

Gutor PXC

25-50 kVA UPS with Transformer

Installation

GUPXC25GFI, GUPXC25GFDI, GUPXC25LFI, GUPXC25LFDI, GUPXC37GFI,
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GUPXC50LFI, GUPXC50LFDI

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

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

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Important Safety 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.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All safety instructions in this document must be read, understood and followed.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read all instructions in the Installation Manual before installing or working on this UPS system.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not install the UPS system until all construction work has been completed and the installation room has been cleaned.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- The product must be installed according to the specifications and requirements as defined by Schneider Electric. It concerns in particular the external and internal protections (upstream breakers, battery breakers, cabling, etc.) and environmental requirements. No responsibility is assumed by Schneider Electric if these requirements are not respected.
- After the UPS system has been electrically wired, do not start up the system. 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.

⚠ WARNING

HAZARD OF ARC FLASH

Do not make mechanical changes to the product (including removal of cabinet parts or drilling/cutting of holes) that are not described in the Installation Manual.

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

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.

Electrical Safety

This manual contains important safety instructions that should be followed during the installation and maintenance of the UPS system.

⚠ 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.
- Disconnection devices for AC and DC must be provided by others, be readily accessible, and the function of the disconnect device marked for its function.
- Turn off all power supplying the UPS system before working on or inside the equipment.
- Before working on the UPS system, check for hazardous voltage between all terminals including the protective earth.
- The UPS contains an internal energy source. Hazardous voltage can be present even when disconnected from the mains supply. Before installing or servicing the UPS system, ensure that the units are OFF and that mains and batteries are disconnected. Wait five minutes before opening the UPS to allow the capacitors to discharge.
- The UPS must be properly earthed/grounded and due to a high leakage current, the earthing/grounding conductor must be connected first.

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

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.

Battery Safety

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Battery circuit breakers must be installed according to the specifications and requirements as defined by Schneider Electric.
- Servicing of batteries must only be performed or supervised by qualified personnel knowledgeable of batteries and the required precautions. Keep unqualified personnel away from batteries.
- Disconnect charging source prior to connecting or disconnecting battery terminals.
- Do not dispose of batteries in a fire as they can explode.
- Do not open, alter, or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Batteries can present a risk of electric shock and high short-circuit current. The following precautions must be observed when working on batteries

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear protective glasses, gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electric shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

When replacing batteries, always replace with the same type and number of batteries or battery packs.

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

NOTICE

RISK OF EQUIPMENT DAMAGE

- Wait until the system is ready to be powered up before installing batteries in the system. The time duration from battery installation until the UPS system is powered up must not exceed 72 hours or 3 days.
- Batteries must not be stored more than six months due to the requirement of recharging. If the UPS system remains de-energized for a long period, Schneider Electric recommends 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 equipment damage.

Specifications

Input Specifications

	25 kVA		37.5 kVA		50 kVA	
Input Voltage (V)	480	600	480	600	480	600
Connections	L1, L2, L3, N, G for single mains L1, L2, L3, G for dual mains					
Voltage range (V)	±10%					
Frequency (Hz)	60 ±8%					
Nominal input current ¹ (A)	33	27	50	40	67	53
Maximum input current ² (A)	42	33	63	50	83	67
Total harmonic distortion (THDI)	< 5% at 100% load					
Maximum input short-circuit rating	65 kA at 480 V 50 kA at 600 V					
Inrush current	11 x nominal input current					
Protection	Upstream protection according to source, preferable current limiting					
Ramp-in	10% nominal power/sec					

Bypass Specifications

	25 kVA		37.5 kVA		50 kVA	
Voltage (V)	480	600	480	600	480	600
Connections	L1, L2, L3, N, G					
Voltage range (V)	±10%					
Frequency (Hz)	60 ±8%					
Nominal bypass current (A)	30	24	45	36	60	48
Inrush current	11 x nominal input current					
Protection	Upstream protection according to source, preferable current limiting					

Output Specifications

	25 kVA	37.5 kVA	50 kVA
Voltage (V)	208	208	208
Connections	L1, L2, L3, N, G		
Overload capacity	125% for 10 minutes 150% for 1 minute 230% for 60 ms 1000% for 100 ms (bypass operation)		
Voltage range (V)	± 1%		
Power factor	1		
Nominal output current (A)	69	104	139

1. Nominal input current based on nominal mains voltage and batteries fully charged at rated load.
2. Maximum input current based on nominal mains voltage and battery charging at rated load.

	25 kVA	37.5 kVA	50 kVA
Voltage (V)	208	208	208
Total harmonic distortion (THDU)	< 2% at 100% linear load < 5% at 100% non-linear load		
Frequency (Hz)	60 Hz (sync to bypass) 60 Hz \pm 0.1% (free-running)		
Slew rate (Hz/sec)	Programmable: 0.25, 0.5, 1, 2, or 4		
Load crest factor	3:1		
Load power factor	0.5 leading to 0.5 lagging without derating		

Battery Specifications

	25 kVA	37.5 kVA	50 kVA
Charging power in % of output power	20%		
Nominal battery voltage (VDC)	384		
Nominal float voltage (VDC)	436		
Boost charge voltage (VDC)	441		
End of discharge voltage (full load) (VDC)	321		
Battery current at full load and nominal battery voltage (A)	69	104	138
Battery current at full load and minimum battery voltage (A)	83	124	165
Restored energy time to 90% charge	Up to 8 hours		
Temperature compensation	Adjustable		
Ripple current	< 1%		
Battery test	Manual or automatic (selectable)		
Deep discharge protection	Yes		
Recharge according to battery temperature	Yes		
Cold start	Yes		

Torque Specifications

Bolt size	Torque
M3	0.63 (0.46 lb-ft)
M4	1.7 Nm (1.25 lb-ft)
M6	5 Nm (3.69 lb-ft)
M8	17.5 Nm (12.91 lb-ft)
M10	30 Nm (22 lb-ft)
M12	50 Nm (36.87 lb-ft)

Recommended Upstream Protection

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

A suitable surge protective device rated not greater than 2500 V must be installed on the input source.

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

80% rated circuit breaker	25 kVA		37.5 kVA		50 kVA	
Voltage (V)	480	600	480	600	480	600
Input (A)	80	70	100	90	125	100
Bypass (A)	80	70	100	90	125	100

Recommended Cable Sizes

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes (National Electrical Code, ANSI/NFPA 70). The maximum allowable conductor size is 250 kcmil.

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

Cable sizes in this manual are based on Table 310.15 of the National Electrical Code 2014 (NEC) with the following assertions:

- 90 °C conductors (THHN) for 75 °C termination
- Not more than one current carrying conductor per phase for 25-50 kVA UPS
- Not more than two current carrying conductor per phase for 75-100 kVA UPS
- Use of copper conductors only – do not use aluminum conductors.
- An ambient temperature of 30 °C

If the ambient temperature is greater than 30 °C, larger conductors are to be selected with the correction factors of the NEC. Equipment grounding conductors (EGC) are sized in accordance with NEC Article 250.122 and Table 250.122.

	25 kVA	37.5 kVA	50 kVA
Input	4 AWG	3 AWG	1 AWG
Bypass	4 AWG	3 AWG	1 AWG
Output	3 AWG	1/0 AWG	2/0 AWG
Battery	1/0 AWG	1/0 AWG	3/0 AWG

UPS Weights and Dimensions

	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
25 kVA with T001 input transformer	563 (1250)	2100 (82.7)	600 (23.6)	800 (31.5)
25 kVA with T001 input and T003 bypass transformer	923 (2050)	2100 (82.7)	1200 (47.2)	800 (31.5)
37.5 kVA with T001 input transformer	721 (1600)	2100 (82.7)	600 (23.6)	800 (31.5)
37.5 kVA with T001 input and T003 bypass transformer	1171 (2600)	2100 (82.7)	1200 (47.2)	800 (31.5)
50 kVA with T001 input transformer	901 (2000)	2100 (82.7)	1200 (47.2)	800 (31.5)
50 kVA with T001 input and T003 bypass transformer	1216 (2700)	2100 (82.7)	1200 (47.2)	800 (31.5)

