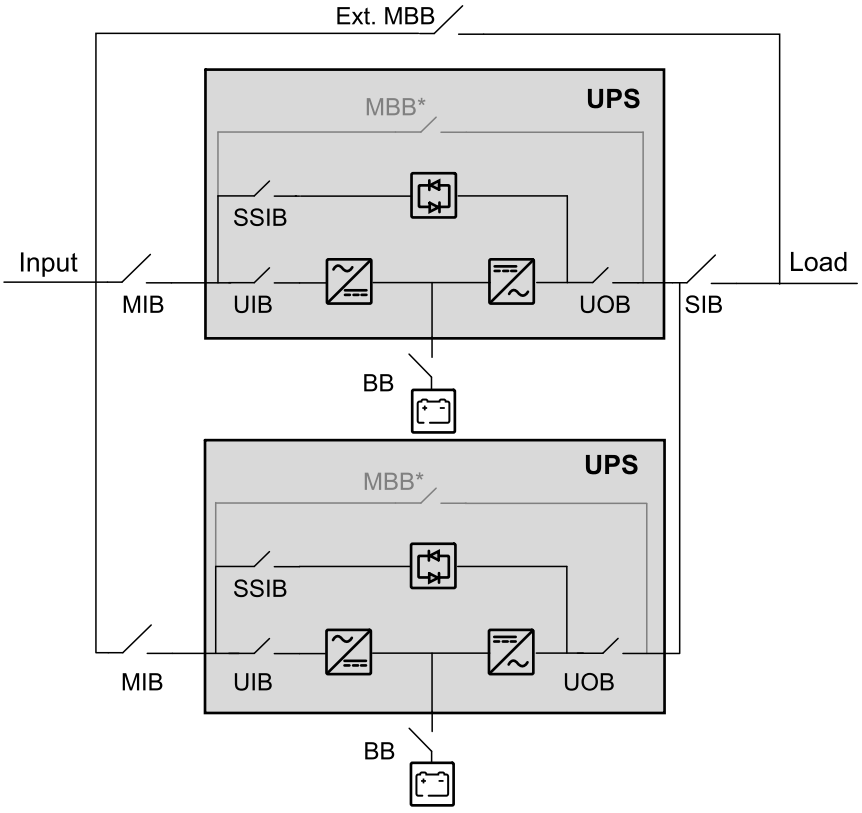
UPS with Four Internal Switches

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

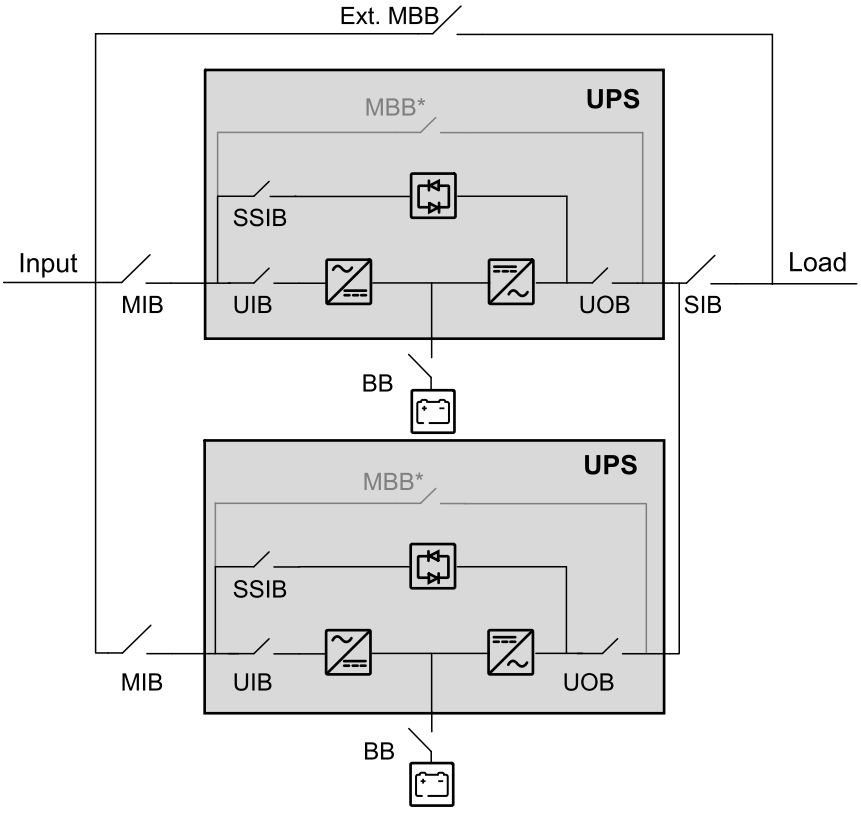
NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of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

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.

1. Perform one of the following procedures:
   - Without seismic anchoring: Position the UPS, page 56, or
   - With seismic anchoring: Install the Seismic Anchoring (Option), page 58.
2. Perform one of the following procedures:
   - Top cable entry: Prepare the UPS for Top Cable Entry, page 62, or
   - Bottom cable entry: Follow the installation manual provided with the bottom entry cabinet.
3. Install the External Synchronization Kit (Option), page 66.
4. **Only for TN-C earthing system:** Prepare for TN-C Earthing System, page 72.
5. **Only for UPS with one internal switch:** Install the Neutral Disconnection Kit (Option), page 73.
6. Perform one of the following procedures:
   - Connect the Power Cables for the UPS with One Internal Switch, page 75, or
   - Connect the Power Cables for the UPS with Four Internal Switches, page 78.
7. Connect the Signal Cables, page 82.
8. Connect the Signal Cables from Switchgear and Third-Party Auxiliary Products, page 85.
9. Connect the Modbus Cables, page 88.
10. **Only for parallel system**: Connect the PBUS Cables, page 90.
11. Install the Power Module(s), page 92.
12. Install the Redundant Intelligence Module (RIM) Kit (Option), page 94.
13. Final Installation, page 100.

For moving or decommissioning the UPS after installation has been completed, see Decommission or Move the UPS to a New Location, page 102.

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.

⚠WARNING

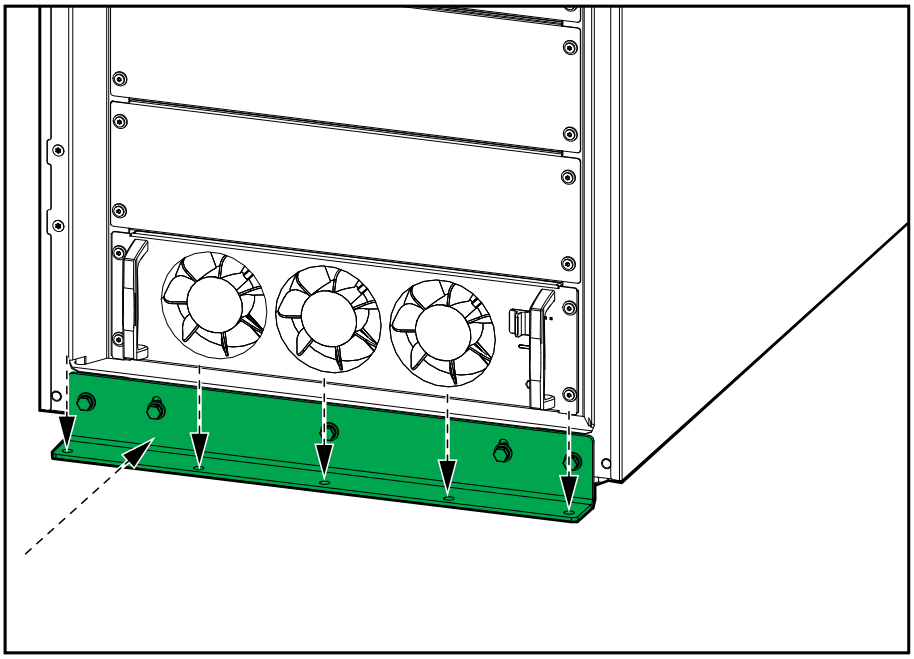
TIPPING HAZARD

- 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.

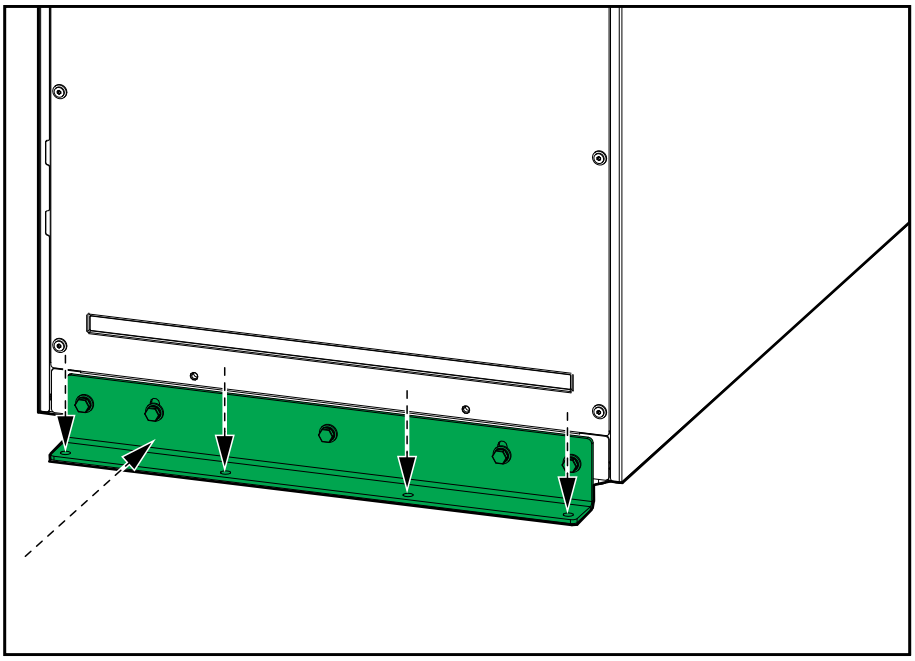
3. Reinstall the front transportation bracket on the UPS and mount it to the floor. Use appropriate hardware for the floor type – the hole diameter in the bracket is ø10 mm. The requirement is M8 strength grade 8.8 hardware.

Front View of the UPS



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 ø10 mm. The requirement is M8 strength grade 8.8 hardware.

Rear View of the UPS



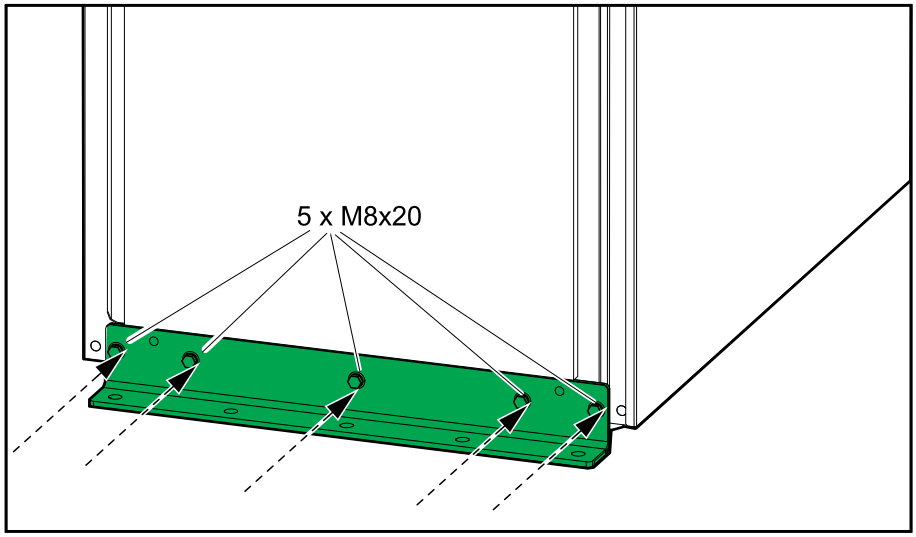
Install the Seismic Anchoring (Option)

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

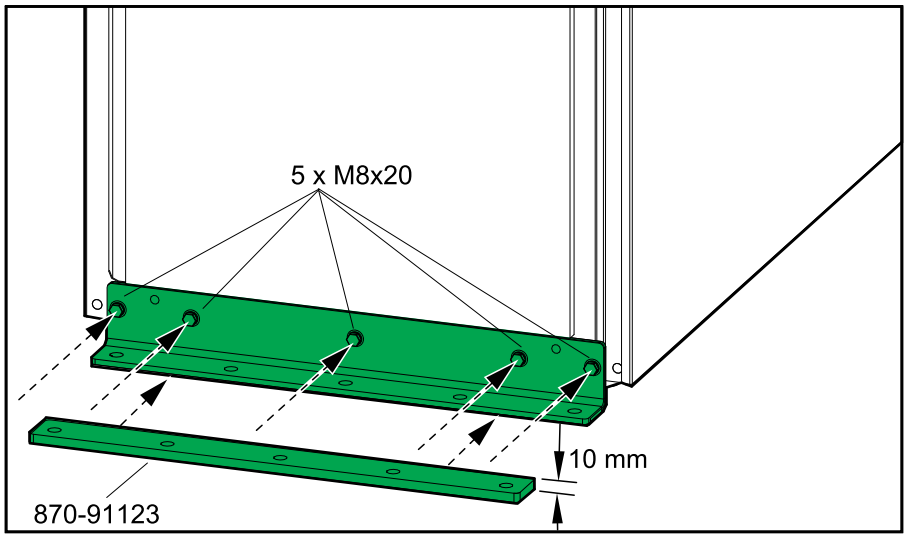
1. Push the UPS into the final position.
2. Install the rear anchoring bracket on the UPS with the provided M8 x 20 bolts.

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

Rear View of the UPS (without Shimming Sheet)

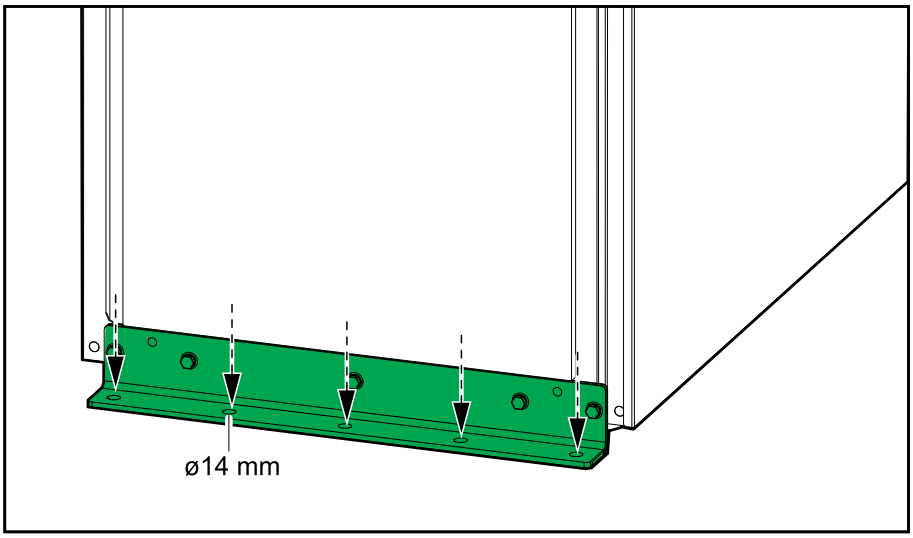


Rear View of the UPS (with Shimming Sheet)

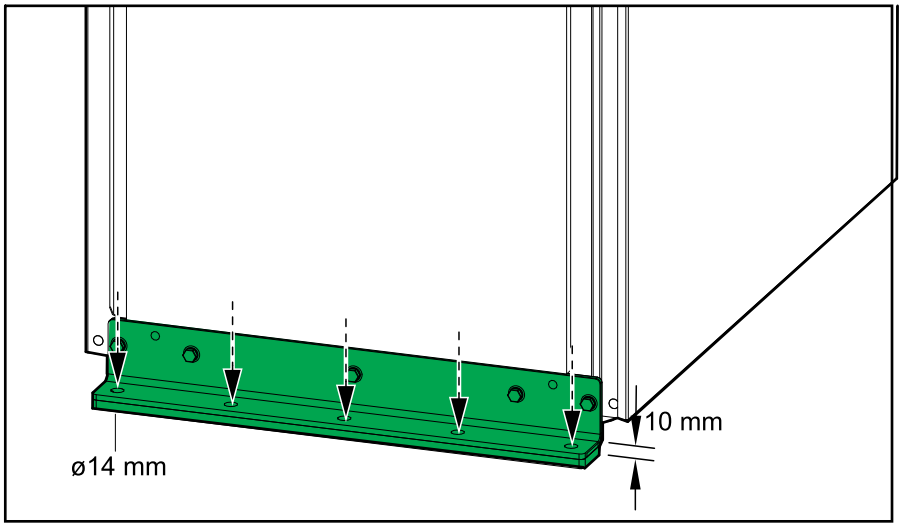


3. Mount the rear anchoring bracket to the floor. Use appropriate hardware for the floor type – the hole diameter in the rear anchors is ø14 mm. The requirement is M12 strength grade 8.8 hardware.

Rear View of the UPS (without Shimming Sheet)



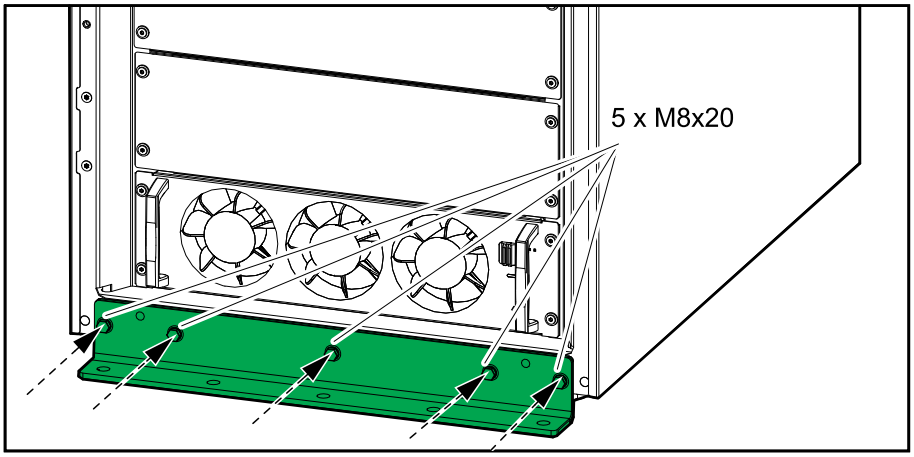
Rear View of the UPS (with Shimming Sheet)



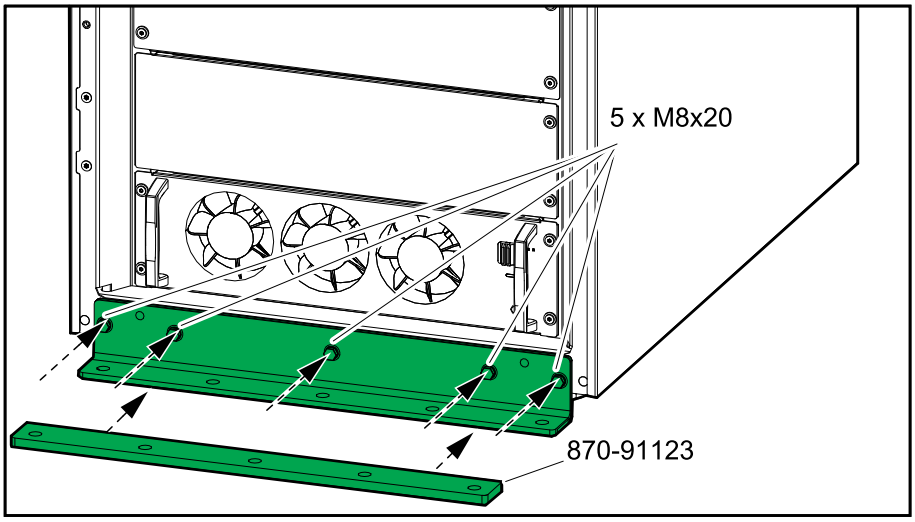
4. Install the front anchoring bracket on the UPS and mount it to the floor. Use appropriate hardware for the floor type – the hole diameter in the rear anchors is ø14 mm. The requirement is M12 strength grade 8.8 hardware.