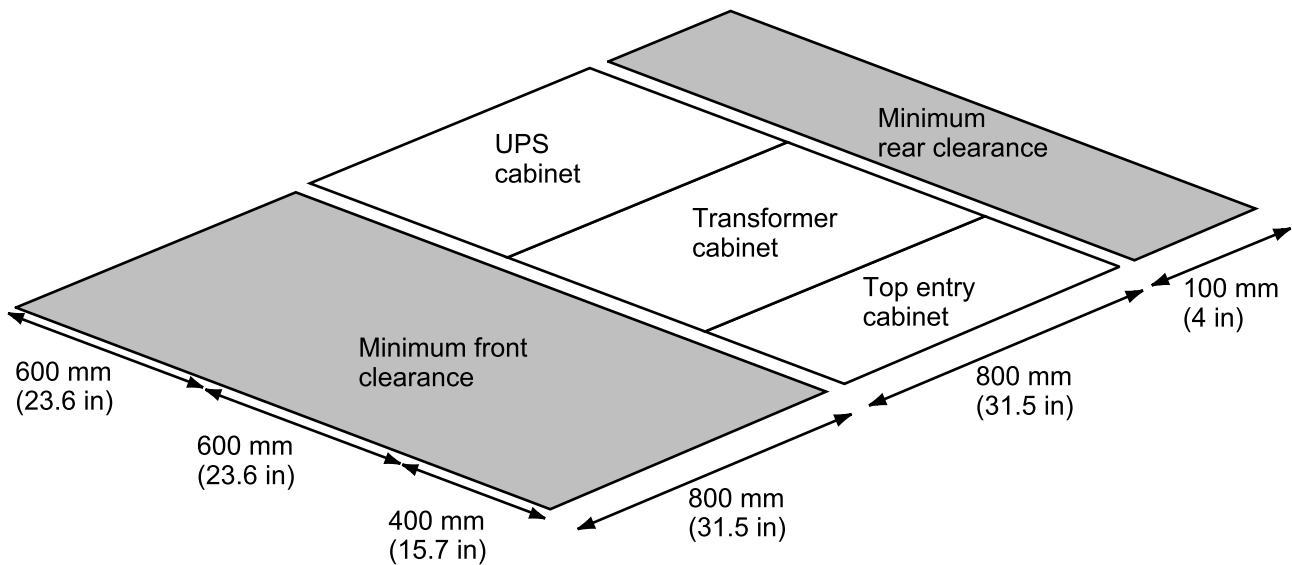
Top Entry Cabinet Weight and Dimensions

For top cable entry for the 25-50 kVA UPS.

	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
Top entry cabinet	91 (200)	2100 (82.7)	400 (15.8)	800 (31.5)

Clearance

25–50 kVA UPS



The UPS system requires a minimum rear clearance of 100 mm (4 in). There is no side clearance required for installation.

NOTE: If the optional filters are installed in the rear of the cabinets to obtain NEMA12 (IP54) rating, a rear clearance of 914 mm (36 in) is needed for replacement of the filters.

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

Environment

	Operating	Storage
Temperature	0 °C to 40 °C (32 °F to 104 °F) 0 °C to 25 °C (32 °F to 77 °F) for batteries	-30 °C to 80 °C (-22 °F to 176 °F) -15 °C to 40 °C (5 °F to 104 °F) for batteries
Relative humidity	0-95% non-condensing	0-95% non-condensing
Elevation according to IEC 62040-3	1000 m (3280 ft): 1.000 1500 m (4921 ft): 0.975 2000 m (6561 ft): 0.950 2500 m (8202 ft): 0.925 3000 m (9842 ft): 0.900	≤ 5000 m (16404 ft) above sea-level (or in an environment with equivalent atmospheric pressure)
Audible noise (1 m (3 ft) from surface)	65 dBA at 100% load	
Protection class	UL type 1/NEMA1 (IP42)	
Color	Light gray RAL7035	

Heat Dissipation

480–208 V

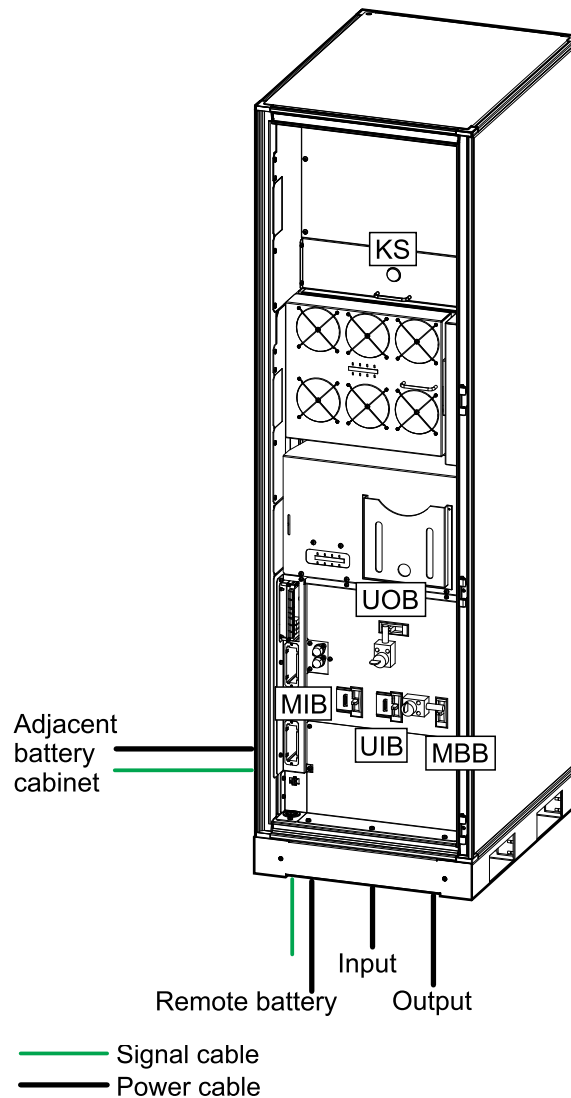
	25 kVA	37.5 kVA	50 kVA
Heat dissipation at 100% load (BTU/hr)	9478	14059	18536
Heat dissipation at 75% load (BTU/hr)	7426	10663	13588
Heat dissipation at 50% load (BTU/hr)	5597	7746	9373
Heat dissipation at 25% load (BTU/hr)	4524	5868	6600

600–208 V

	25 kVA	37.5 kVA	50 kVA
Heat dissipation at 100% load (BTU/hr)	9901	14693	18536
Heat dissipation at 75% load (BTU/hr)	7746	11139	14217
Heat dissipation at 50% load (BTU/hr)	5982	8313	10114
Heat dissipation at 25% load (BTU/hr)	5166	6786	7824

Installation

Installation Procedure for 25–37.5 kVA UPS with Bottom Cable Entry – Single Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING

TIPPING HAZARD

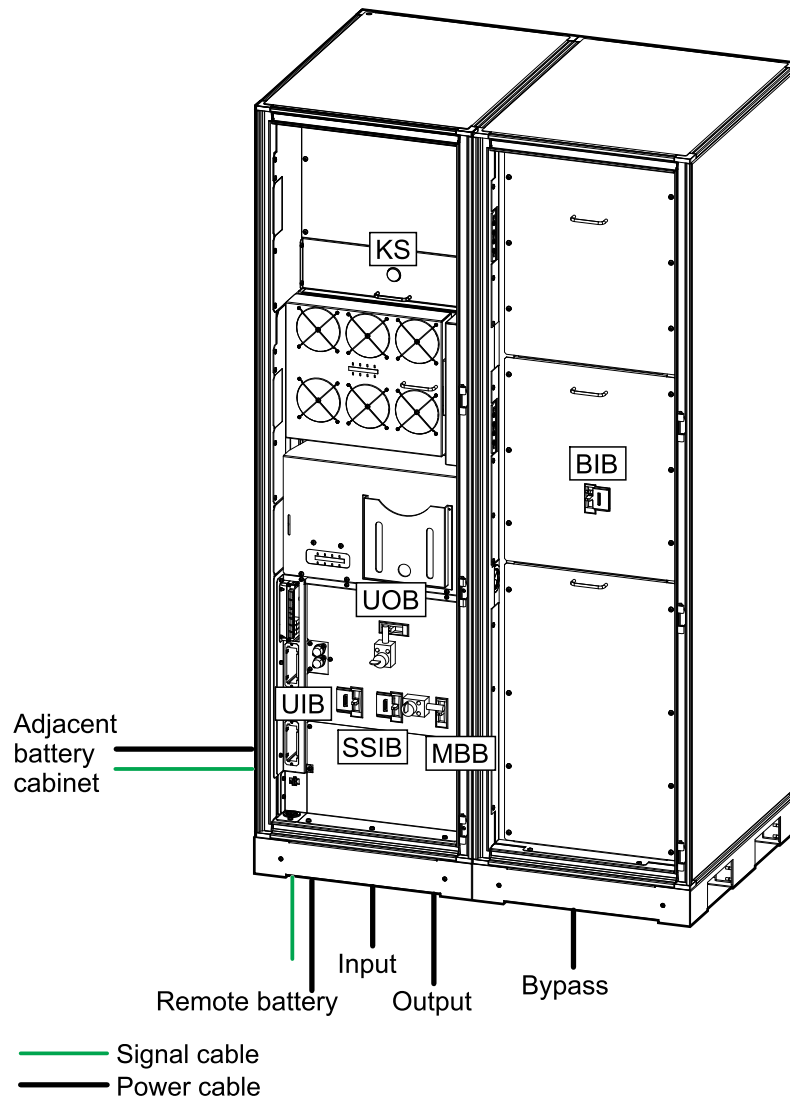
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

2. Remove the Kick Plates, page 31.
3. Install the Seismic Anchoring (Option), page 31.
4. Only in systems with adjacent battery cabinet(s): Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.
5. Prepare the UPS Cabinet for Cables, page 36.

6. *Connect the Power Cables in the UPS Cabinet for Single Mains, page 46.*
7. *Route the Signal Cables in Bottom Entry Systems, page 50.*
8. *Connect the Battery Signal Cables, page 54.*
9. *Connect the Remote Emergency Power Off (REPO), page 57.*
10. *Connect the Input Contacts and Output Relays (Option), page 58.*
11. *Final Installation Steps, page 59.*

Installation Procedure for 25–37.5 kVA UPS with Bottom Cable Entry – Dual Mains



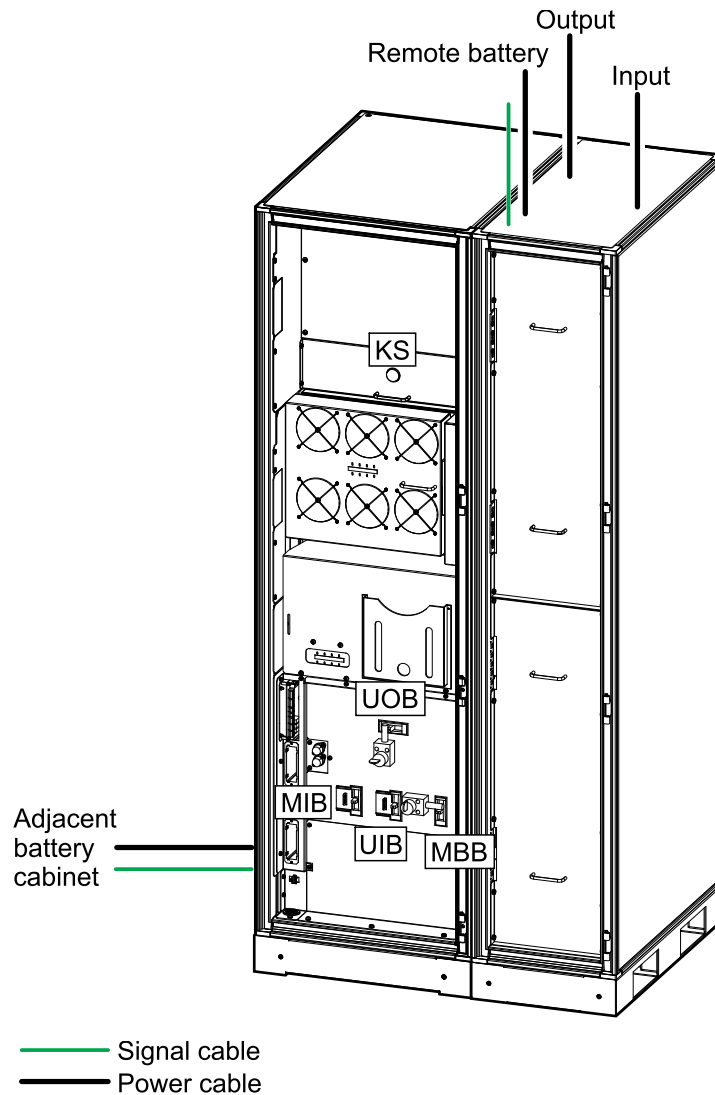
1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING
TIPPING HAZARD
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

2. Remove the Kick Plates, page 31.
3. Install the Seismic Anchoring (Option), page 31.
4. Only in systems with adjacent battery cabinet(s): Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.
5. Prepare the UPS Cabinet for Cables, page 36.
6. Prepare the Transformer Cabinet for Cables for Bottom Entry Systems, page 38.

7. *Connect the Power Cables in the UPS Cabinet and Transformer Cabinet for Dual Mains, page 48.*
8. *Route the Signal Cables in Bottom Entry Systems, page 50.*
9. *Connect the Battery Signal Cables, page 54.*
10. *Connect the Remote Emergency Power Off (REPO), page 57.*
11. *Connect the Input Contacts and Output Relays (Option), page 58.*
12. *Final Installation Steps, page 59.*

Installation Procedure for 25–37.5 kVA UPS with Top Cable Entry – Single Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING

TIPPING HAZARD

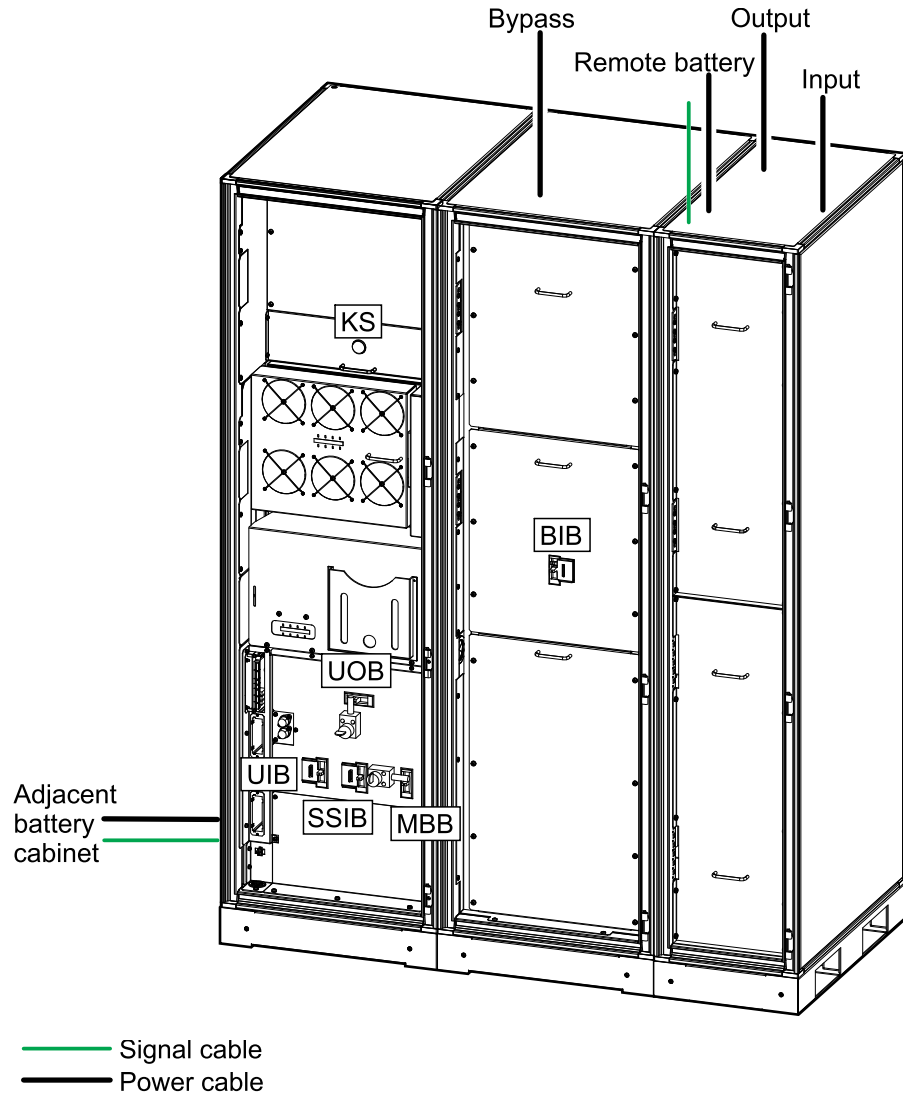
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

2. Remove the right side panel with ground strap from the UPS cabinet and install the side panel on the right side of the top entry cabinet.
3. *Remove the Kick Plates, page 31.*
4. *Install the Seismic Anchoring (Option), page 31.*
5. Only in systems with adjacent battery cabinet(s): *Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.*
6. *Prepare the UPS Cabinet for Cables, page 36.*
7. *Prepare the Top Entry Cabinet for Cables, page 41.*

8. *Connect the Power Cables in the Top Entry Cabinet for Single Mains, page 45.*
9. *Connect the Power Cables in the UPS Cabinet for Single Mains, page 46.*
10. *Route the Signal Cables in Top Entry Systems, page 51.*
11. *Connect the Battery Signal Cables, page 54.*
12. *Connect the Remote Emergency Power Off (REPO), page 57.*
13. *Connect the Input Contacts and Output Relays (Option), page 58.*
14. *Final Installation Steps, page 59.*

Installation Procedure for 25–37.5 kVA UPS with Top Cable Entry – Dual Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING