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

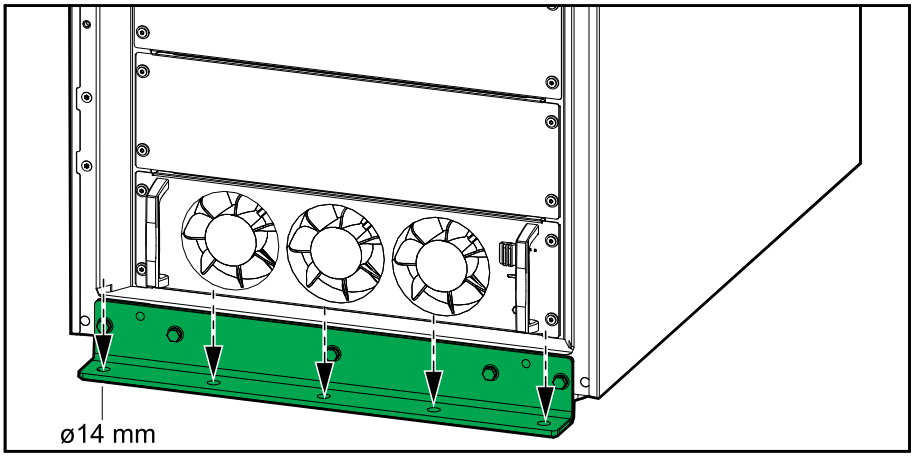
Front View of the UPS (without Shimming Sheet)



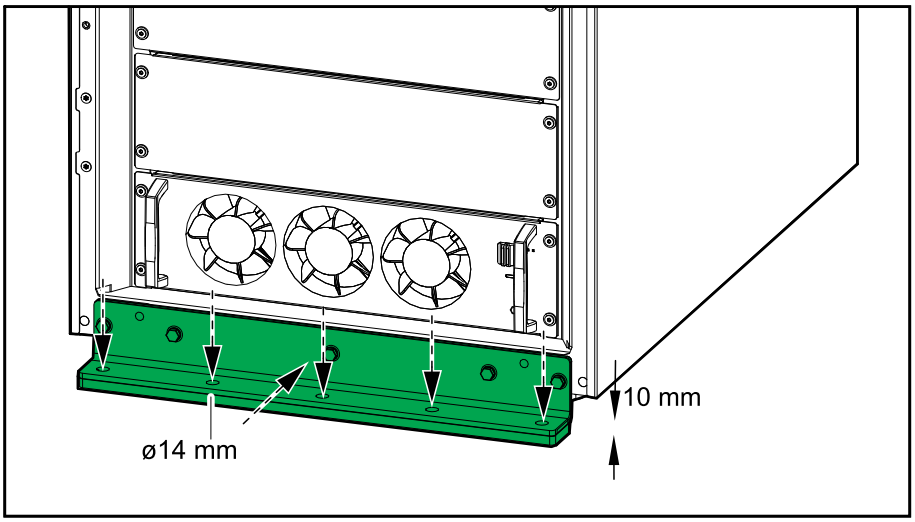
Front View of the UPS (with Shimming Sheet)



Front View of the UPS (without Shimming Sheet)



Front View of the UPS (with Shimming Sheet)



Prepare the UPS for Top Cable Entry

⚠⚠DANGER

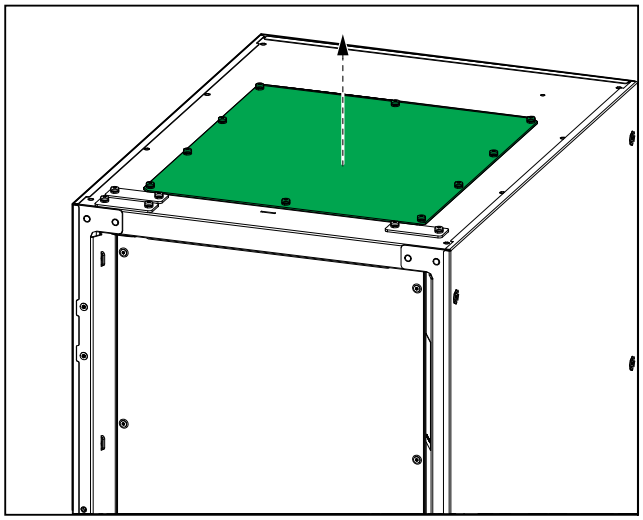
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

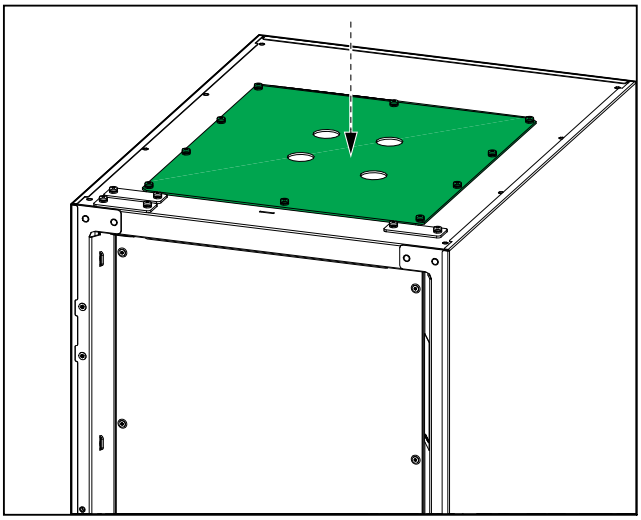
Failure to follow these instructions will result in death or serious injury.

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.

Front View of the UPS

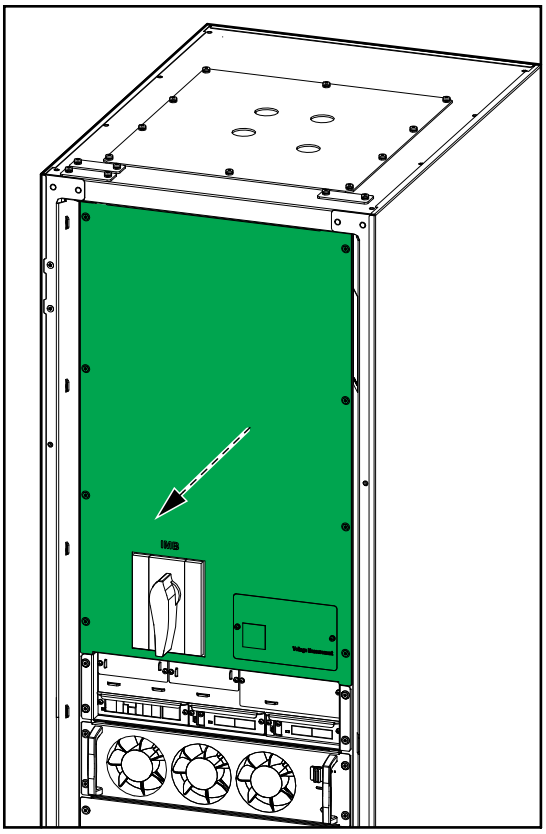


Front View of the UPS

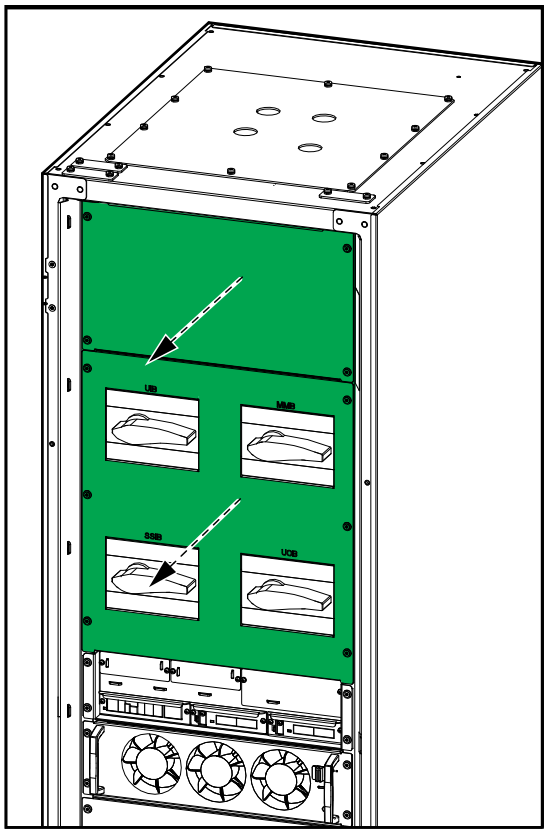


2. Remove the front cover(s) from the UPS.

Front View of the UPS – UPS with One Internal Switch

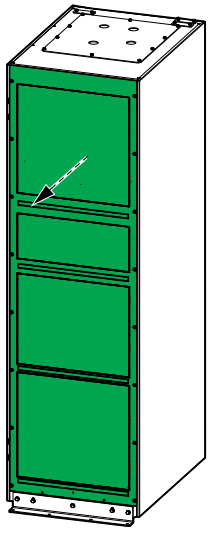


Front View of the UPS – UPS with Four Internal Switches



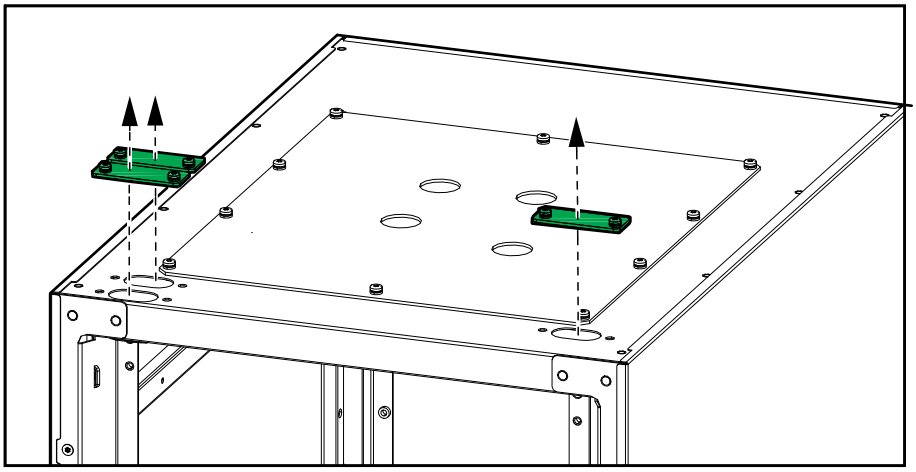
3. Remove the rear panel from the UPS.

Rear View of the UPS



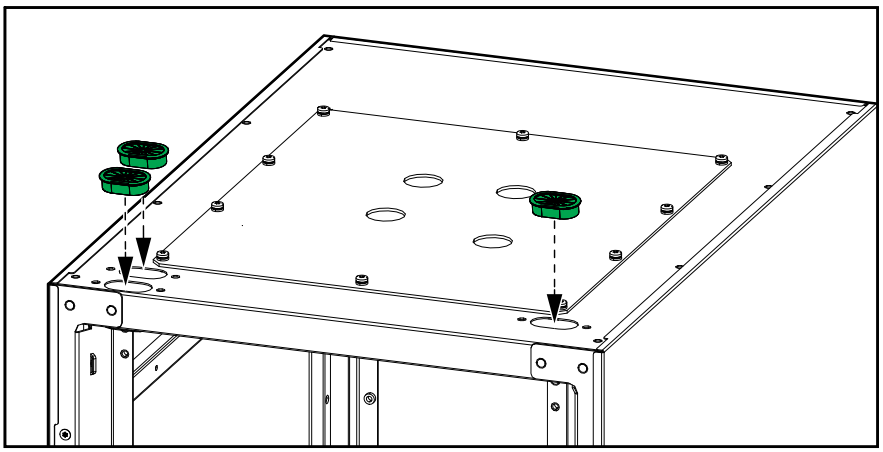
4. Remove the signal cable gland plates from the top of the UPS.

Front View of the UPS



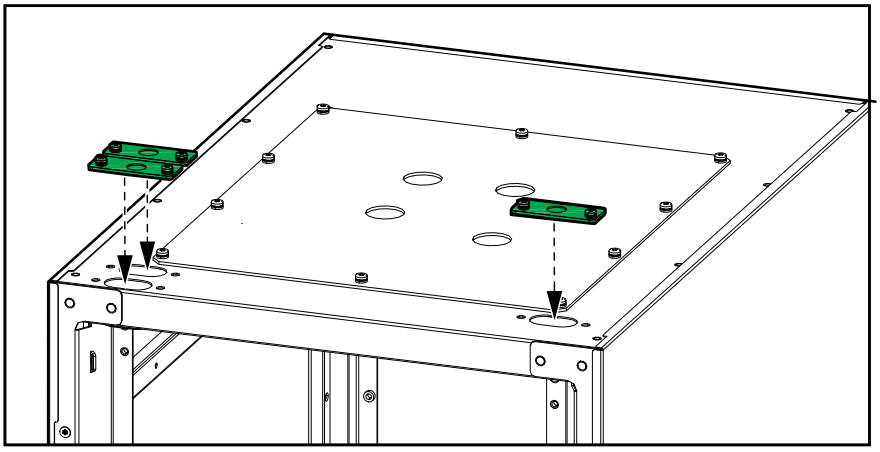
5. Perform one of the following:
   – Install the provided cable brush plugs from the hardware kit, OR

Front View of the UPS



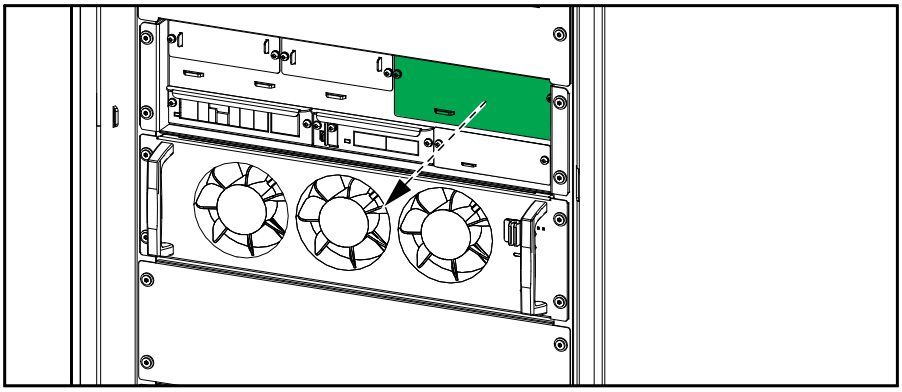
   – Drill holes in the signal cable gland plates. Install glands/grommets (not provided) if applicable. Reinstall the signal cable gland plates.

Front View of the UPS



6. Remove the cover from the signal connection terminals.

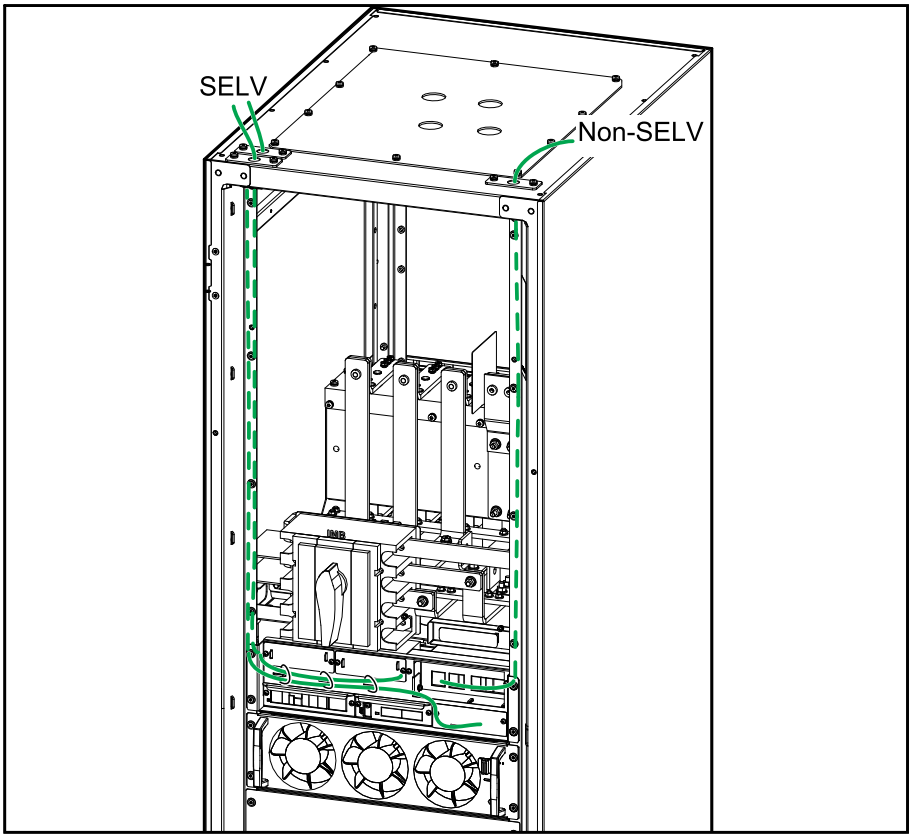
Front View of the UPS



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 82.

Front View of the UPS



Install the External Synchronization Kit (Option)

NOTE: Use the optional external synchronization kit SP3OPT013 for this procedure.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Check for absence of voltage for all the signal terminals on the external synchronization board 0P4809. When the external synchronization signal cables are installed, the terminals on the external synchronization board 0P4809 may be energized. Disconnect the fuse disconnector device at the source before removing the transparent protection cover.

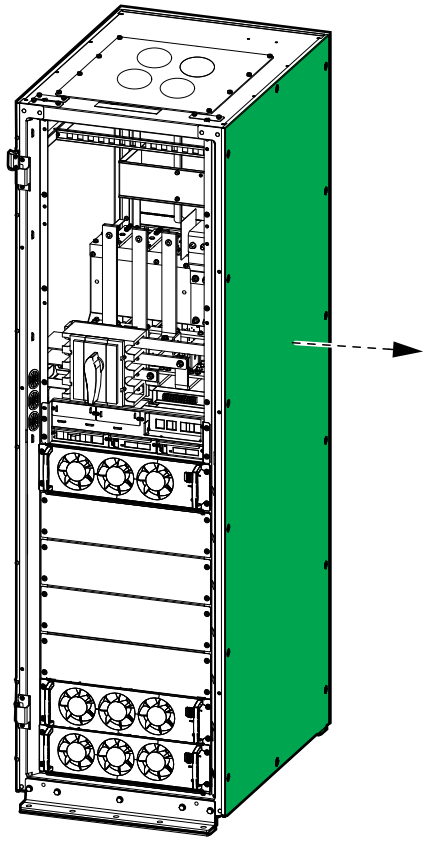
Failure to follow these instructions will result in death or serious injury.

Fuse and disconnector at source	Fuse disconnector marking	Cable size	Conduits
In = 2A, I.R=100 kA	Fuse disconnector identification number and external synchronization UPS number.	2 x 1.5 mm^2	–

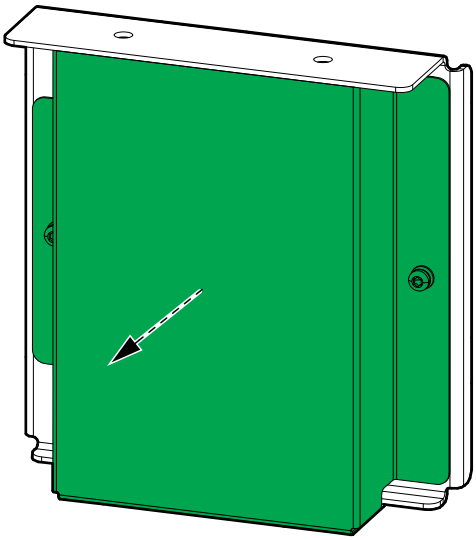
The maximum voltage for external synchronization is equal to the input voltage range given in the specifications. The Class 2/SELV cables for external synchronization shall be a double insulated cable and rated for 600 VAC.

1. Remove the right side panel from the UPS.

Front View of the UPS

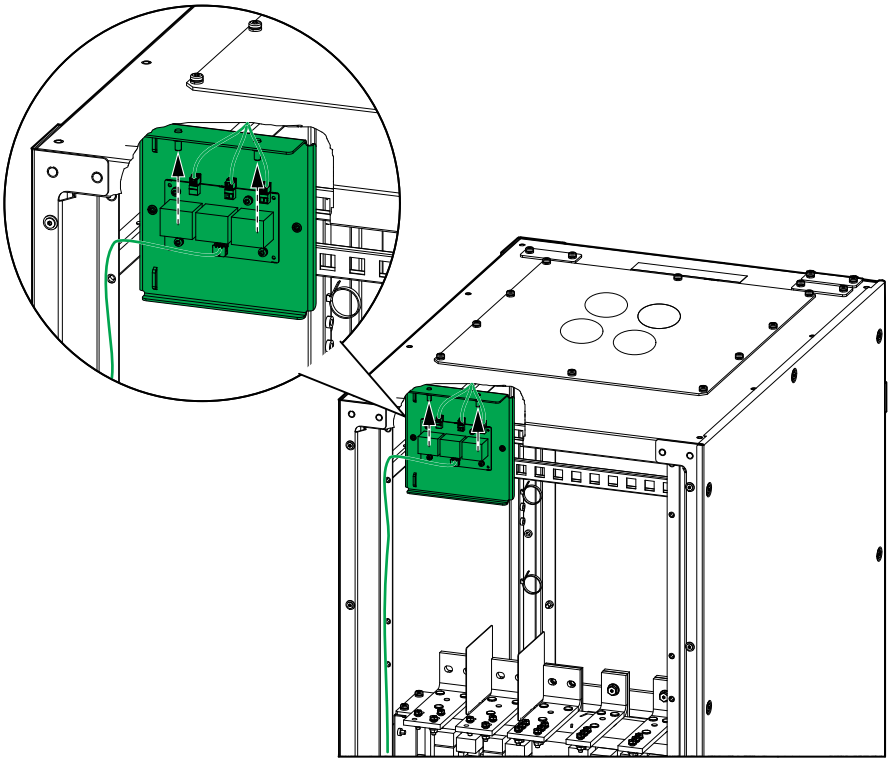


2. Remove the transparent protection cover from the external synchronization kit.



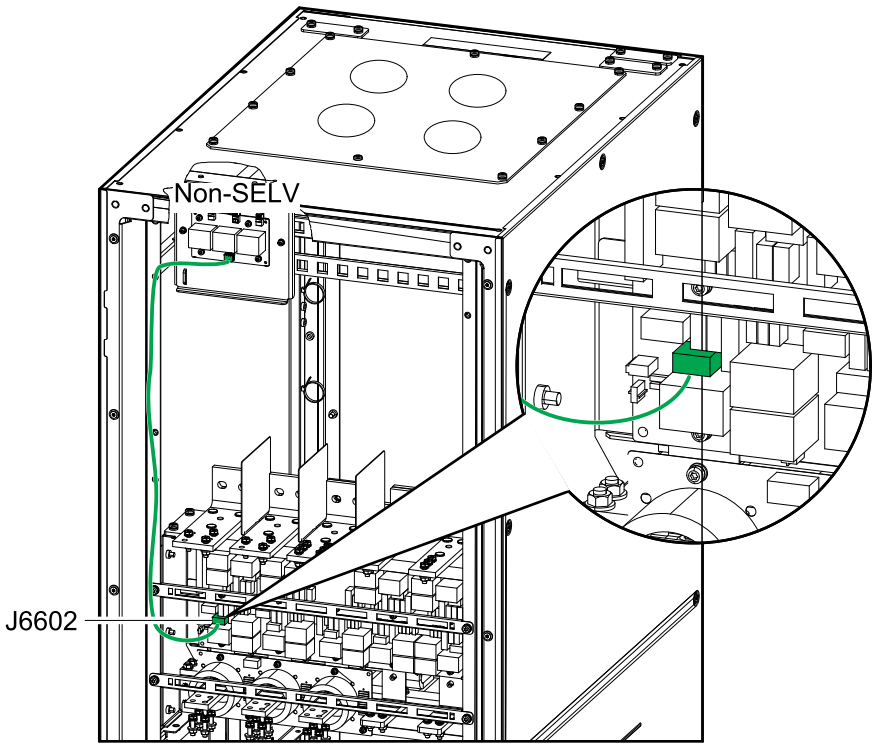
3. Connect the provided internal signal cable and external signal cables to the external synchronization assembly TME47797.
4. Install the external synchronization assembly TME47797 in the rear right side of the UPS with the two provided M6 screws. Torque to 5 Nm.

Rear View of the UPS



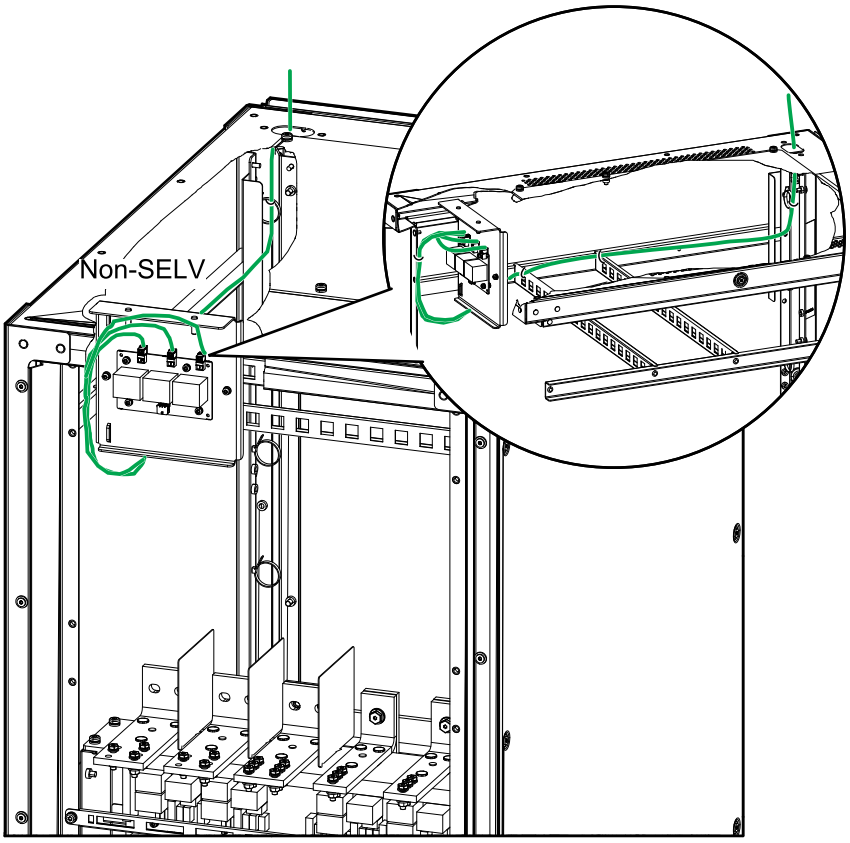
5. Connect the internal signal cable from the external synchronization board 0P4809 to UPS terminal J6602 as shown in the illustration.

Rear View of the UPS

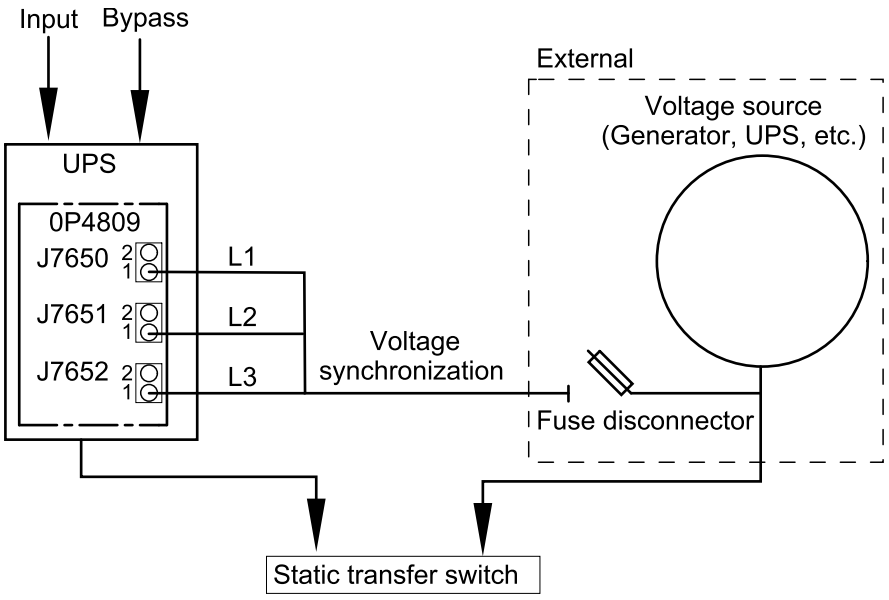


6. Connect the external signal cables for the external synchronization board 0P4809 and route the signal cables as shown in the illustration. Connect the external synchronization board per your configuration according to the following diagram. Ensure that fuse disconnector devices are installed at the source as shown in the diagrams.

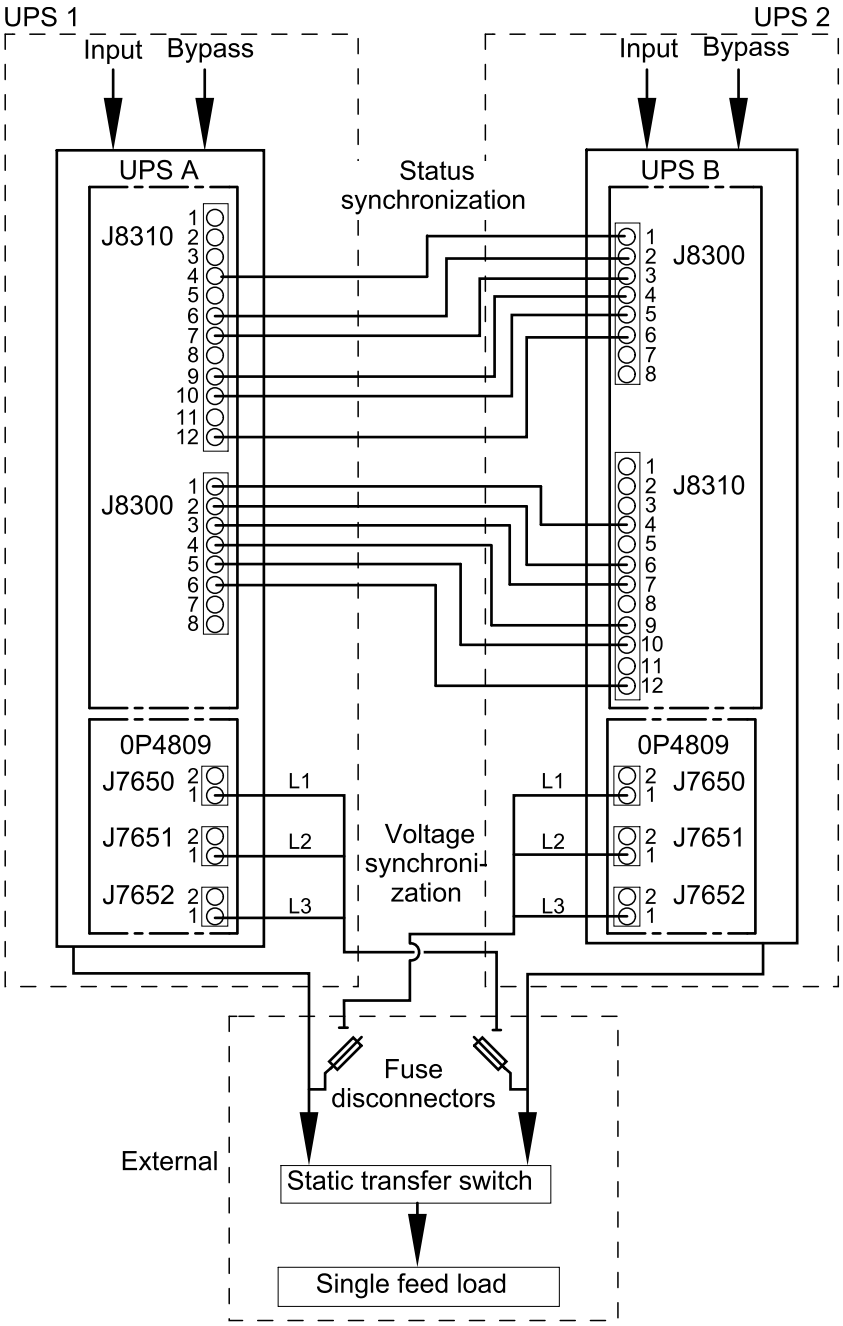
Rear View of the UPS



Signal Cable Connections for UPS Synchronization to a Fixed Voltage Source

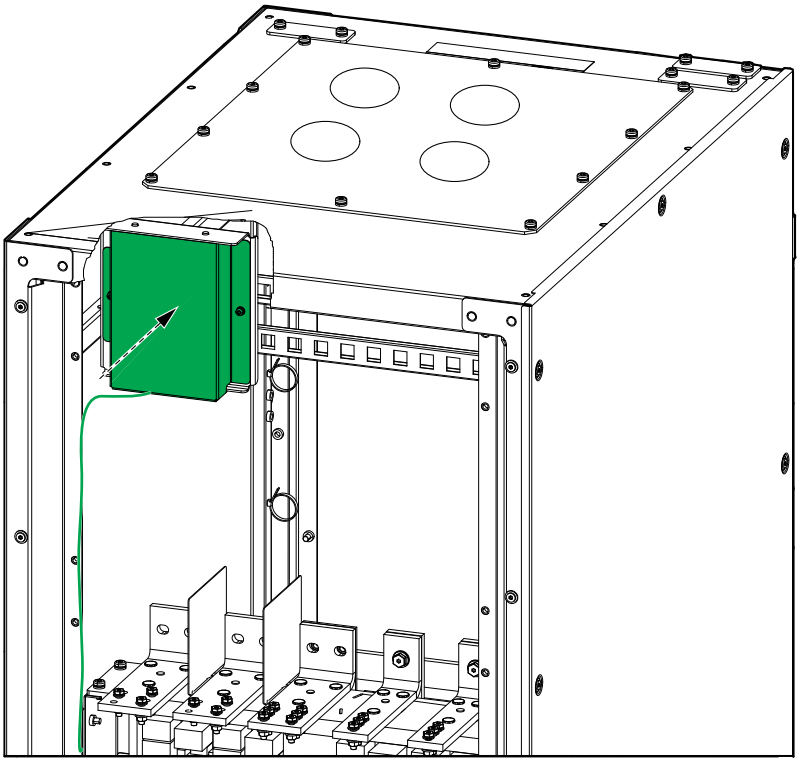


Signal Cable Connections for Advanced Dual UPS Synchronization



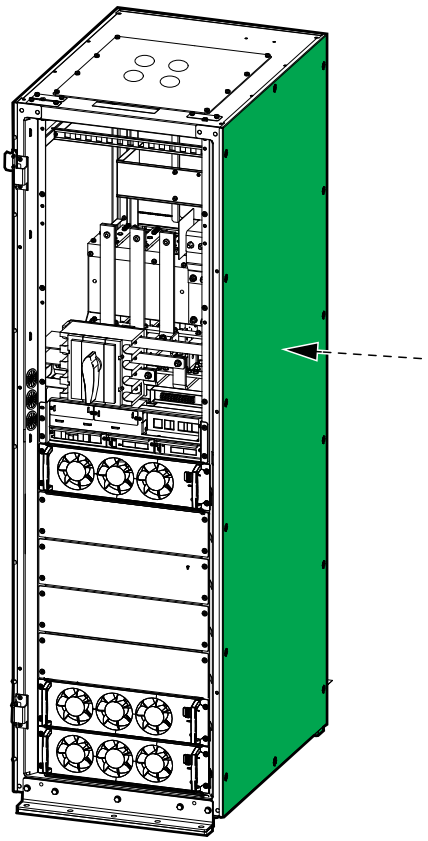
7. Reinstall the transparent protection cover on the external source synchronization kit.

Rear View of the UPS



8. Reinstall the right side panel on the UPS.

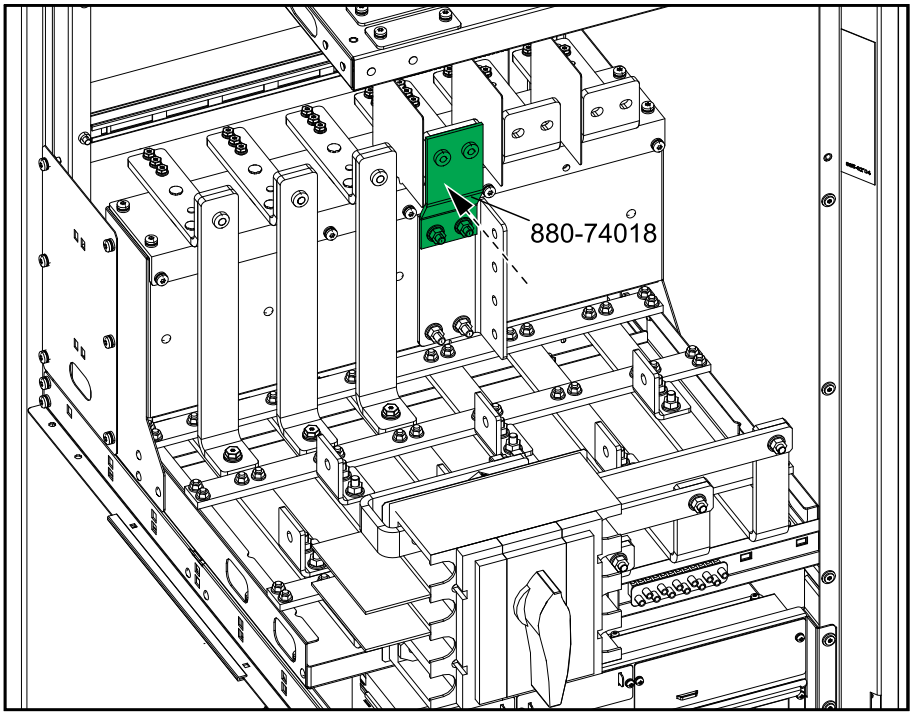
Front View of the UPS



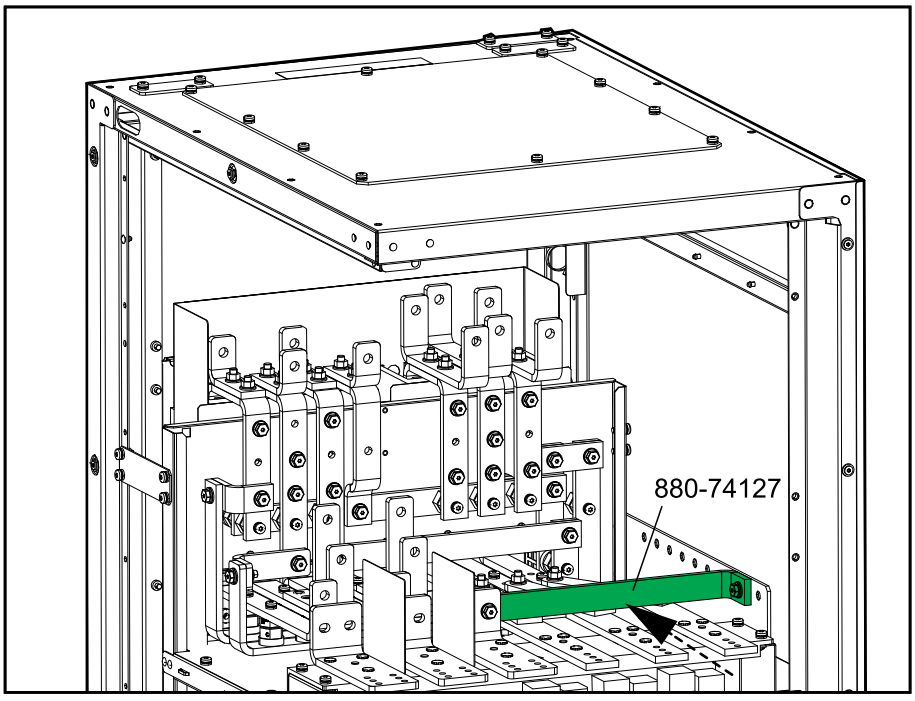
Prepare for TN-C Earthing System

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

Left Front View of the UPS – UPS with One Internal Switch



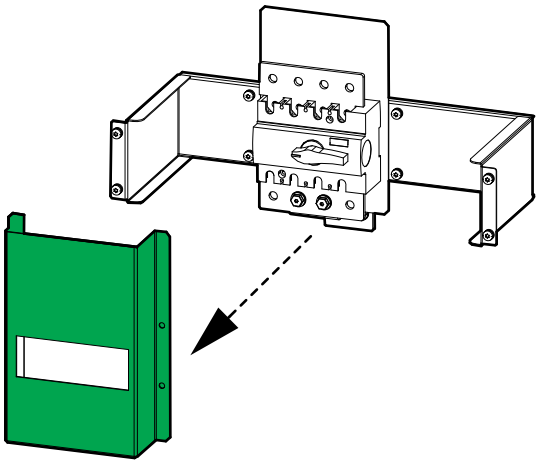
Left Front View of the UPS – UPS with Four Internal Switches



Install the Neutral Disconnection Kit (Option)

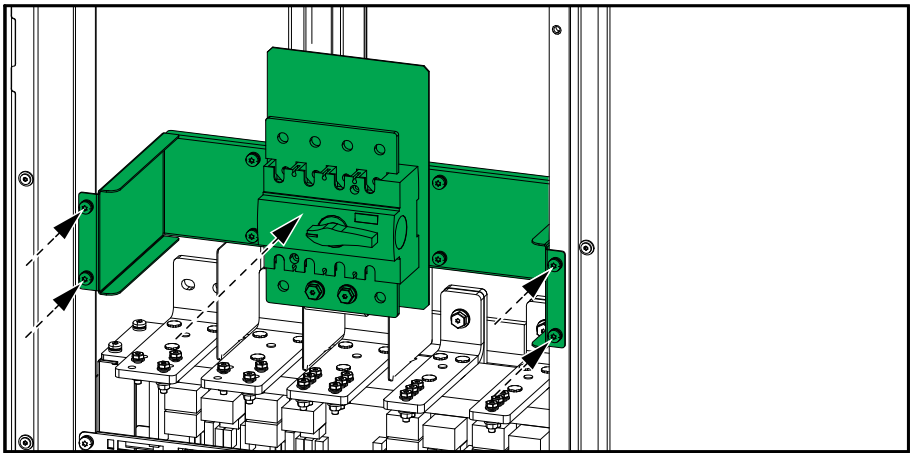
NOTE: Use the optional neutral disconnection kit SP3OPT004 for this procedure. The neutral disconnection kit is only applicable for a UPS with one internal switch.