TIPPING HAZARD

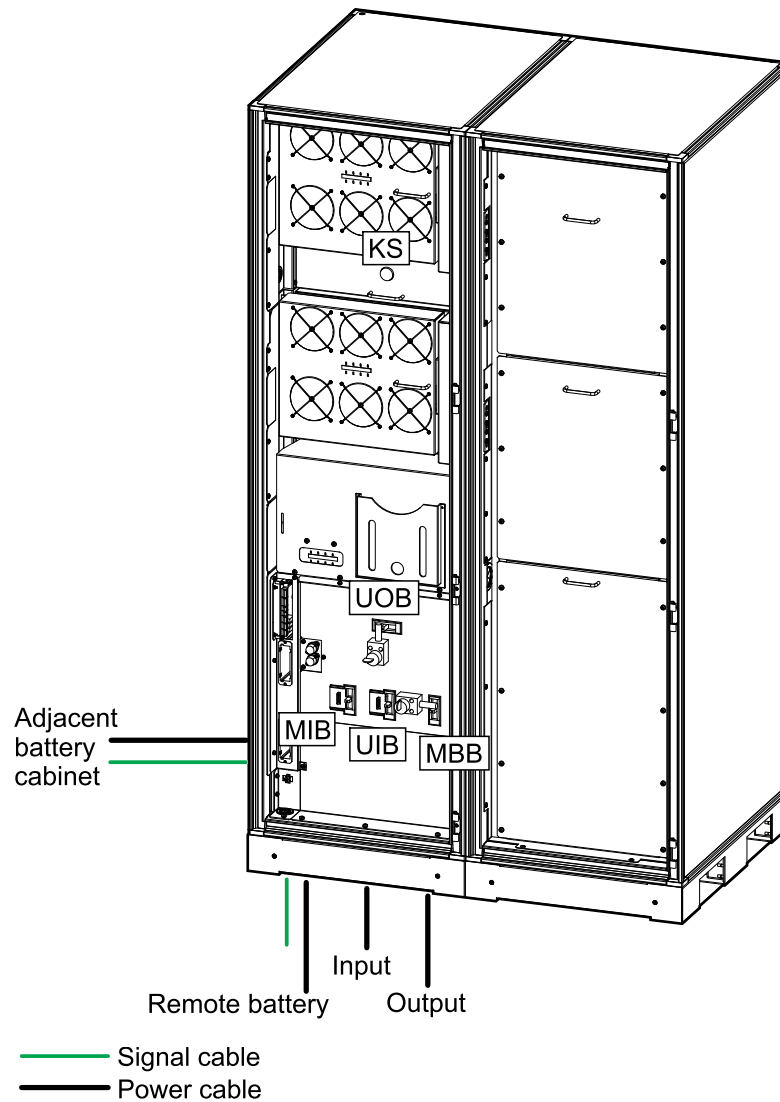
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

2. Remove the right side panel with ground strap from the transformer cabinet and install the side panel on the right side of the top entry cabinet.
3. *Remove the Kick Plates, page 31.*
4. *Install the Seismic Anchoring (Option), page 31.*
5. Only in systems with adjacent battery cabinet(s): *Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.*
6. *Prepare the UPS Cabinet for Cables, page 36.*
7. *Prepare the Transformer Cabinet for Cables for Top Entry Systems, page 40.*

8. *Prepare the Top Entry Cabinet for Cables, page 41.*
9. *Connect the Power Cables in the Top Entry Cabinet for Dual Mains, page 47.*
10. *Connect the Power Cables in the UPS Cabinet and Transformer Cabinet for Dual Mains, page 48.*
11. *Route the Signal Cables in Top Entry Systems, page 51.*
12. *Connect the Battery Signal Cables, page 54.*
13. *Connect the Remote Emergency Power Off (REPO), page 57.*
14. *Connect the Input Contacts and Output Relays (Option), page 58.*
15. *Final Installation Steps, page 59.*

Installation Procedure for 50 kVA UPS with Bottom Cable Entry – Single Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

⚠ WARNING

TIPPING HAZARD

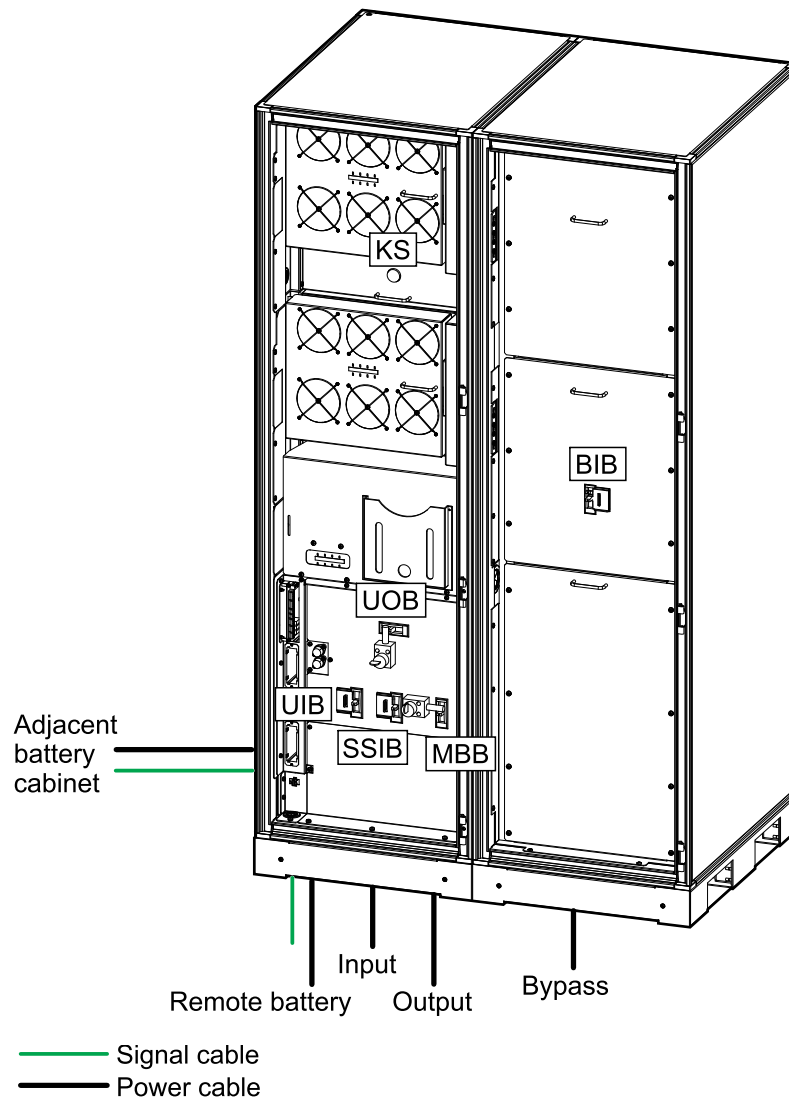
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

2. Remove the Kick Plates, page 31.
3. Install the Seismic Anchoring (Option), page 31.
4. Only in systems with adjacent battery cabinet(s): Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.
5. Prepare the UPS Cabinet for Cables, page 36.
6. Connect the Power Cables in the UPS Cabinet for Single Mains, page 46.
7. Route the Signal Cables in Bottom Entry Systems, page 50.

8. *Connect the Battery Signal Cables, page 54.*
9. *Connect the Remote Emergency Power Off (REPO), page 57.*
10. *Connect the Input Contacts and Output Relays (Option), page 58.*
11. *Final Installation Steps, page 59.*

Installation Procedure for 50 kVA UPS with Bottom Cable Entry – Dual Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING

TIPPING HAZARD

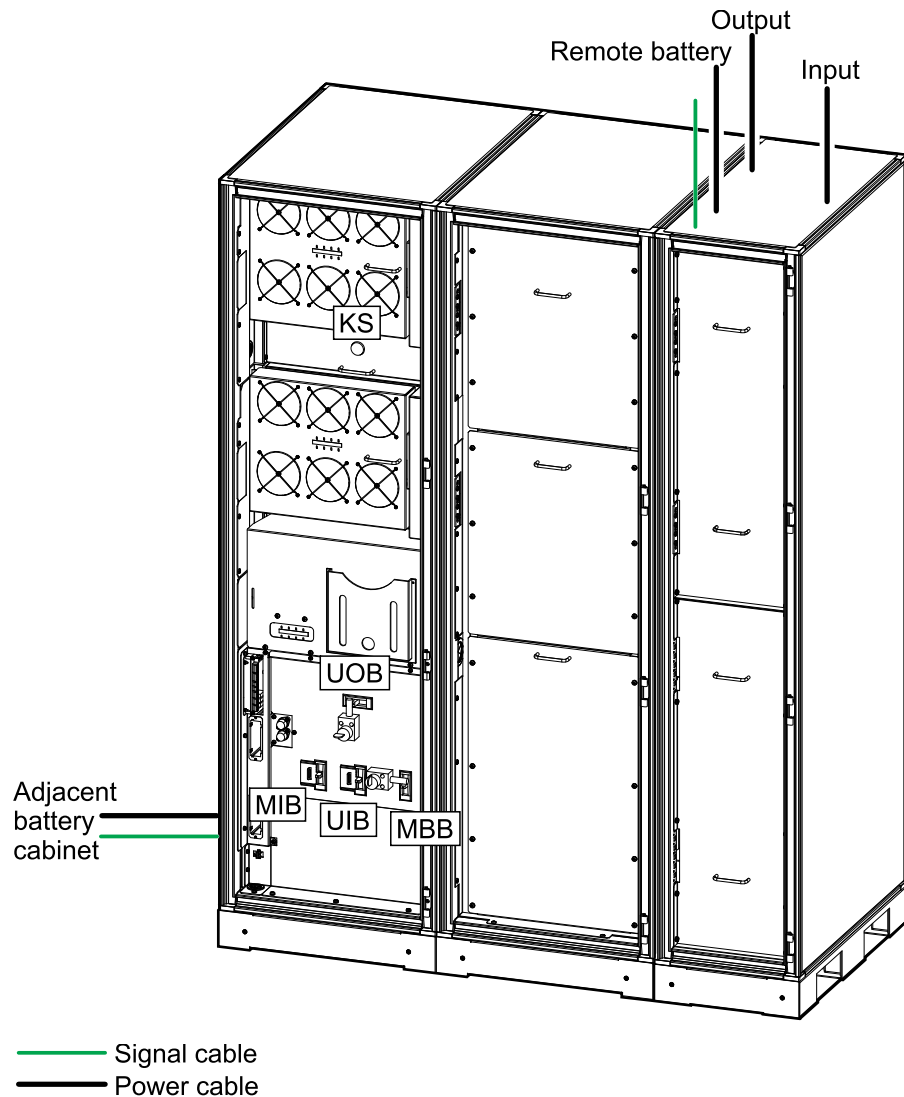
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

2. Remove the Kick Plates, page 31.
3. Install the Seismic Anchoring (Option), page 31.
4. Only in systems with adjacent battery cabinet(s): Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.
5. Prepare the UPS Cabinet for Cables, page 36.
6. Prepare the Transformer Cabinet for Cables for Bottom Entry Systems, page 38.

7. *Connect the Power Cables in the UPS Cabinet and Transformer Cabinet for Dual Mains, page 48.*
8. *Route the Signal Cables in Bottom Entry Systems, page 50.*
9. *Connect the Battery Signal Cables, page 54.*
10. *Connect the Remote Emergency Power Off (REPO), page 57.*
11. *Connect the Input Contacts and Output Relays (Option), page 58.*
12. *Final Installation Steps, page 59.*

Installation Procedure for 50 kVA UPS with Top Cable Entry – Single Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING

TIPPING HAZARD

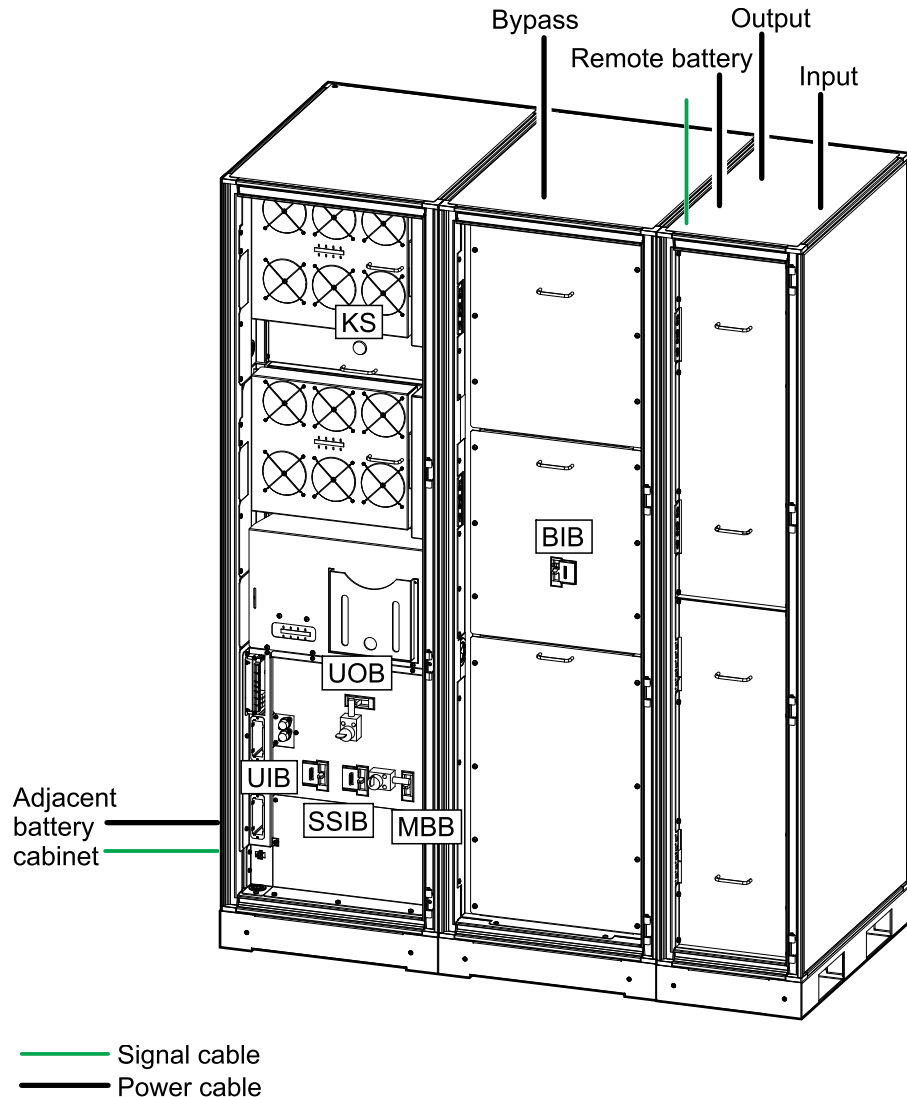
The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

2. Remove the right side panel with ground strap from the transformer cabinet and install the side panel on the right side of the top entry cabinet.
3. *Remove the Kick Plates, page 31.*
4. *Install the Seismic Anchoring (Option), page 31.*
5. *Only in systems with adjacent battery cabinet(s): Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.*
6. *Prepare the UPS Cabinet for Cables, page 36.*
7. *Prepare the Top Entry Cabinet for Cables, page 41.*

8. *Connect the Power Cables in the Top Entry Cabinet for Single Mains, page 45.*
9. *Connect the Power Cables in the UPS Cabinet for Single Mains, page 46.*
10. *Route the Signal Cables in Top Entry Systems, page 51.*
11. *Connect the Battery Signal Cables, page 54.*
12. *Connect the Remote Emergency Power Off (REPO), page 57.*
13. *Connect the Input Contacts and Output Relays (Option), page 58.*
14. *Final Installation Steps, page 59.*

Installation Procedure for 50 kVA UPS with Top Cable Entry – Dual Mains



1. Move the cabinet(s) to the installation location with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

▲ WARNING

TIPPING HAZARD

The cabinet is top-heavy. Move the cabinet carefully with a forklift or a low profile 21 inch pallet jack by lifting from the sides.