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



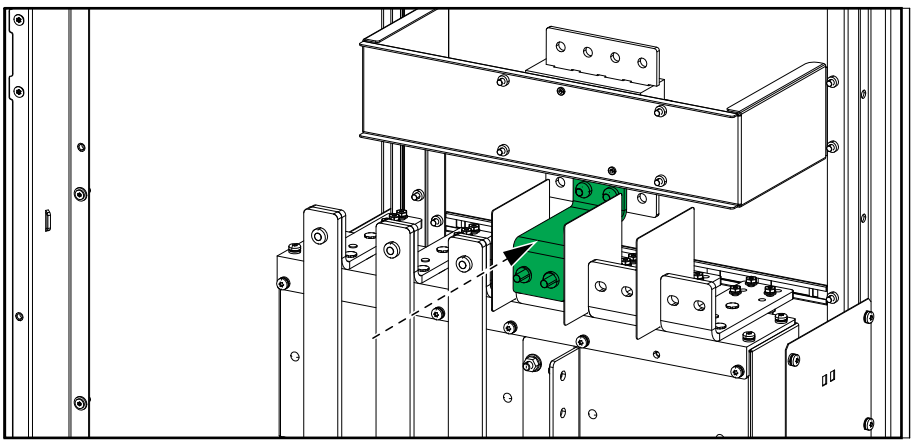
2. Install the neutral disconnection assembly to the rear posts in the UPS with the four provided screws.

Rear View of the UPS



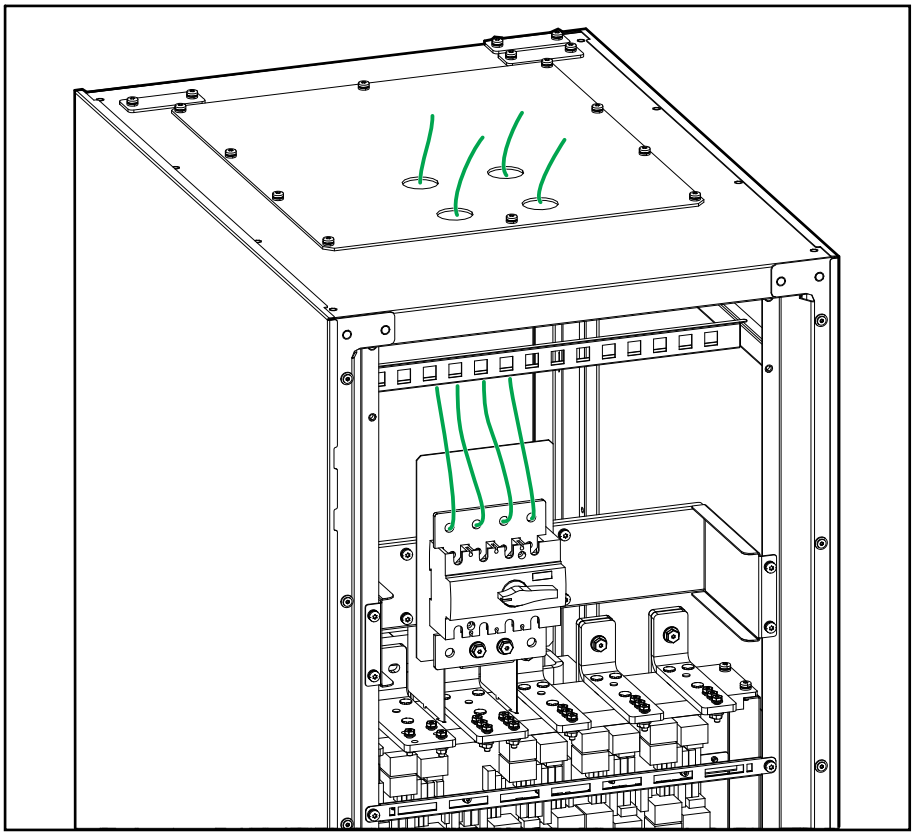
3. Connect the bottom busbar of the neutral disconnection assembly to the neutral busbar in the UPS with the two provided screws.

Front View of the UPS



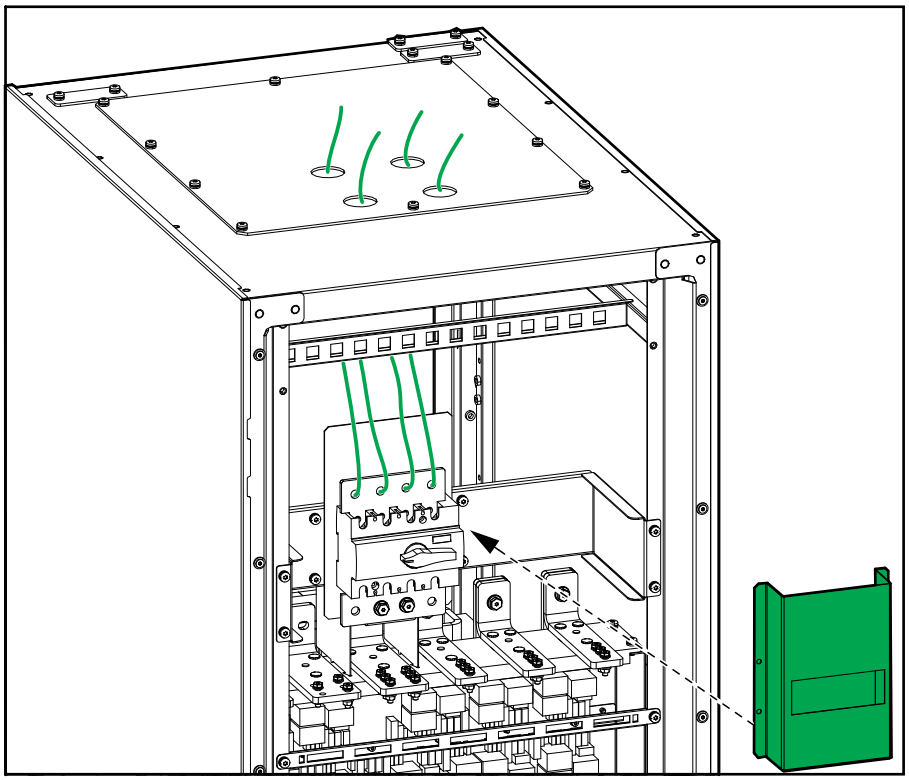
4. Connect the external neutral cables to the upper busbar of the neutral disconnection assembly.

Rear View of the UPS



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

Rear View of the UPS



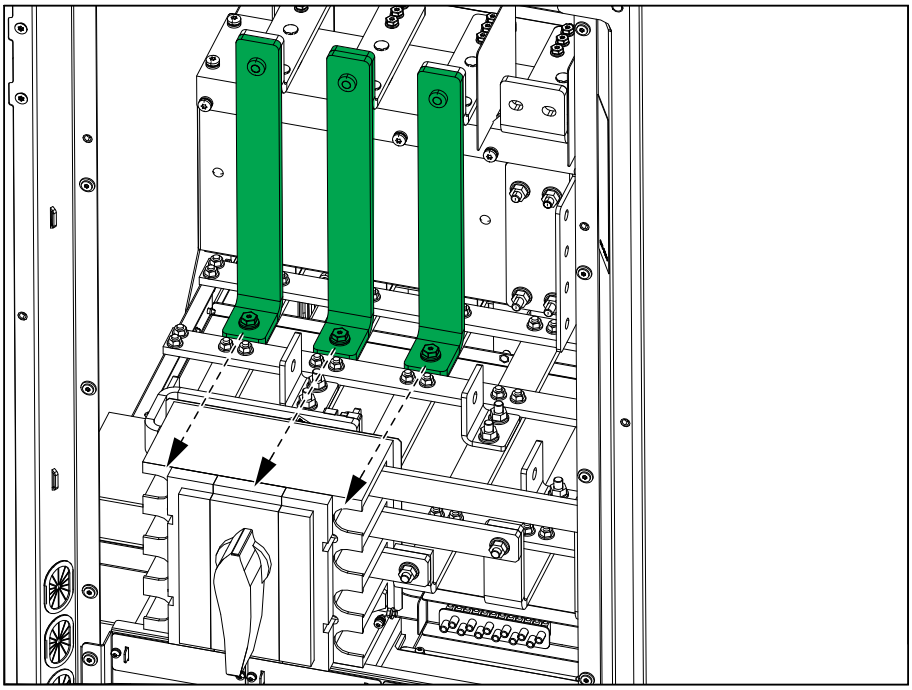
Connect the Power Cables for the UPS with One Internal Switch

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

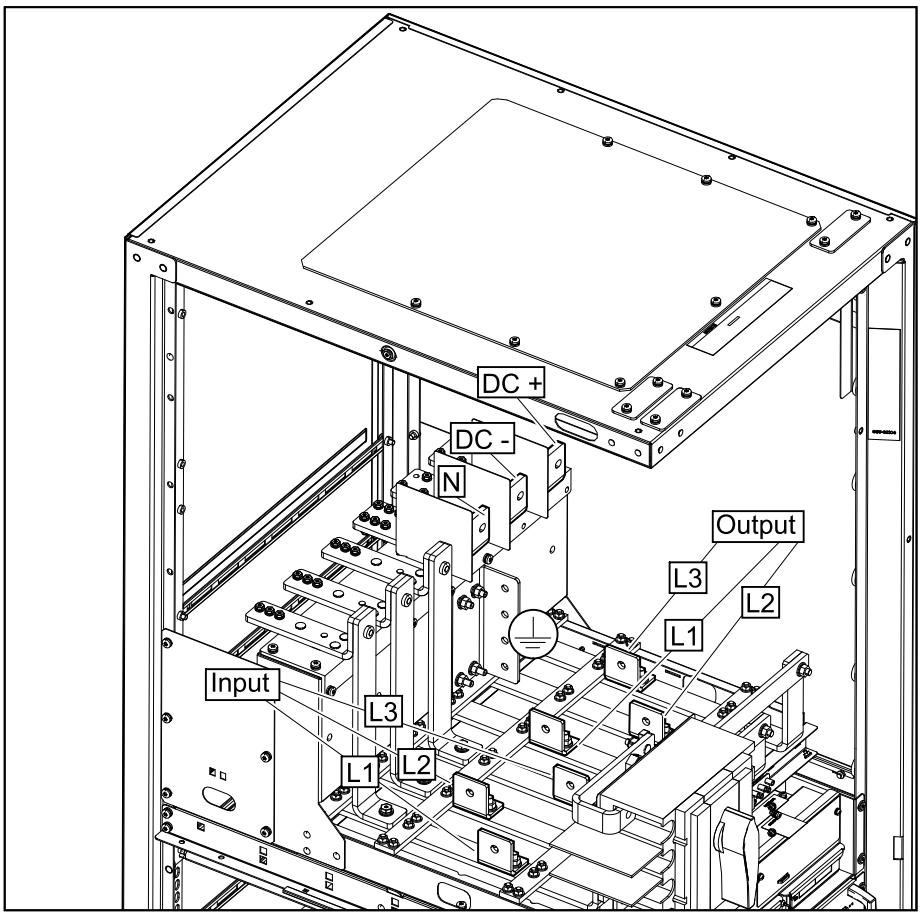


2. Connect the power cables in the described order.
   a. Connect the PE cables.

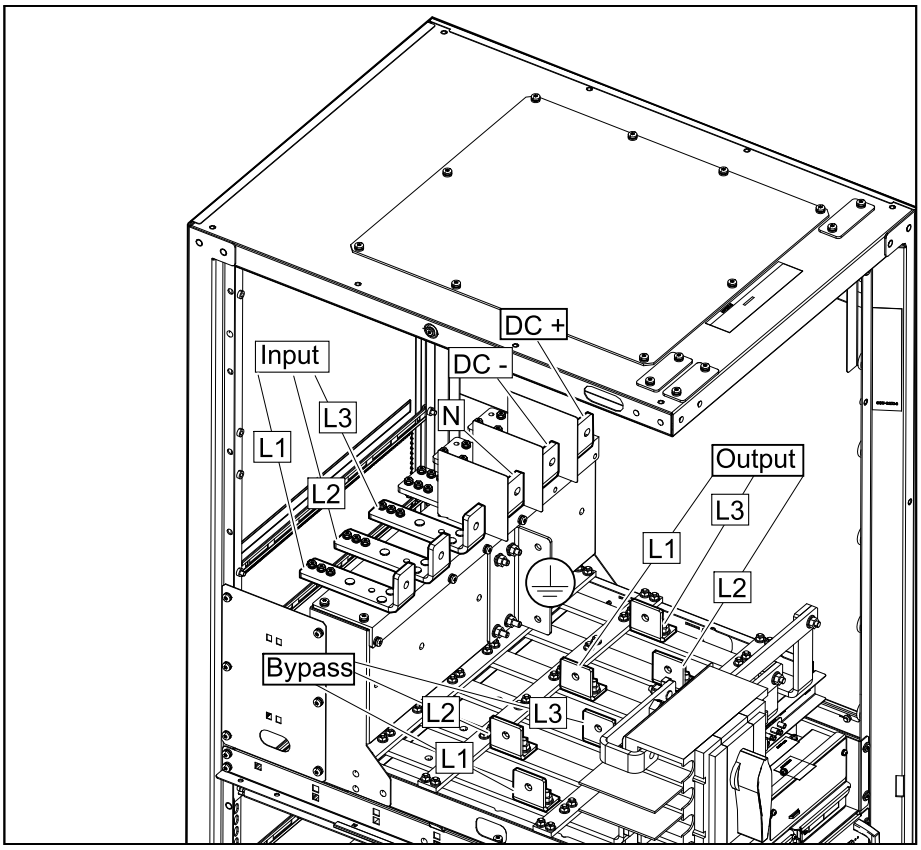
      NOTE: The earth/PE connection must be common for all the UPSs in the parallel system.

   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-).

Front View of the UPS – Single Mains

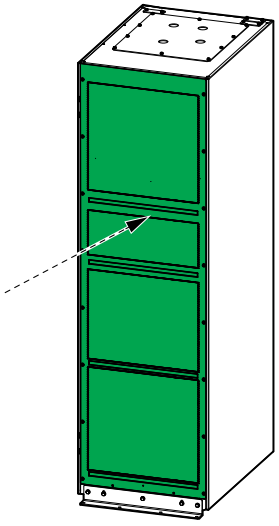


Front View of the UPS – Dual Mains



3. Reinstall the rear panel on the UPS.

Rear View of the UPS



Connect the Power Cables for the UPS with Four Internal Switches

NOTICE

RISK OF EQUIPMENT DAMAGE

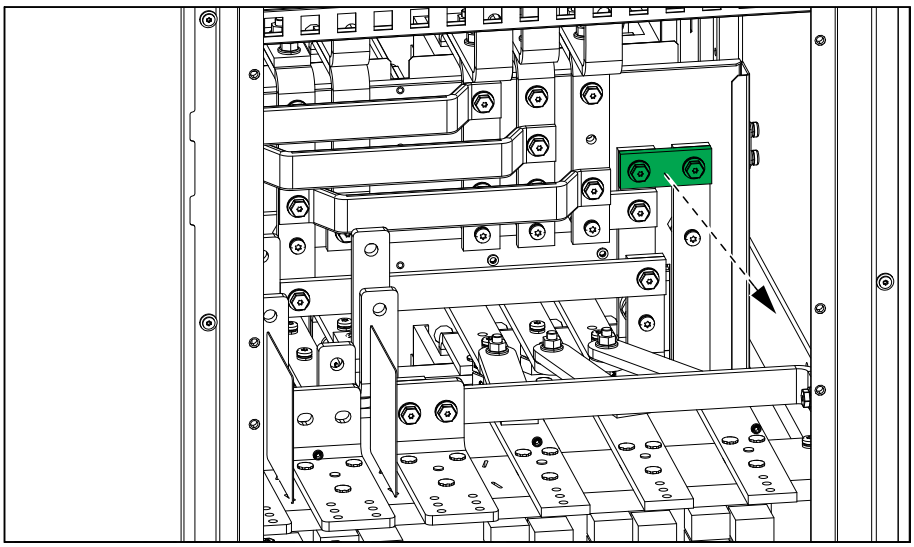
To ensure correct load sharing in bypass operation in a parallel system:

- 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.