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

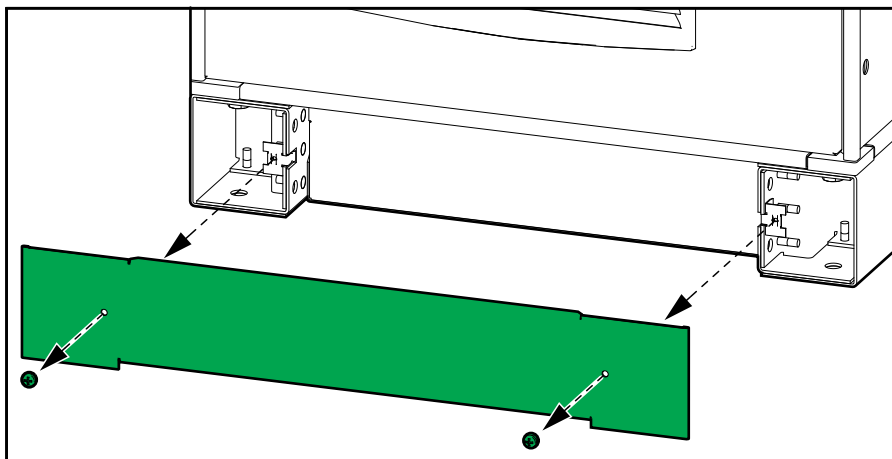
2. Remove the right side panel with ground strap from the transformer cabinet and install the side panel on the right side of the top entry cabinet.
3. *Remove the Kick Plates, page 31.*
4. *Install the Seismic Anchoring (Option), page 31.*
5. Only in systems with adjacent battery cabinet(s): *Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s), page 34.*
6. *Prepare the UPS Cabinet for Cables, page 36.*
7. *Prepare the Transformer Cabinet for Cables for Top Entry Systems, page 40.*

8. *Prepare the Top Entry Cabinet for Cables, page 41.*
9. *Connect the Power Cables in the Top Entry Cabinet for Dual Mains, page 47.*
10. *Connect the Power Cables in the UPS Cabinet and Transformer Cabinet for Dual Mains, page 48.*
11. *Route the Signal Cables in Top Entry Systems, page 51.*
12. *Connect the Battery Signal Cables, page 54.*
13. *Connect the Remote Emergency Power Off (REPO), page 57.*
14. *Connect the Input Contacts and Output Relays (Option), page 58.*
15. *Final Installation Steps, page 59.*

Remove the Kick Plates

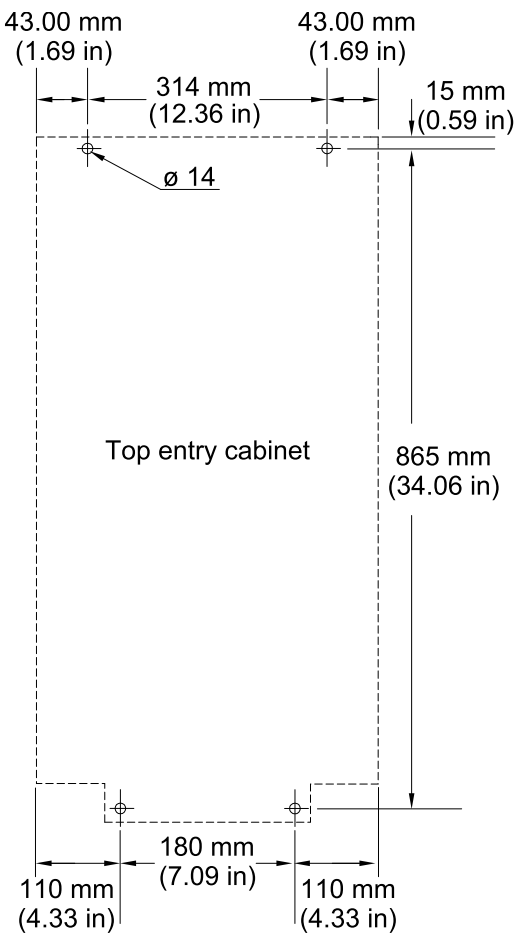
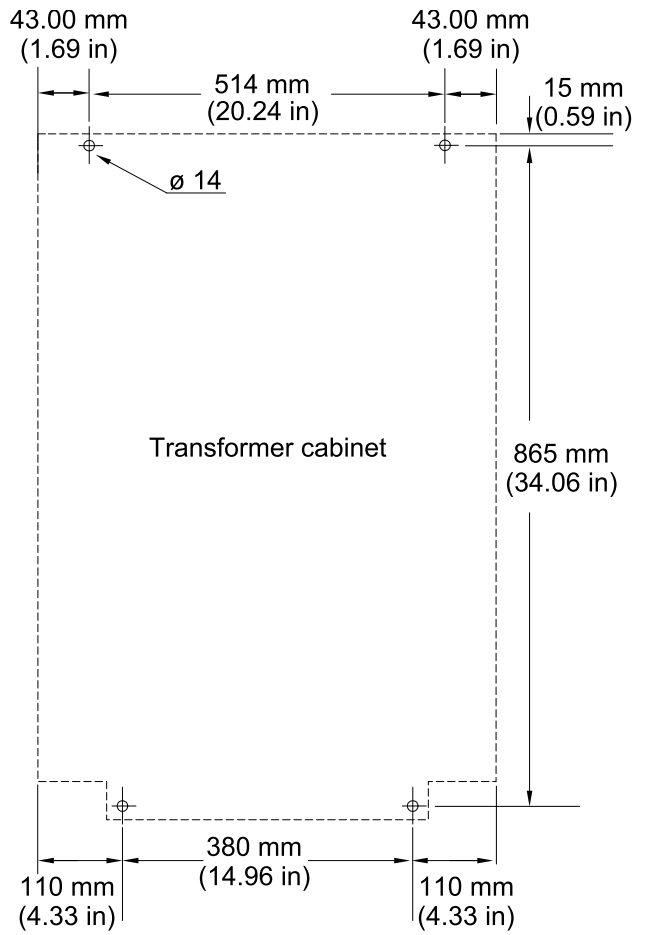
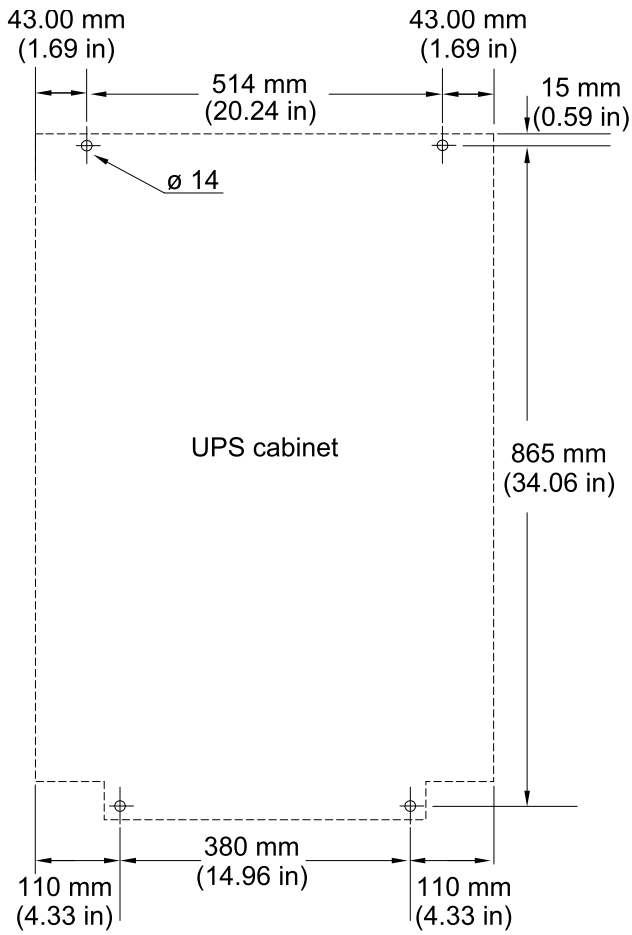
NOTE: Front and rear kick plates are removed in the same way on all the cabinets. Remove the kick plates as needed for cabling access and save for final installation steps.

1. Remove the M5 screws.
2. Remove the kick plate from the spring clips.



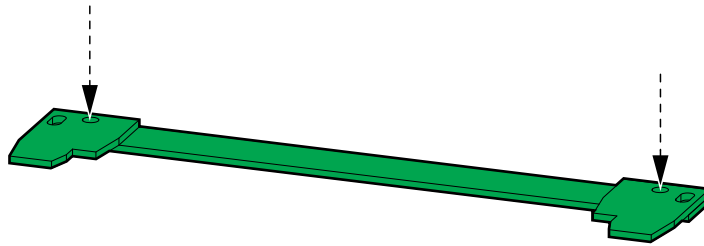
Install the Seismic Anchoring (Option)

NOTE: Anchoring bolts are not supplied. Use appropriate hardware for the floor type.



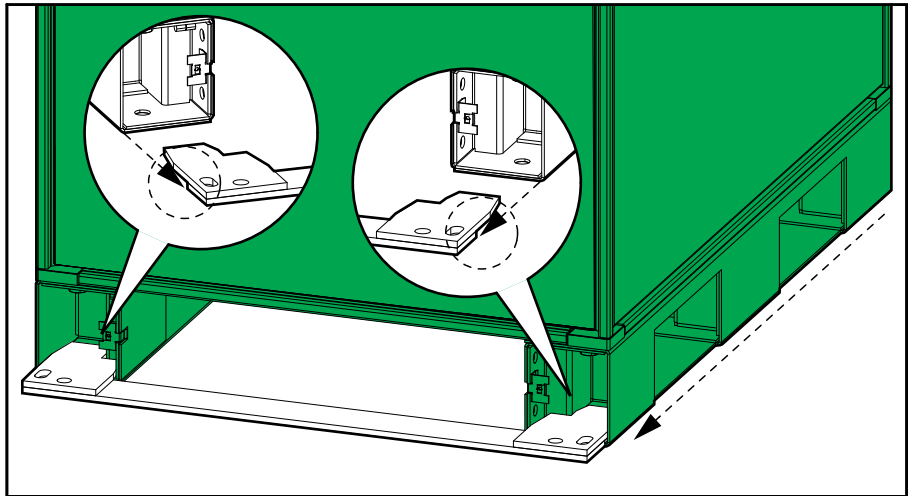
1. Drill anchoring holes in the floor according to your system.
2. Install the rear seismic anchoring bracket(s) on the floor.

Front View



3. Push the cabinet(s) into position against the rear seismic anchoring brackets.

Rear View

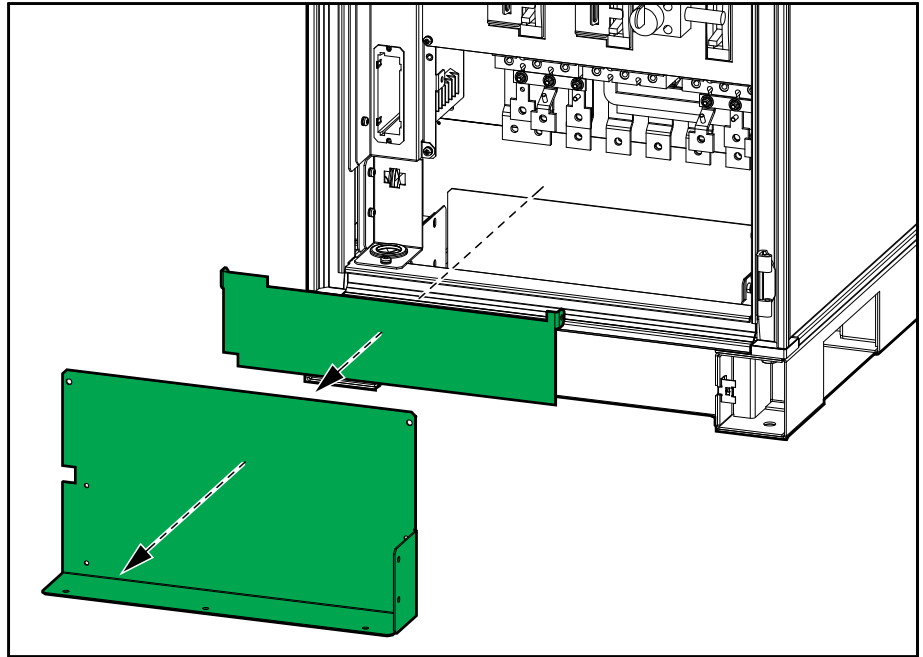


4. Save the front seismic anchoring brackets – they will be installed in *Final Installation Steps, page 59*.

Prepare the UPS Cabinet for Cables in Systems with Adjacent Battery Cabinet(s)

1. Remove the two plates in the bottom of the UPS cabinet.

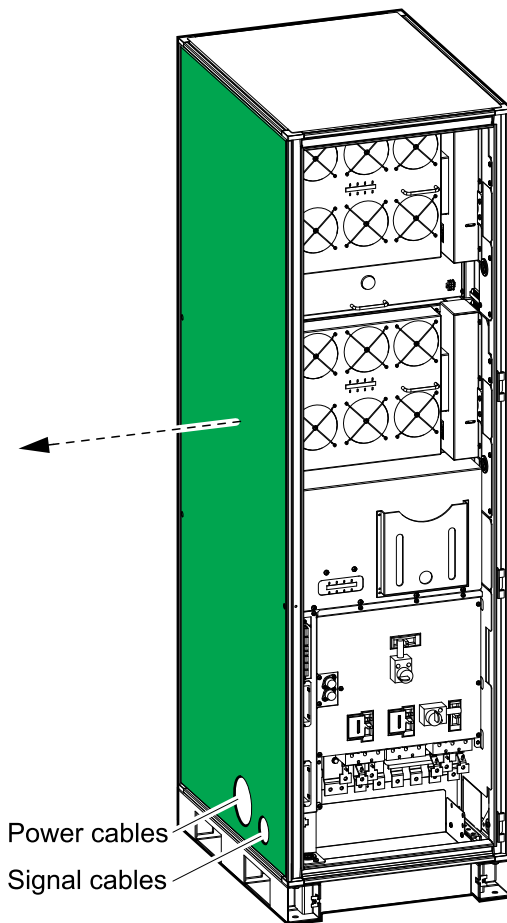
Front View of the UPS Cabinet



2. Note the position of the two cable inlets inside the UPS cabinet and mark it on the left side panel.

3. Remove the left side panel from the UPS cabinet.

Front View of the UPS Cabinet



4. Drill/cut holes in the marked cable inlet positions and install conduits for power cables and for signal cables in the side panel. Conduits are not provided.

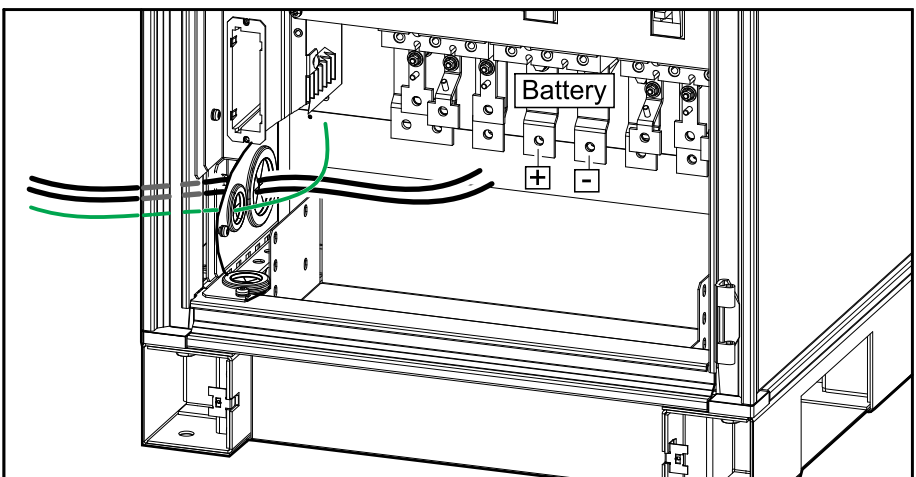
⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or cut holes for cables or conduits with the side panel 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.