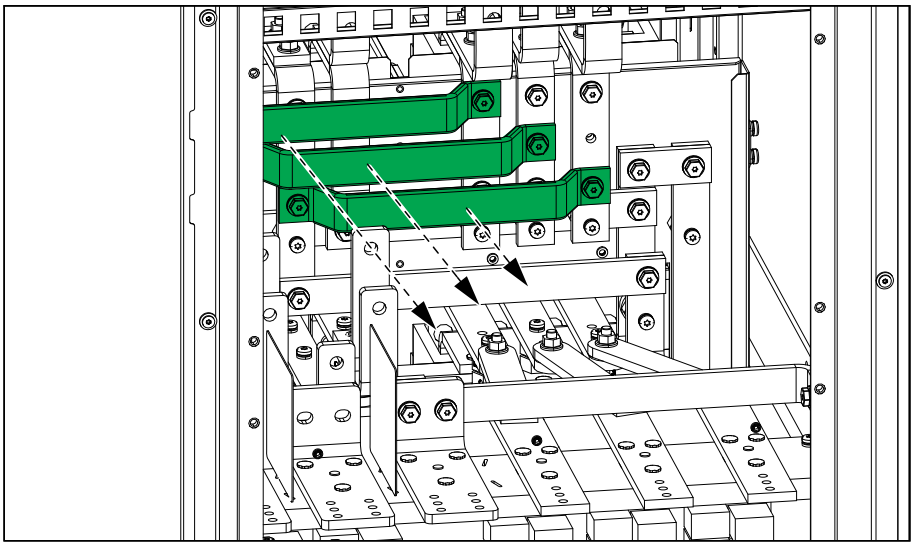
Rear View of the UPS



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

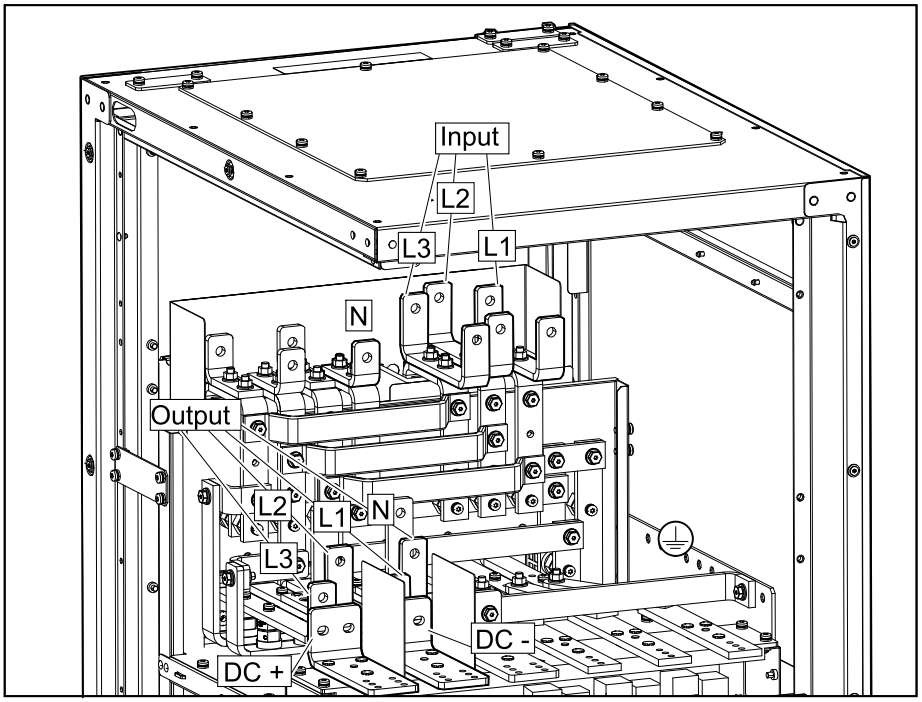


3. Connect the power cables in the described order.
   a. Connect the PE cables.

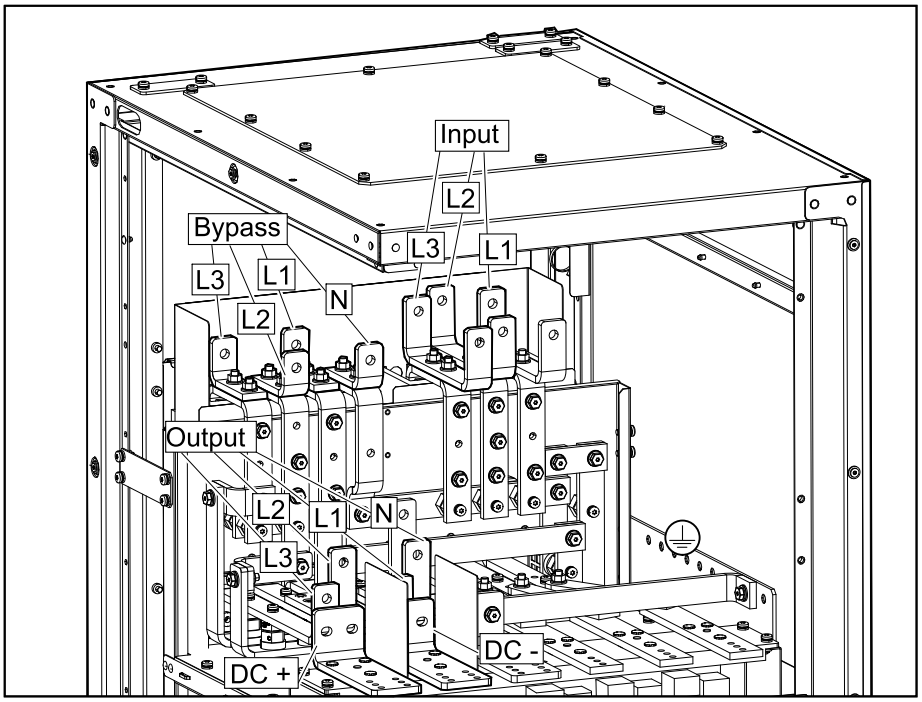
      NOTE: The earth/PE connection must be common for all the UPSs in the parallel system.

   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-).

Front View of the UPS – Single Mains

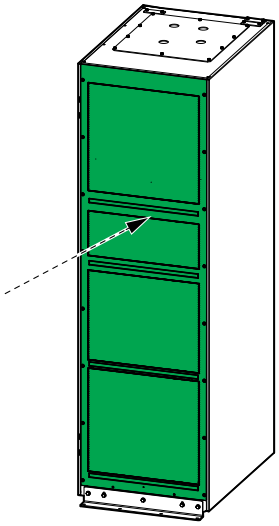


Front View of the UPS – Dual Mains



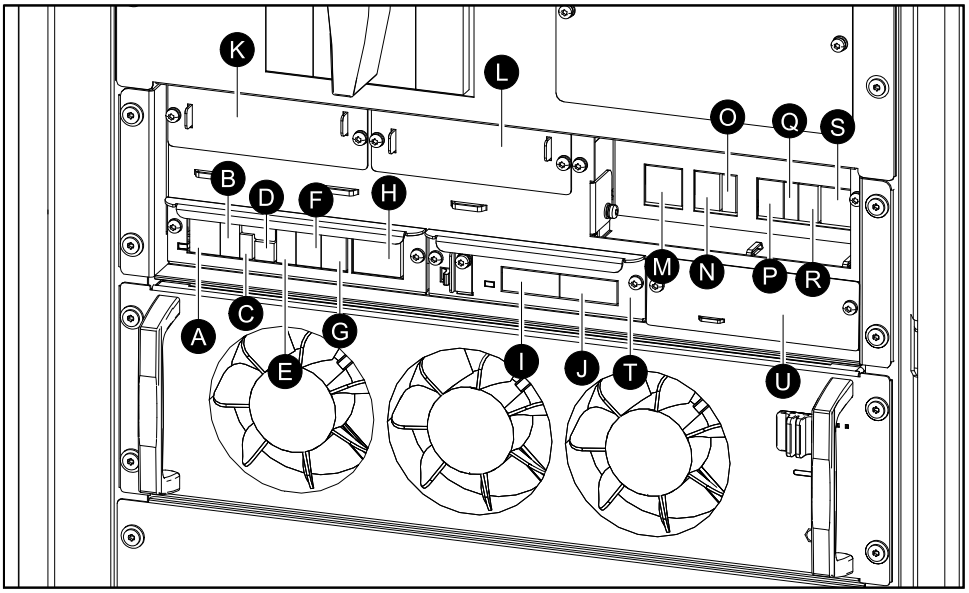
4. Reinstall the rear panel on the UPS.

Rear View of the UPS



Connect the Signal Cables

Overview of Signal Connection Terminals in the UPS



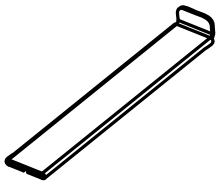
A. Remote EPO (J6600)
B. Display port (for internal use)
C. USB port (for service)
D. Tuner port (for service)
E. Modbus port
F. Battery temperature sensor (J3008)
G. Input contacts (J3009)
H. Output relays (J3001)
I. PBUS2
J. PBUS1
K. Network management card (NMC) slot 1
L. Network management card (NMC) 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 main intelligence module (MIM)
U. IM2 slot for redundant intelligence module (RIM)

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^2.

NOTE: Do not unplug the signal terminals by hand. Always use the tool (TME12560) in the accessory bag to unplug the signal terminals. Ensure 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.

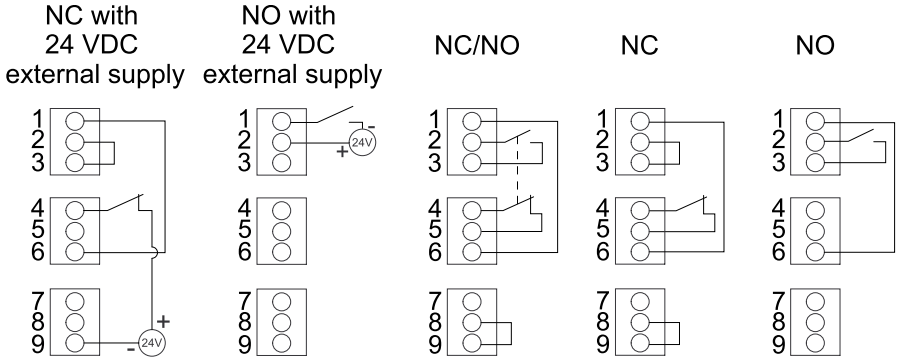
1. Use the provided terminal unplug tool (TME12560) to remove the covers for the signal connection terminals. Save the tool for future use.



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.

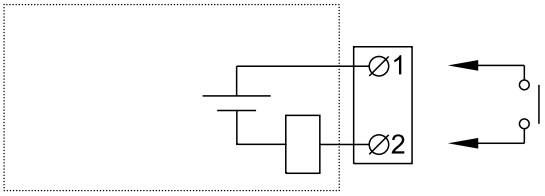
   NOTE: The default setting for the EPO activation is to turn off the inverter.

   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.

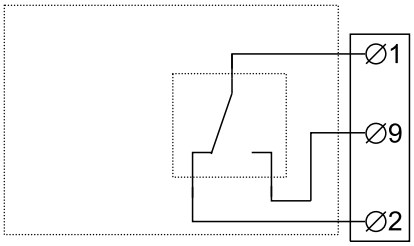
   Do not connect any circuit to the input contacts unless it can be confirmed that the circuit is Class 2/SELV.

   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(66)), 2 (NC(67))
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.

(66) Normally open
(67) 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

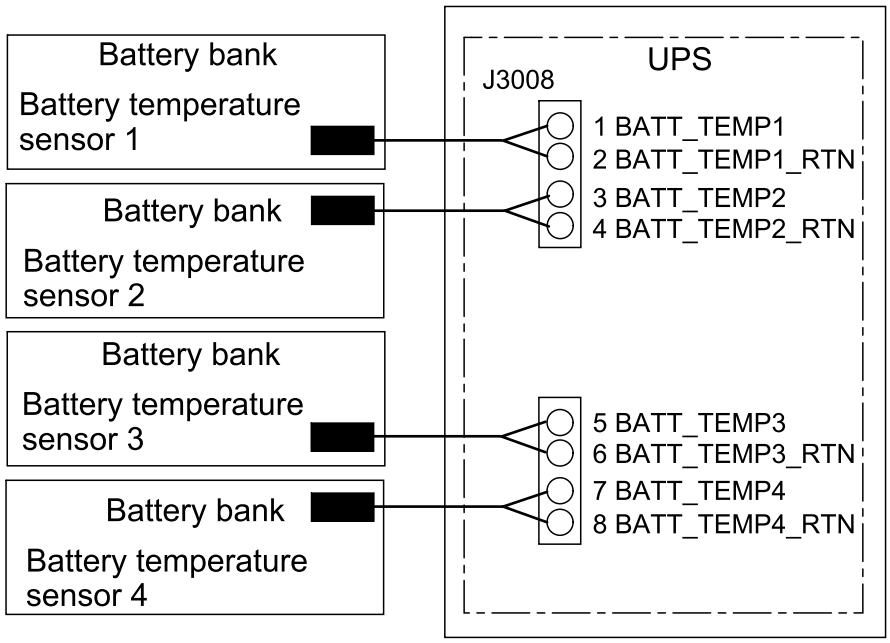
Position the battery temperature sensor as described to ensure correct temperature measurements.

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.

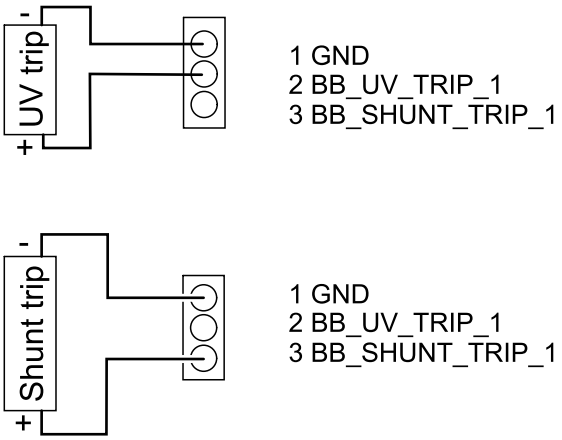
   NOTE: The battery temperature sensor cables are considered Class 2/SELV. Class 2/SELV circuits must be isolated from the primary circuitry.



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

J8301 Pin number	Function
1	GND
2	BB_UV_TRIP_1
3	BB_SHUNT_TRIP_1

Battery Disconnect Device 2

J8301 Pin number	Function
4	GND
5	BB_UV_TRIP_2
6	BB_SHUNT_TRIP_2

Battery Disconnect Device 3

J8301 Pin number	Function
7	GND

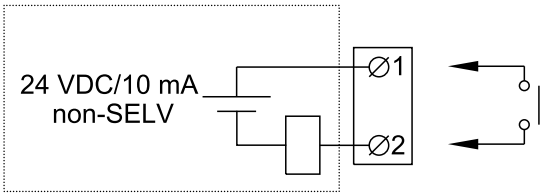
Battery Disconnect Device 3 (Continued)

8	BB_UV_TRIP_3
9	BB_SHUNT_TRIP_3

Battery Disconnect Device 4

J8301 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.

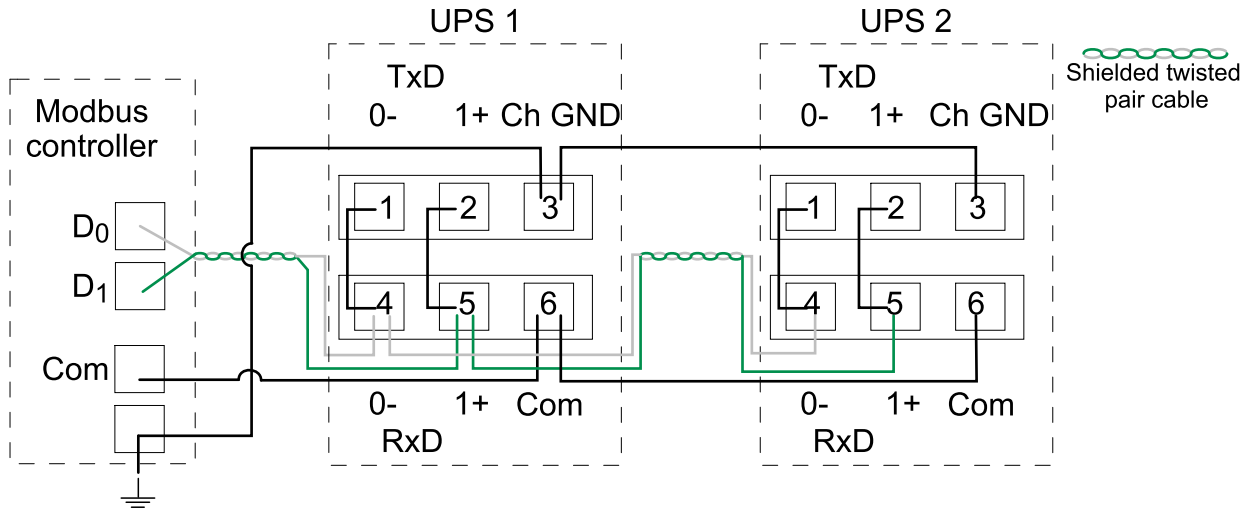


Terminal number	Function	Connection
J8302, 1-2	UIB (unit input disconnect device)	Connect to normally open (NO) auxiliary contacts in unit input disconnect device UIB.
J8302, 3-4	SSIB (static switch input disconnect device)	Connect to normally open (NO) auxiliary contacts in static switch input disconnect device SSIB.
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	**One internal switch UPS:** IMB (internal maintenance disconnect device) **Four internal switches UPS:** 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 96.
J8310, 2	Backfeed relay normally closed (NC)	See Backfeed Protection, page 96.
J8310, 3	Backfeed relay normally open (NO)	See Backfeed Protection, page 96.

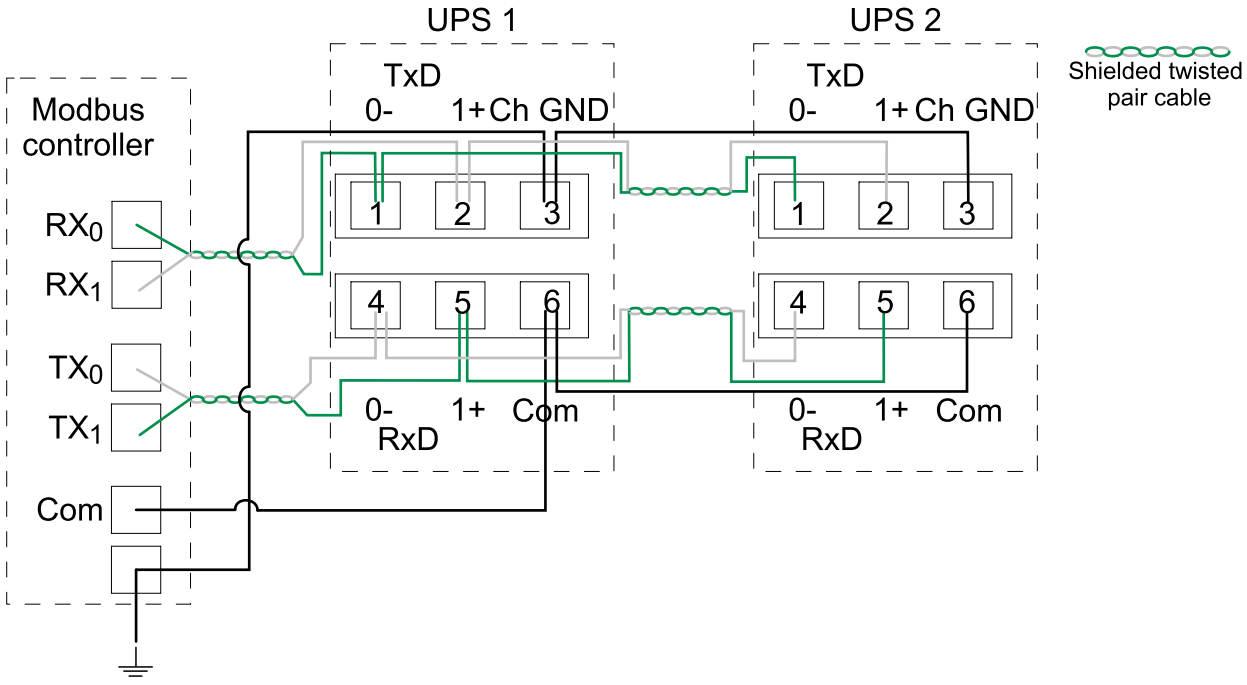
Connect the Modbus Cables

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

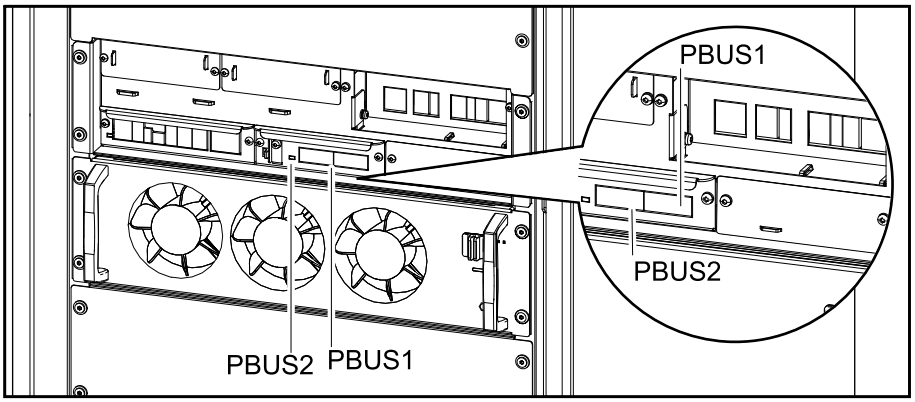


2. Install 150 Ohm termination resistors at each end of each bus if the buses are very long and operate at high data rates. Buses under 610 meters at 9600 baud or under 305 meters at 19.200 baud should not require termination resistors.

Connect the PBUS Cables

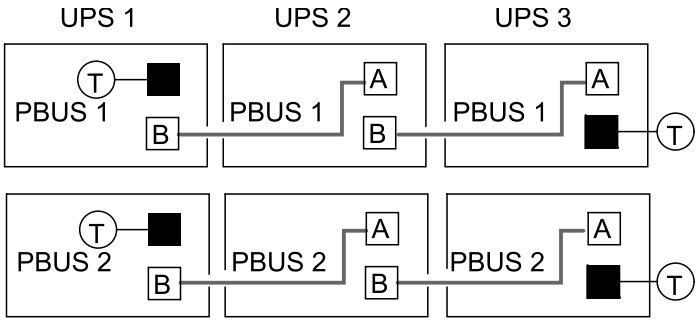
NOTE: Do not connect the PBUS cables to the network. The connection is not intended for network connection and may cause inoperability of the network.

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

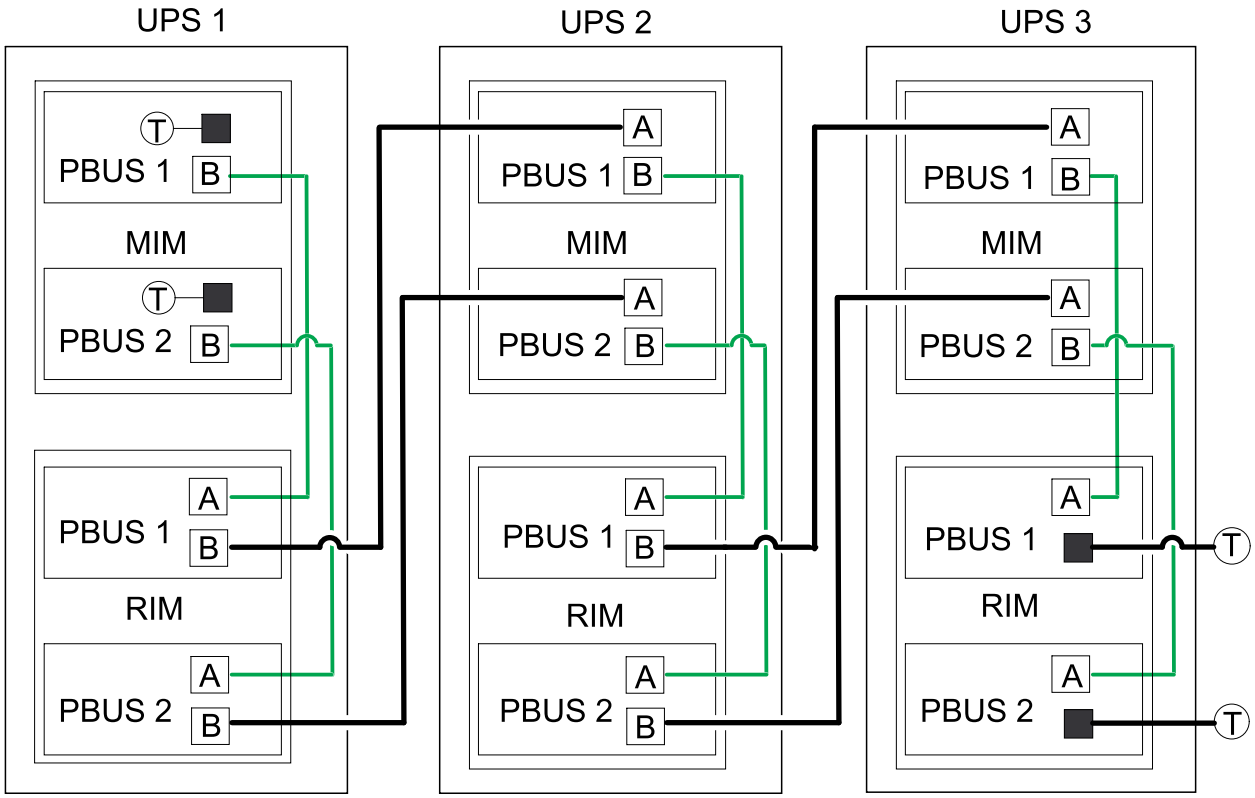


2. Mount termination plugs (T) in the unused connectors.

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.

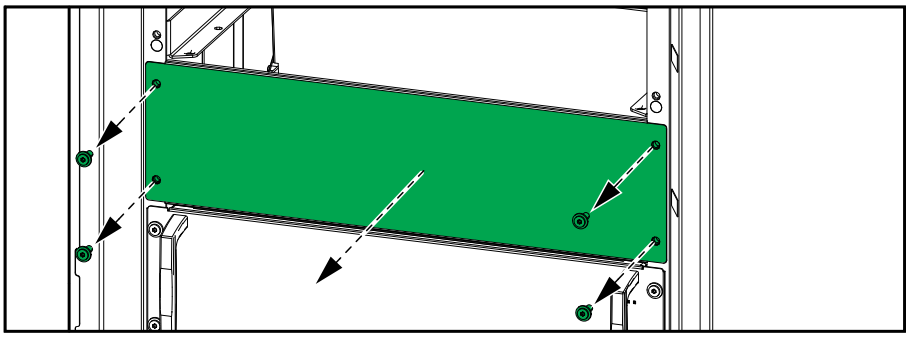
⚠CAUTION

HEAVY LOAD

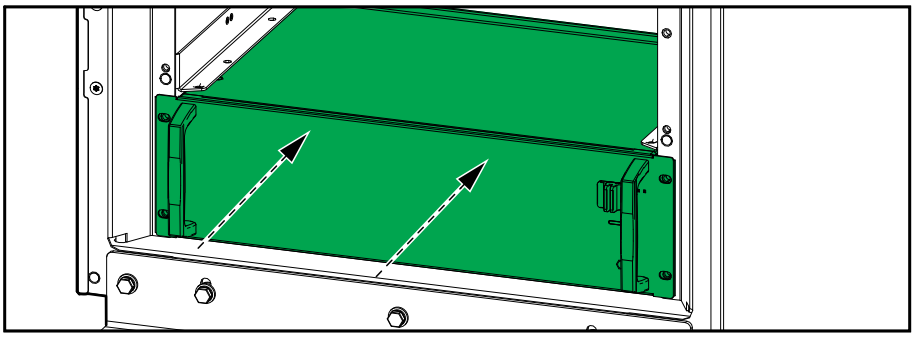
Power modules are heavy (28 kg) and require two persons to lift.

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

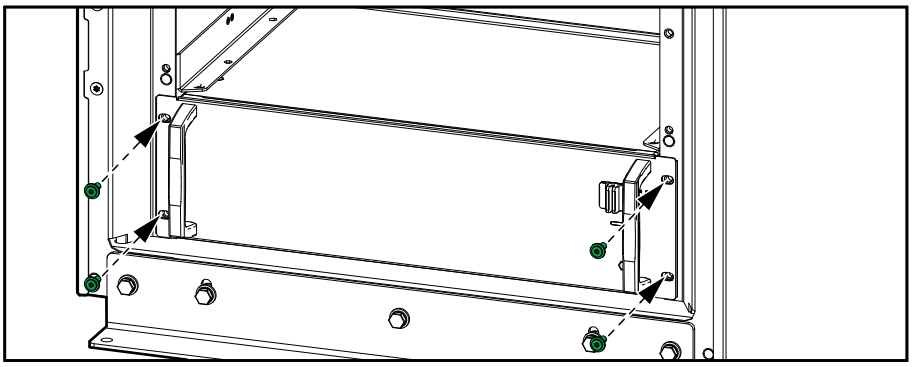
1. Remove the filler plate from the empty power module slot. Save the filler plate for future use.



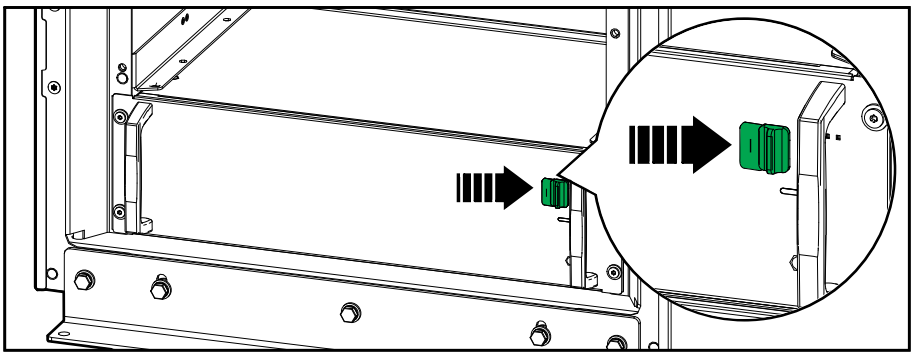
2. Set the unlock tab on the power module to the OFF position. Push the power module into the slot. The enable mechanism will latch when the power module is correctly inserted.



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.

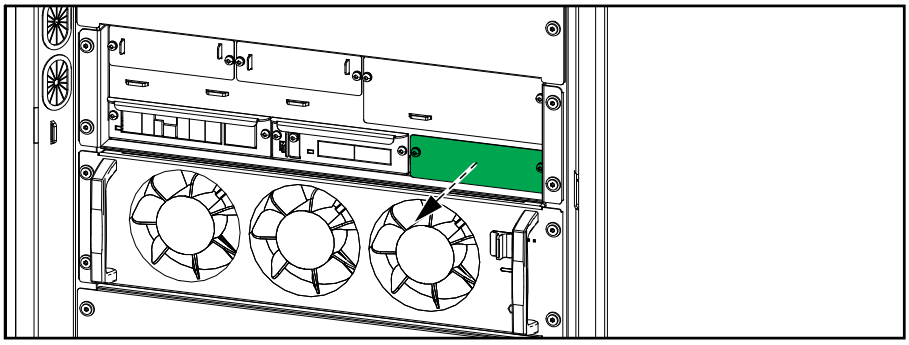
Failure to follow these instructions will result in death or serious injury.

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

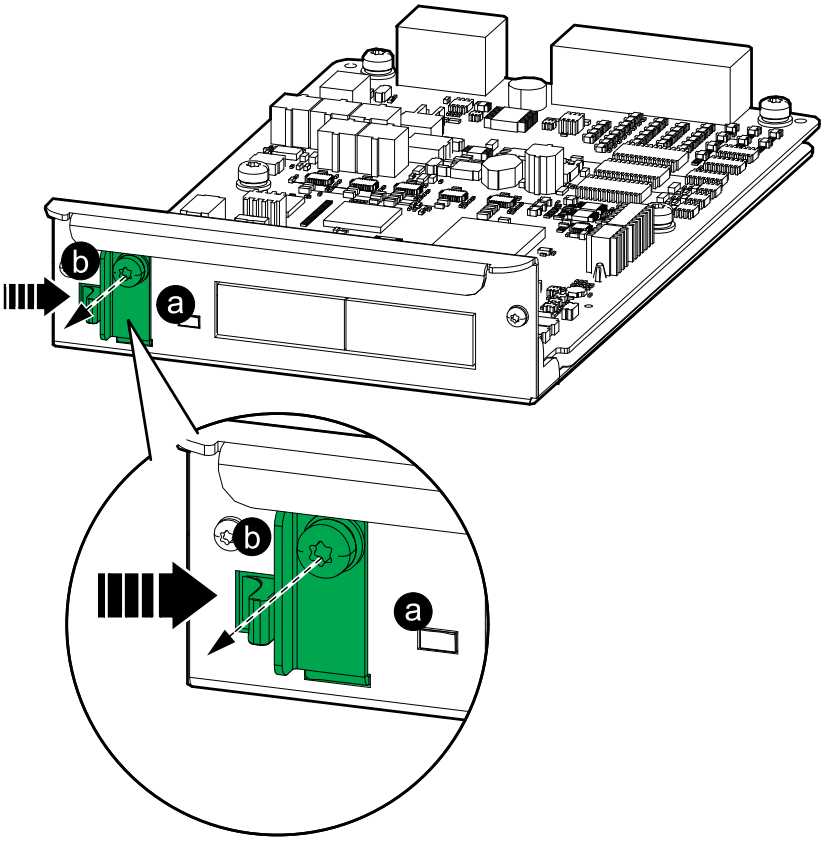
NOTE: Use the optional redundant intelligence module (RIM) kit SP3OPT001 for this procedure.

1. Remove the IM2 slot cover.

Front View of the UPS



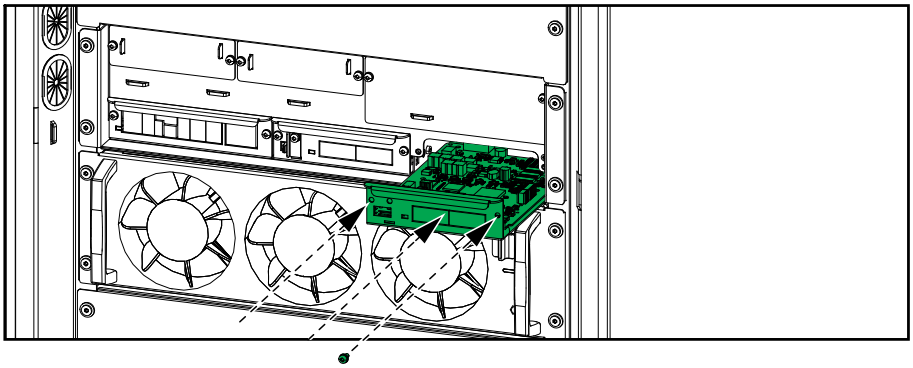
2. Loosen the indicated screw and remove the enable switch fixing plate from the redundant intelligence module. Set the enable switch to the OFF position.



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

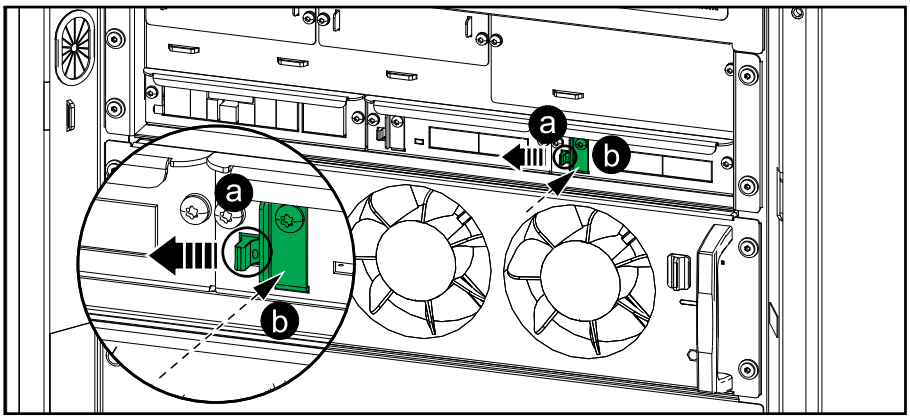
   NOTE: Push on the bottom part of the intelligence module to ensure a smooth push-in.

Front View of the UPS



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

Front View of the UPS



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):

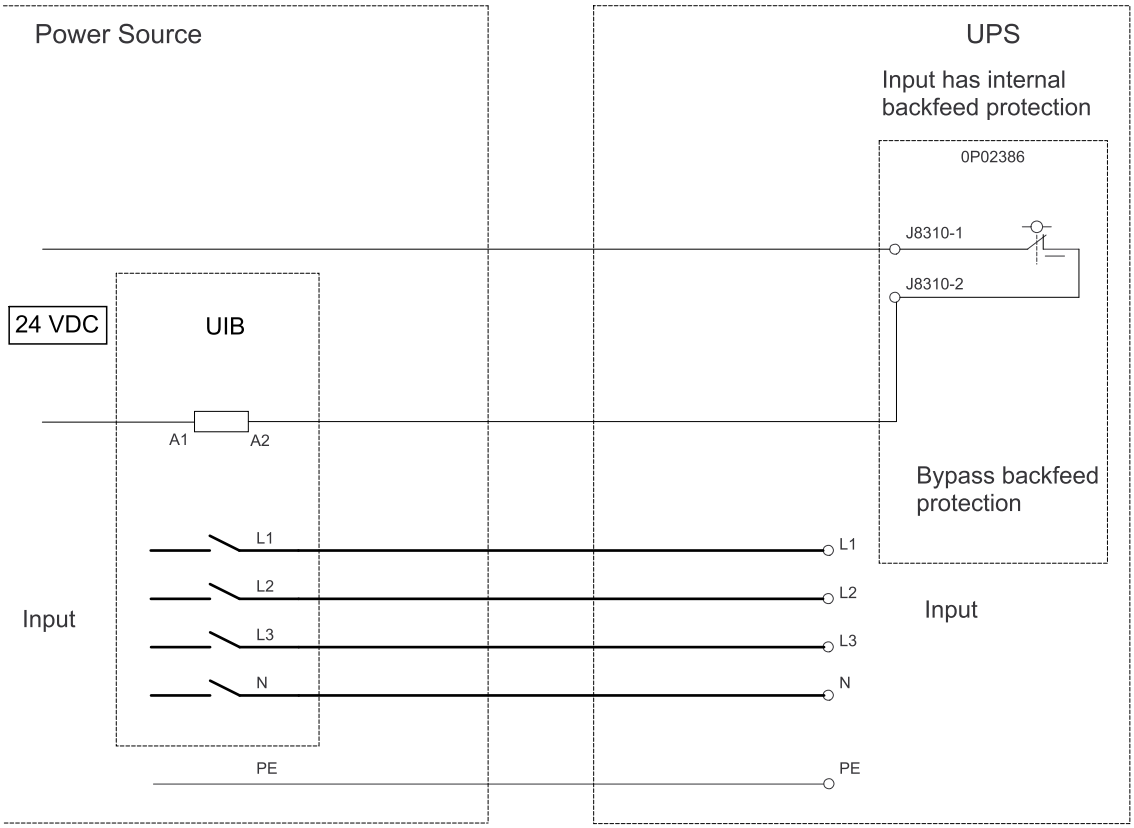
⚠⚠DANGER

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.

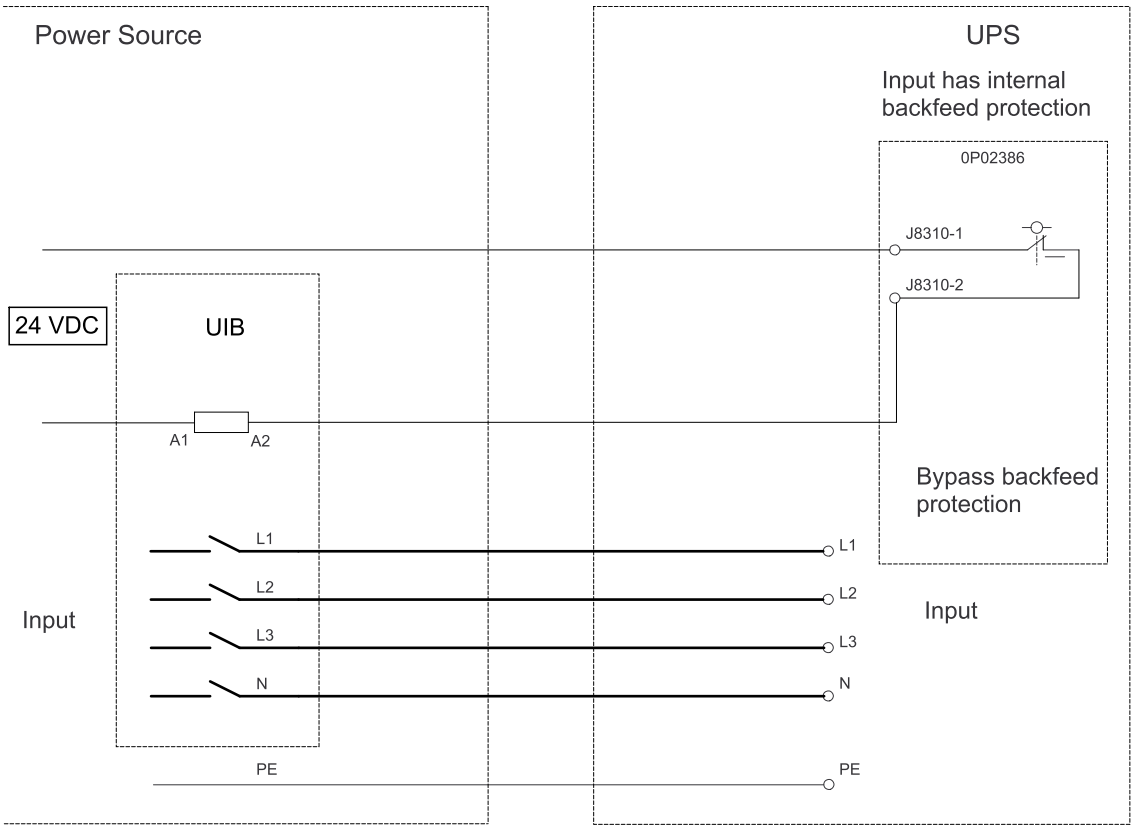
Failure to follow these instructions will result in death or serious injury.

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

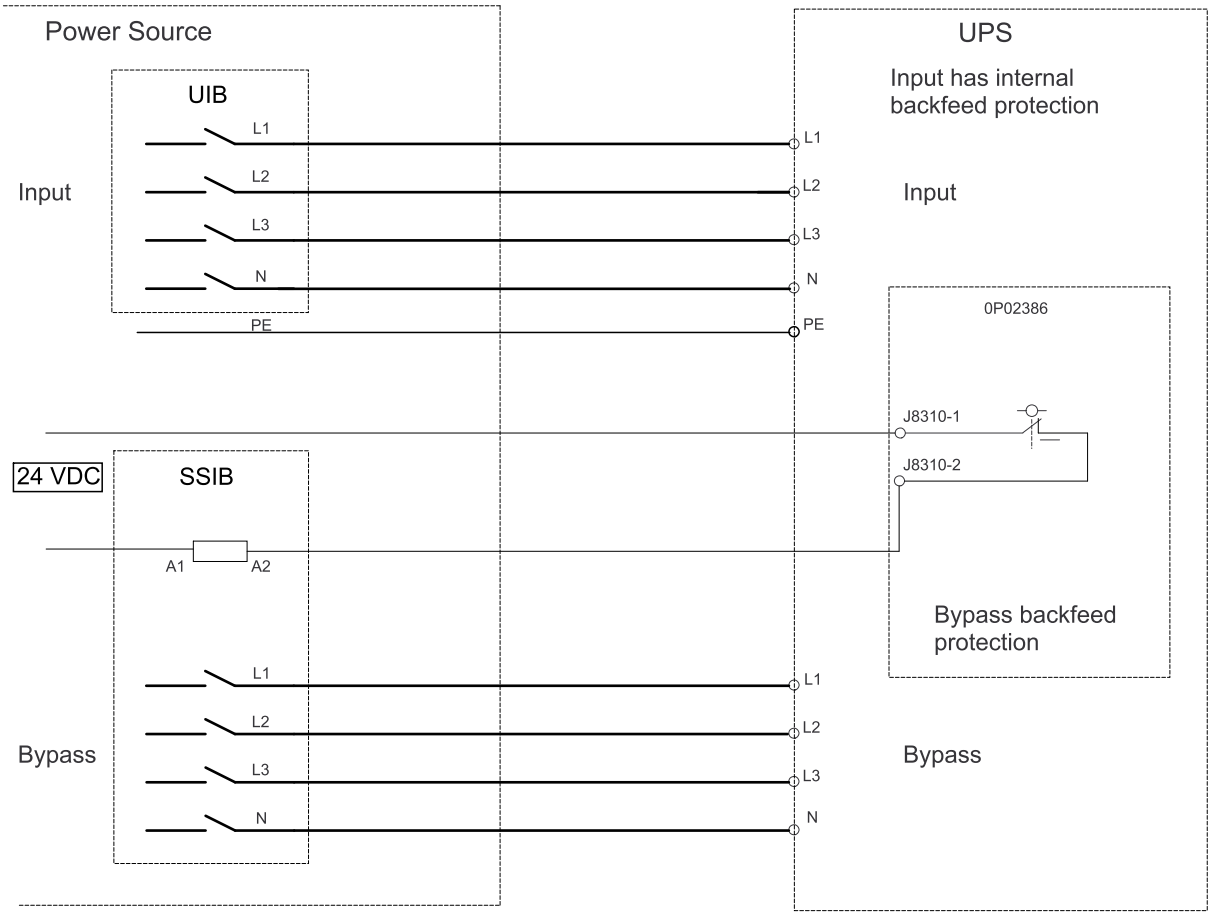


NOTE: An external 24 V power supply is required for backfeed protection with UVR trip.

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

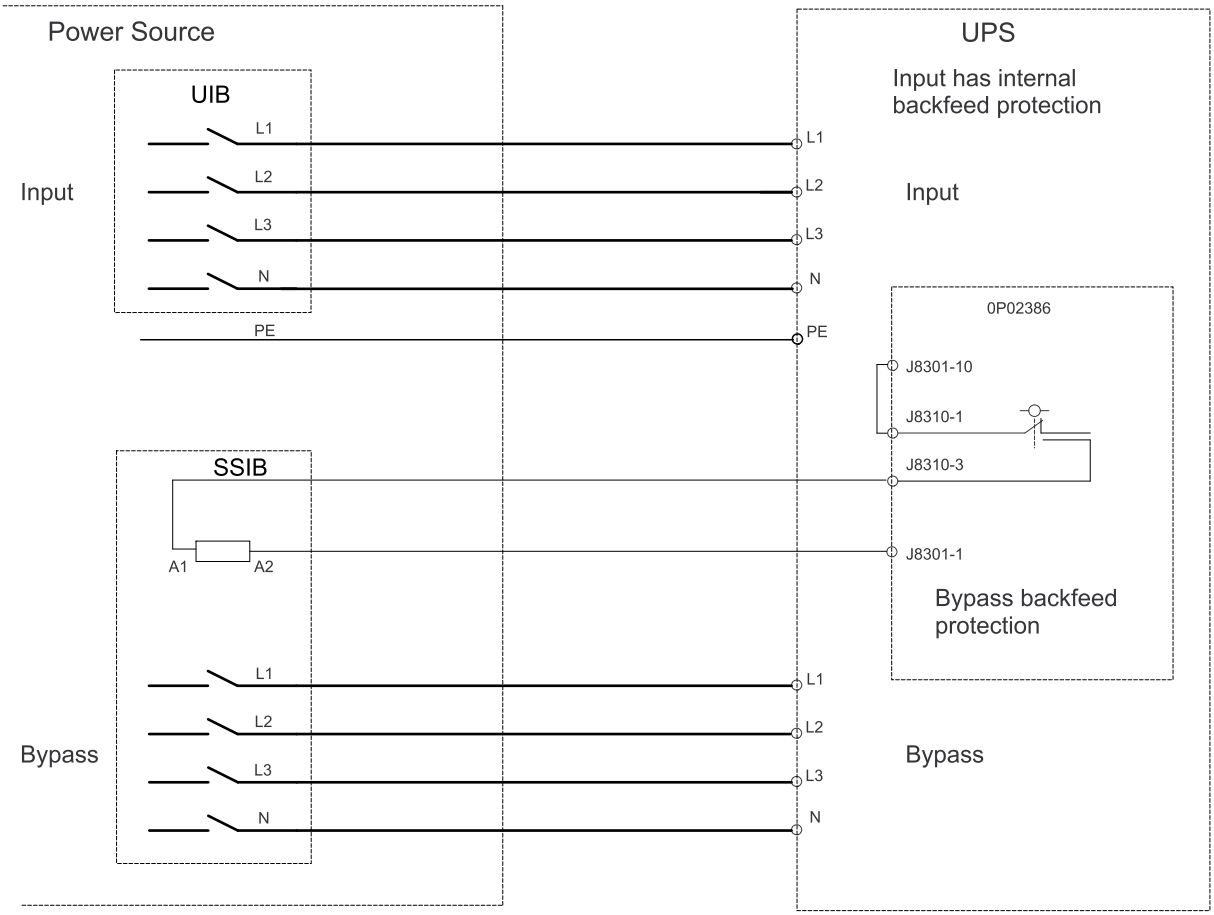


UPS and Third Party Backfeed Protection (UVR trip) – Dual Mains



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

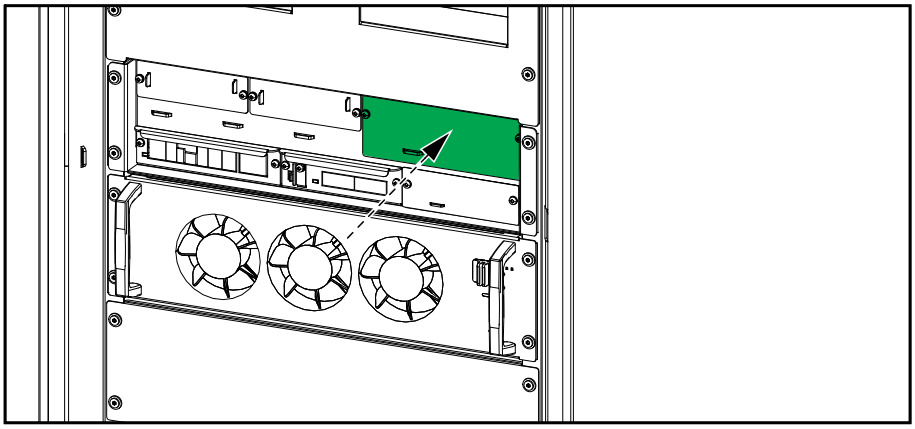
UPS and Third Party Backfeed Protection (Shunt trip) – Dual Mains



Final Installation

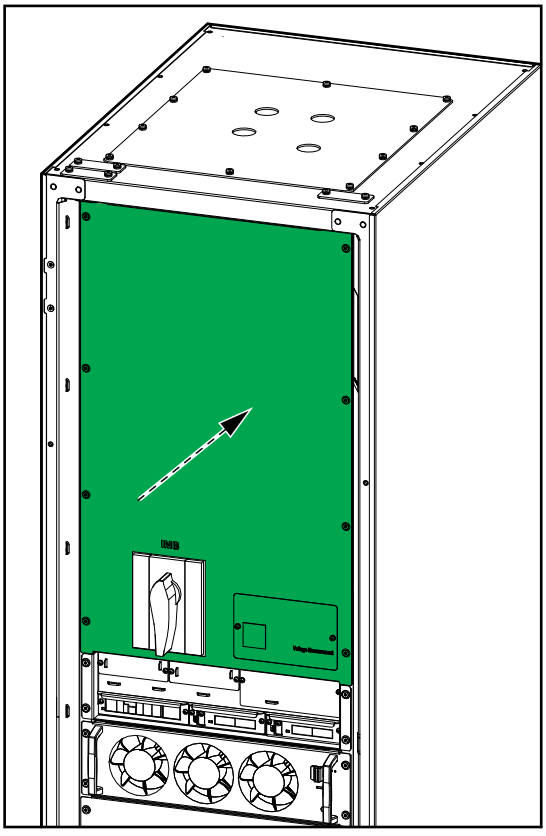
1. Reinstall the cover over the signal connection terminals.

Front View of the UPS

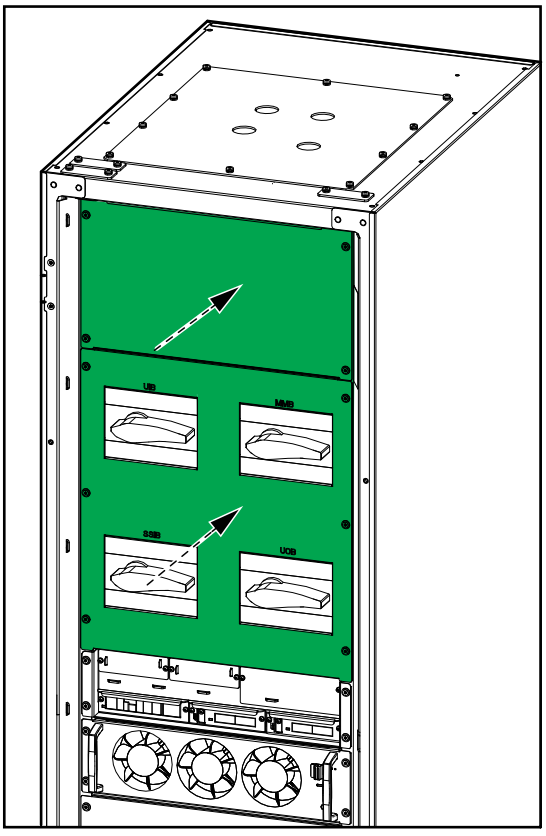


2. Reinstall the front cover(s) on the UPS.

Front View of the UPS – UPS with One Internal Switch

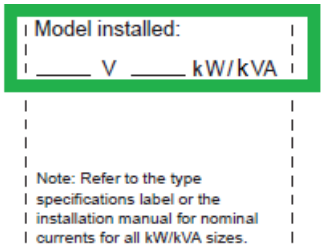


Front View of the UPS – UPS with Four Internal Switches



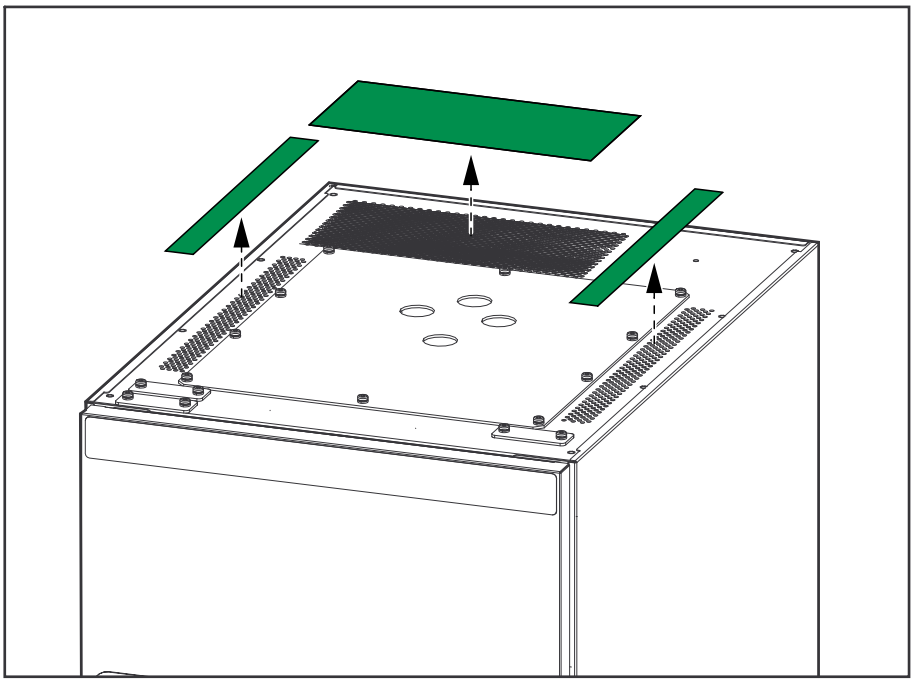
3. **For parallel system**: Install a padlock (not provided) on the internal maintenance disconnect device IMB in the open position on all UPSs in the parallel system.

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



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

Front View of the UPS



Decommission or Move the UPS to a New Location

⚠WARNING

TIP OVER HAZARD

- Read and apply user instructions before work.
- Secure the product in place.
- Secure the product if removing the securing bolts or moving the product.
- Use appropriate lifting equipment,
- Use trained personnel only who know and understand the user instructions.

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

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 92 for details.

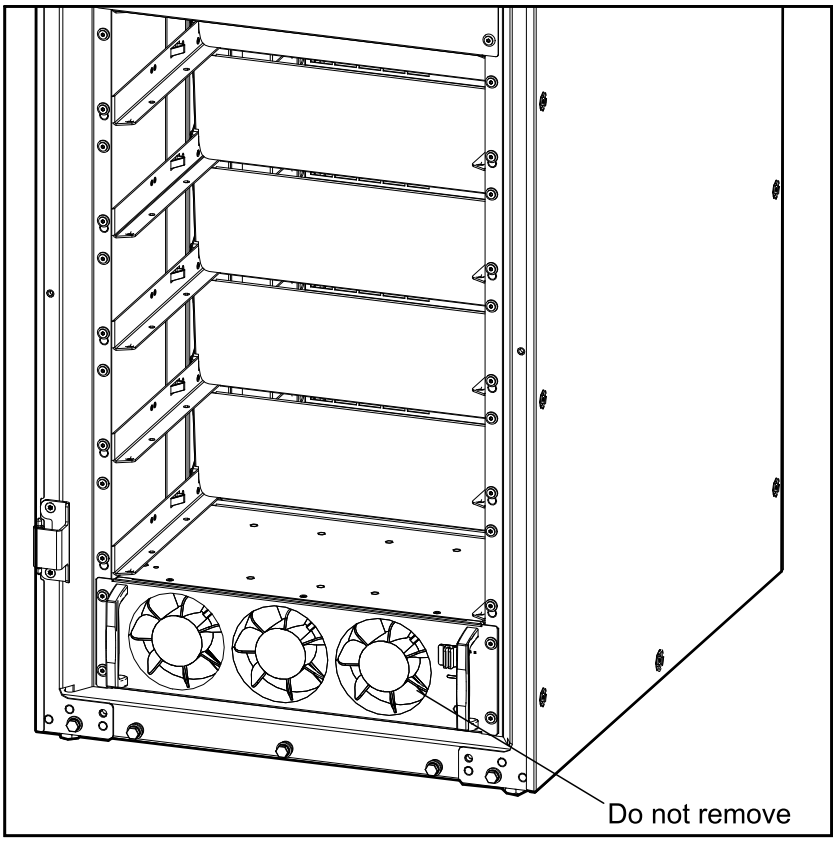
⚠CAUTION

HEAVY LOAD

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

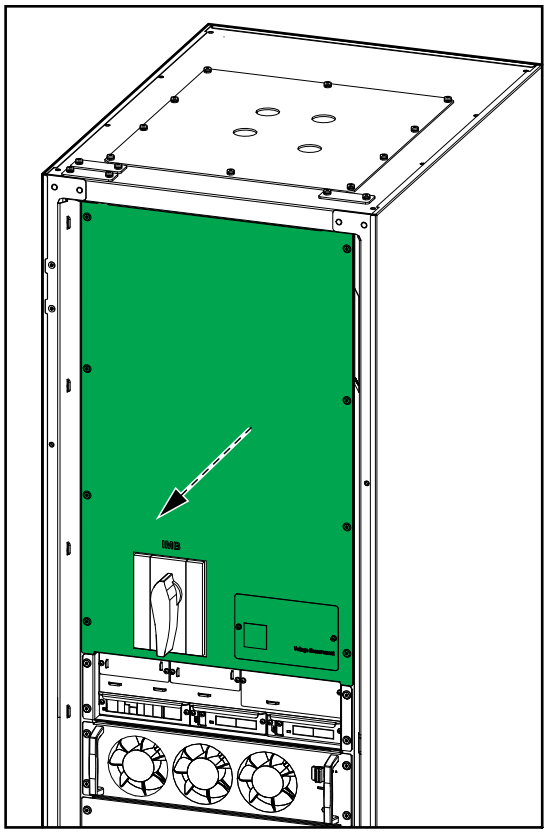
Failure to follow these instructions can result in injury or equipment damage.

Front View of the UPS

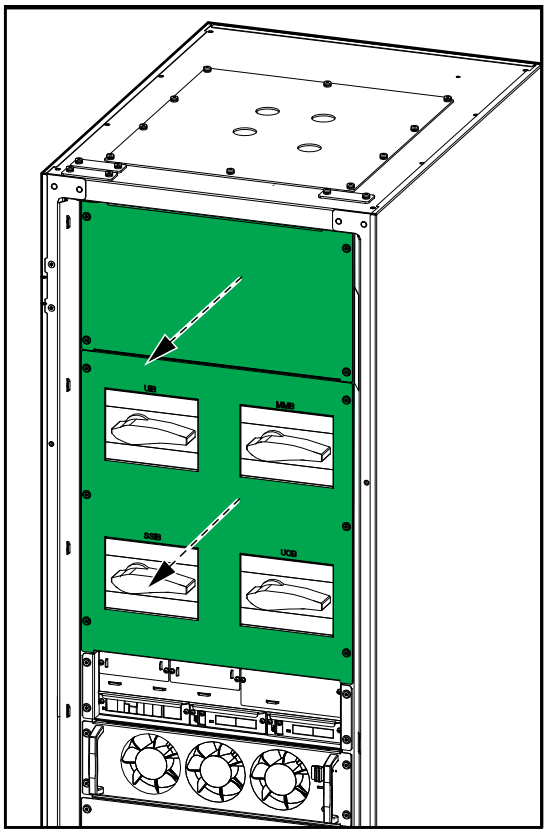


6. Remove the front cover(s) from the UPS.

Front View of the UPS – UPS with One Internal Switch



Front View of the UPS – UPS with Four Internal Switches



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

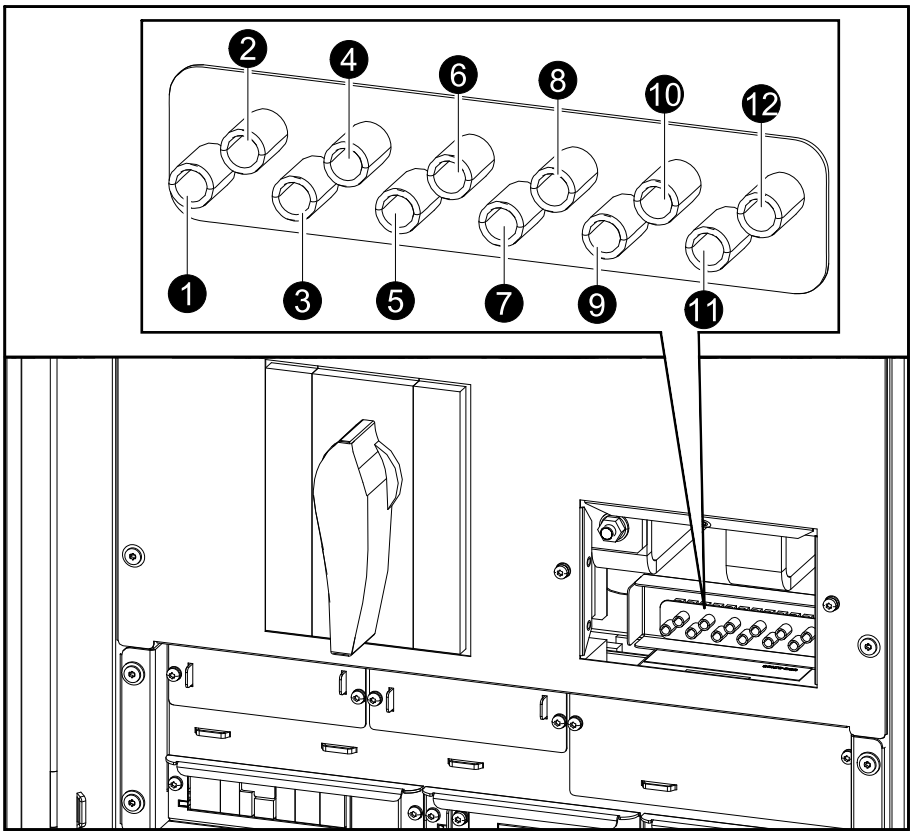
⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

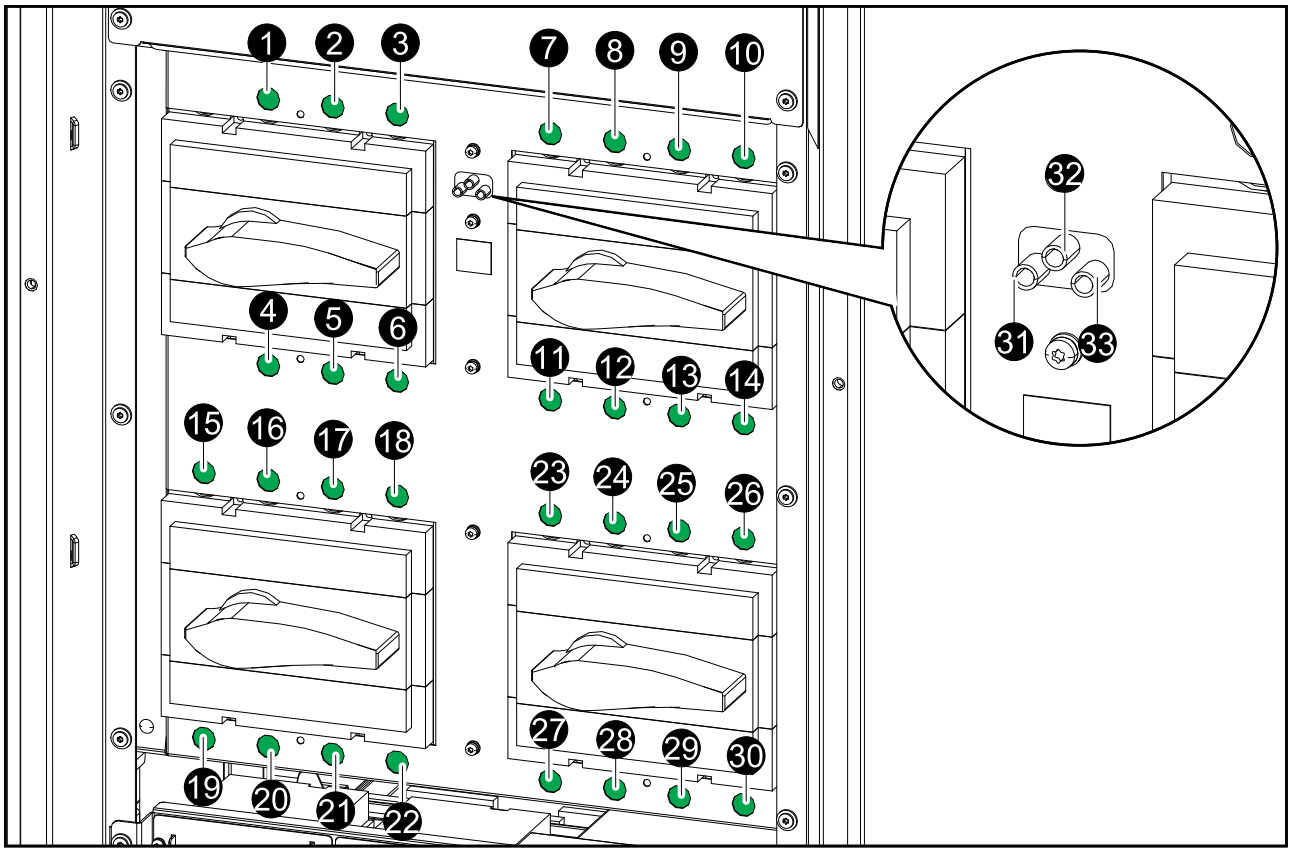
Failure to follow these instructions will result in death or serious injury.

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/ neutral/DC busbar before continuing.

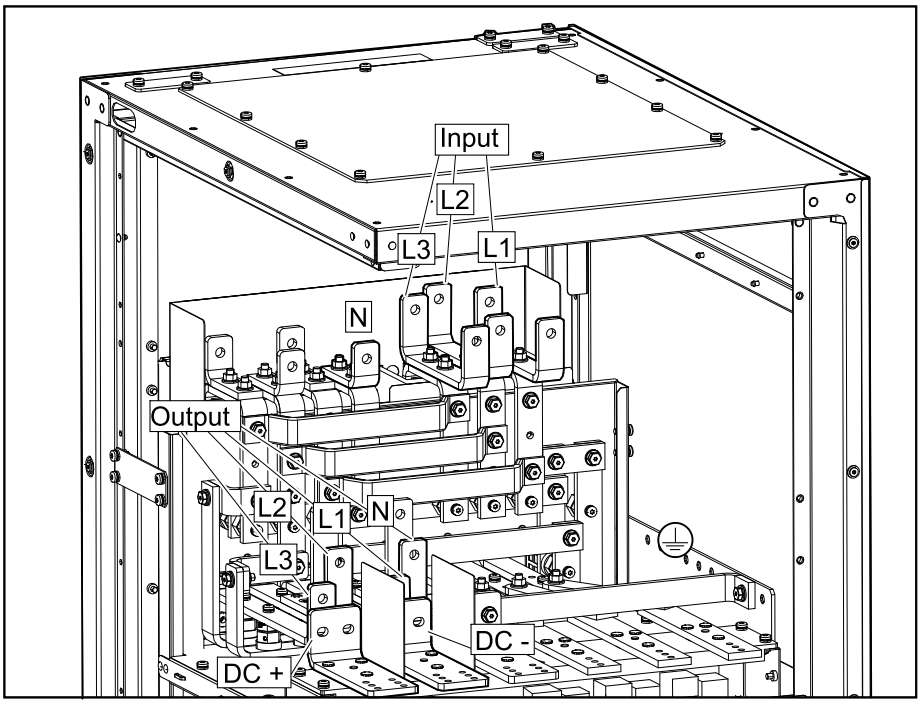
⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

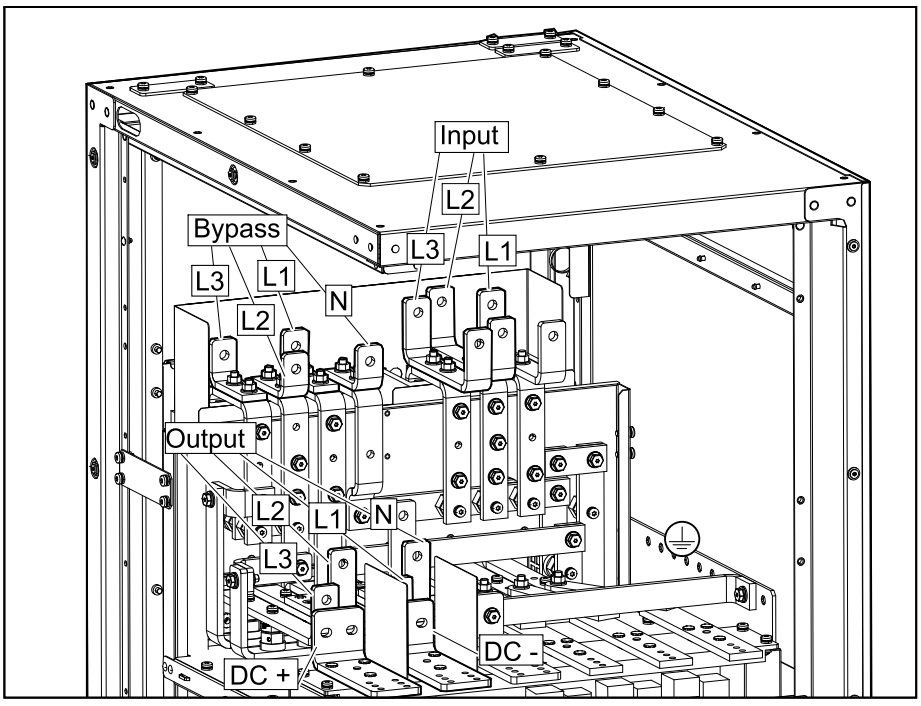
Measure for and verify ABSENCE of voltage on each input/bypass/output/ neutral/DC busbar before continuing.

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

Front View of the UPS – Single Mains

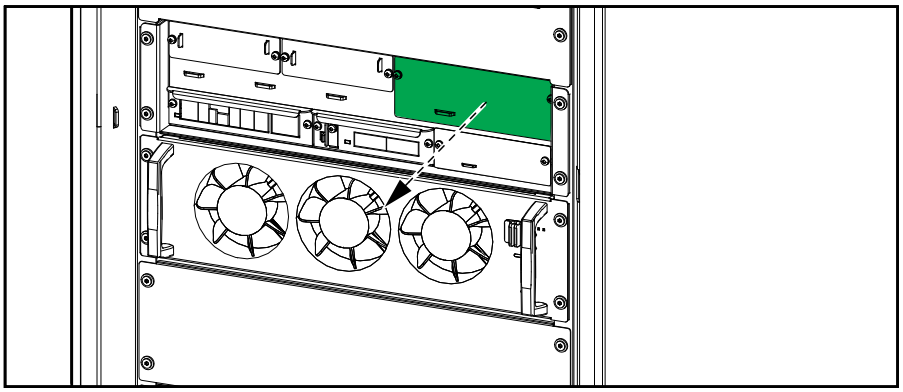


Front View of the UPS – Dual Mains



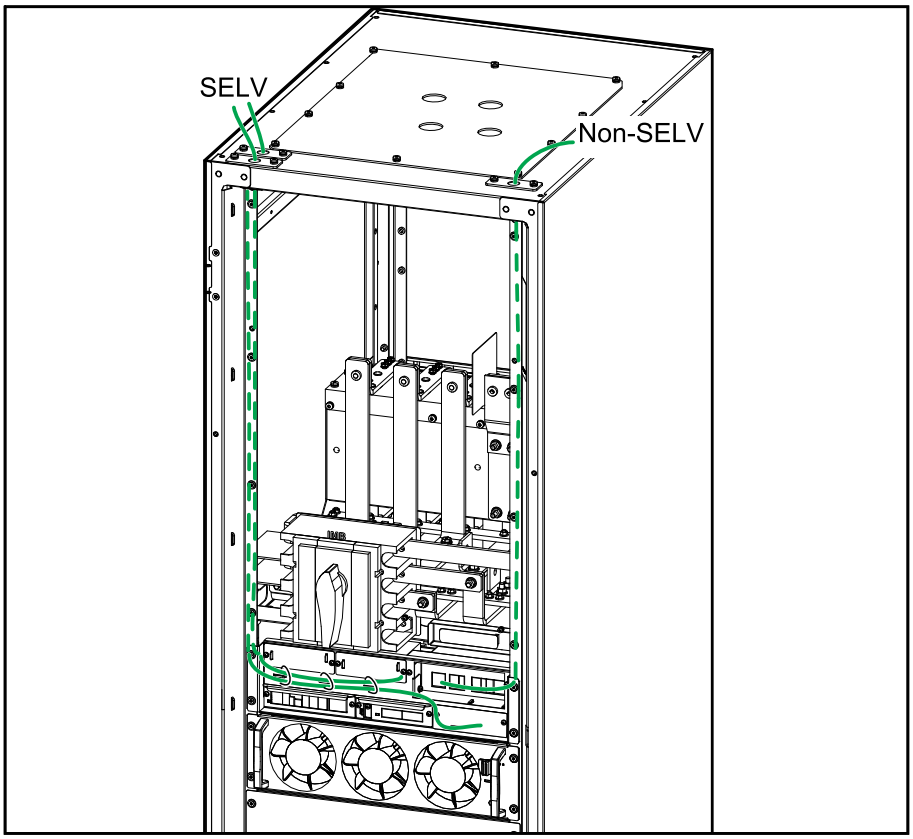
9. Disconnect and remove all power cables from the UPS. See Connect the Power Cables for the UPS with One Internal Switch, page 75 or Connect the Power Cables for the UPS with Four Internal Switches, page 78 for details.
10. Reinstall the front cover(s) and reinstall the screws.
11. Remove the cover from the signal connection terminals.

Front View of the UPS



12. Disconnect and remove all signal cables from the UPS. See Connect the Signal Cables, page 82 for details.

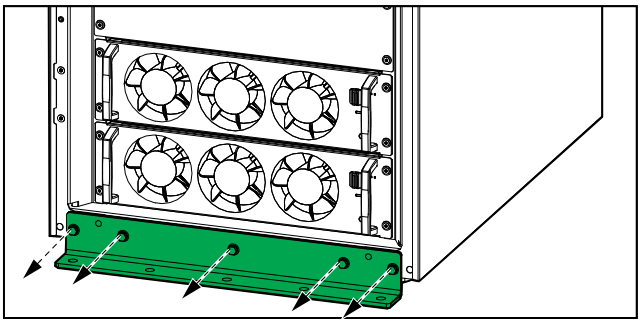
Front View of the UPS



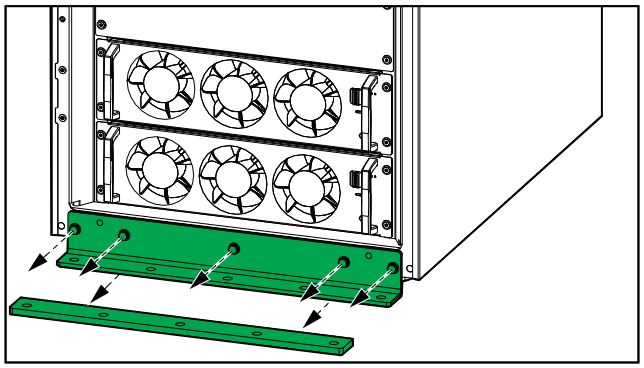
13. **If external sync is present:** Remove the transparent protection cover from the external synchronization board 0P4809. The external synchronization board 0P4809 is located in the rear top of the UPS. Disconnect the signal cables from the external synchronization board 0P4809. See Install the External Synchronization Kit (Option), page 66.
14. **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.

15. **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.
16. Reinstall all removed plates and covers. See Final Installation, page 100 for details.
17. 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)

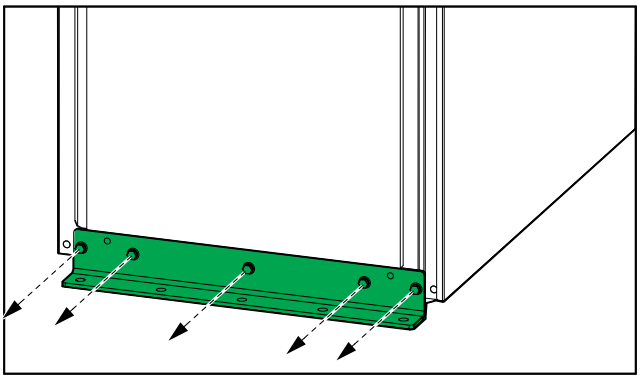


Front View of the UPS (with Shimming Sheet)

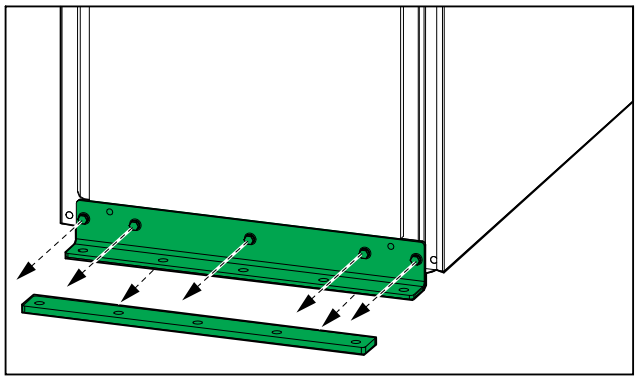


18. If present, remove the rear seismic anchoring bracket/rear transportation bracket from the UPS and from the floor. Save for reinstallation.

Rear View of the UPS (without Shimming Sheet)



Rear View of the UPS (with Shimming Sheet)



19. Close and lock the front door.
20. Raise the feet of the UPS until the casters have full contact with the floor.
21. 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.

22. **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.**

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.**

23. Perform one of the following:
    - Decommission the UPS, OR
    - Move the UPS to a new location to install it.
24. **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 54 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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