Front View of the UPS Cabinet

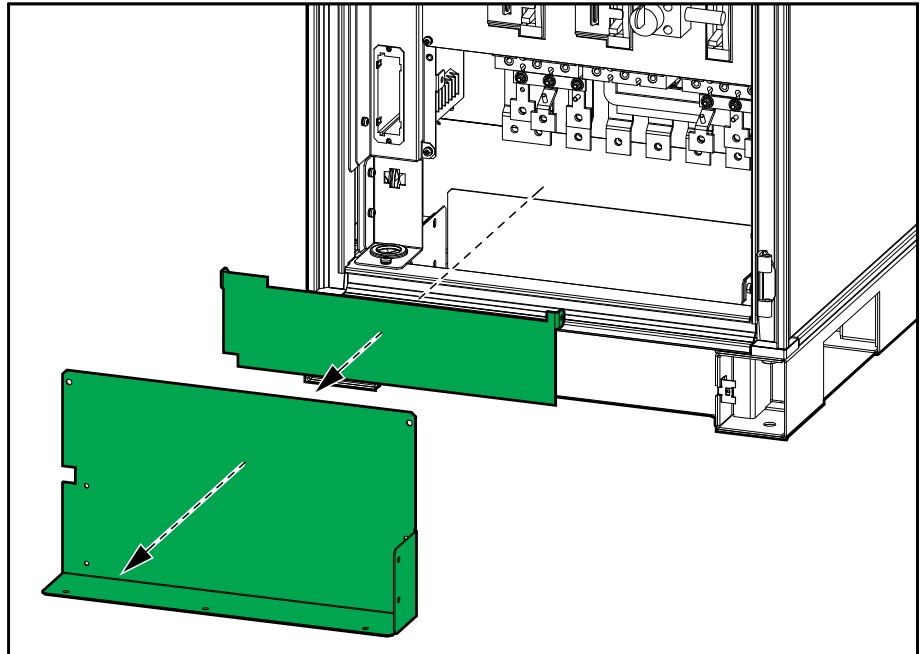


5. Reinstall the side panel on the UPS cabinet.

Prepare the UPS Cabinet for Cables

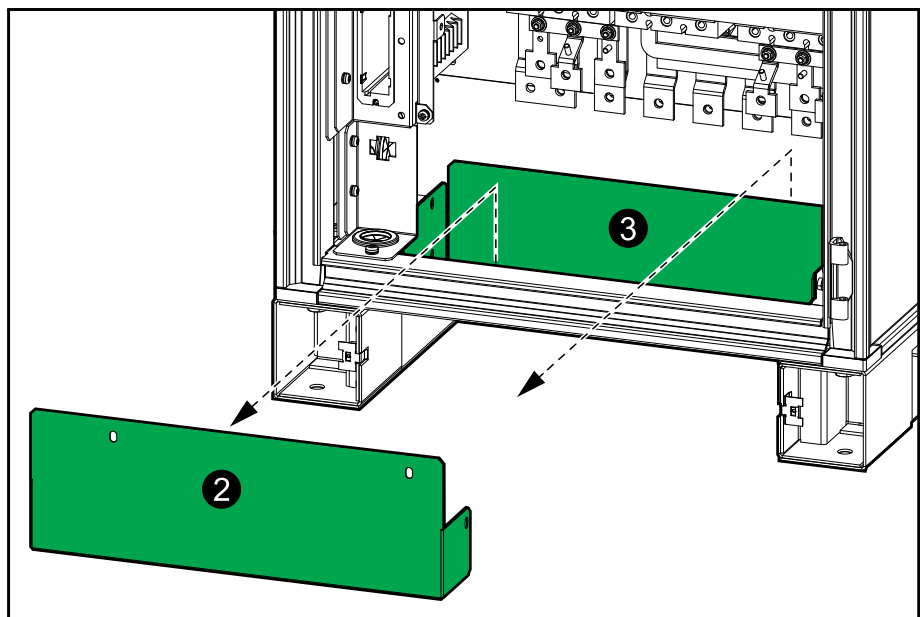
1. Remove the two plates in the bottom of the UPS cabinet.

Front View of the UPS Cabinet



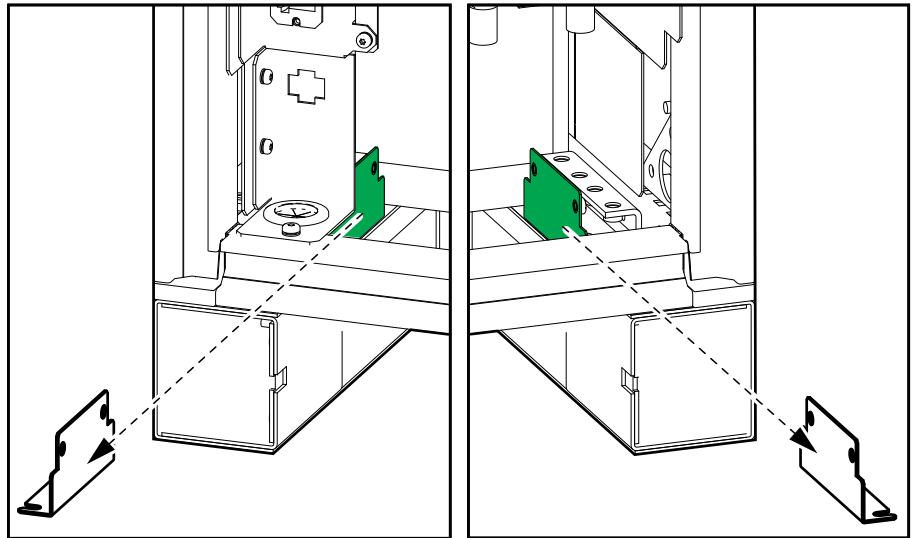
2. Remove the front part of the conduit box in the bottom of the UPS cabinet.
3. Remove the rear part of the conduit box in the bottom of the UPS cabinet.

Front View of the UPS Cabinet



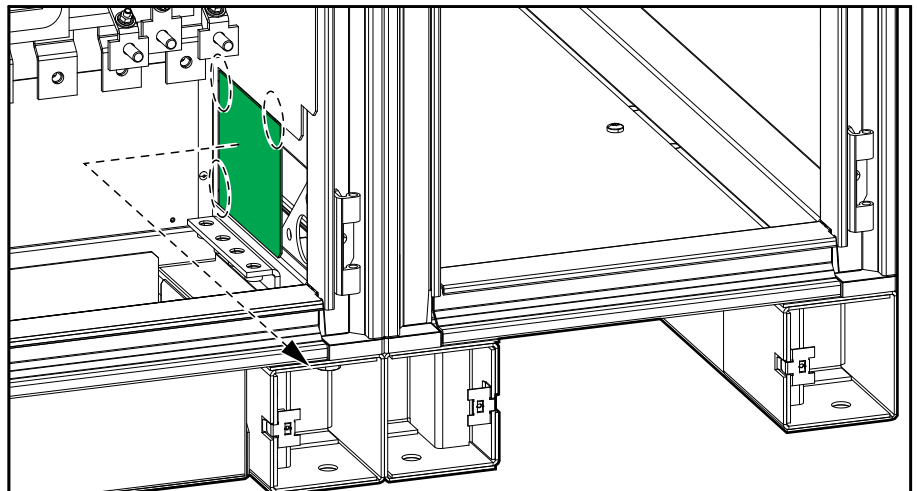
- Remove the indicated brackets in the right and left side of the UPS cabinet. Discard the brackets, but save the screws for installation.

Front View of the UPS Cabinet



- Only in top entry systems with top entry cabinet placed next to the UPS cabinet:** Cut the three small tabs on the plate in the right side of the UPS cabinet and remove the plate to create more access space for cable entry.

Front View of the UPS Cabinet and Top Entry Cabinet



- Only in bottom entry systems:** Drill holes and install conduits for power cables and for signal cables in the bottom of the rear part of the conduit box. Conduits are not provided.

⚠ DANGER

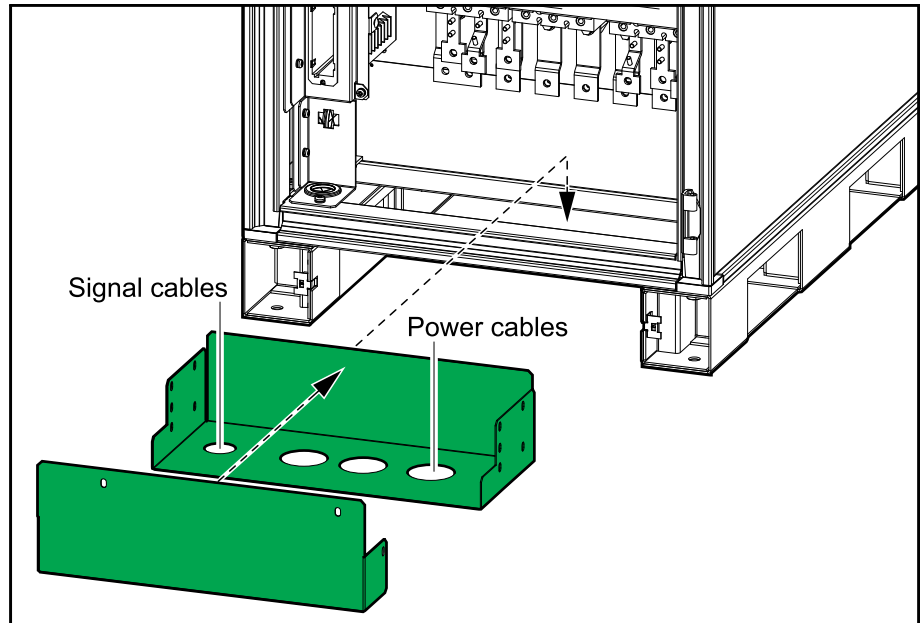
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or cut holes for cables or conduits with the conduit box 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.

7. Reinstall the rear and front part of the conduit box with three screws in each side and two screws in the front. Note that the conduit box is installed in a lower position now that the brackets are removed.

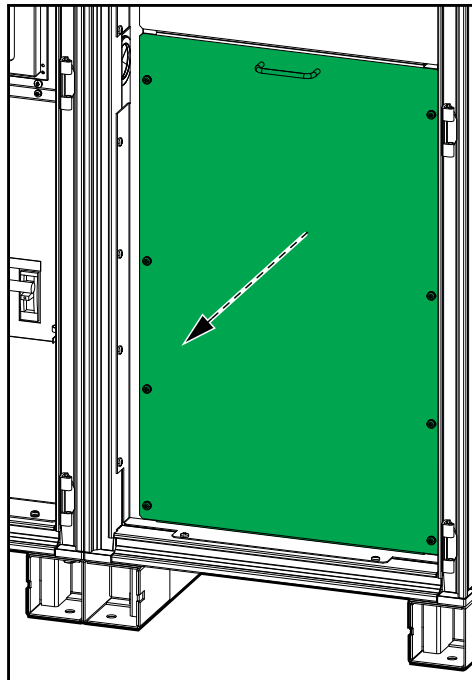
Front View of the UPS Cabinet



Prepare the Transformer Cabinet for Cables for Bottom Entry Systems

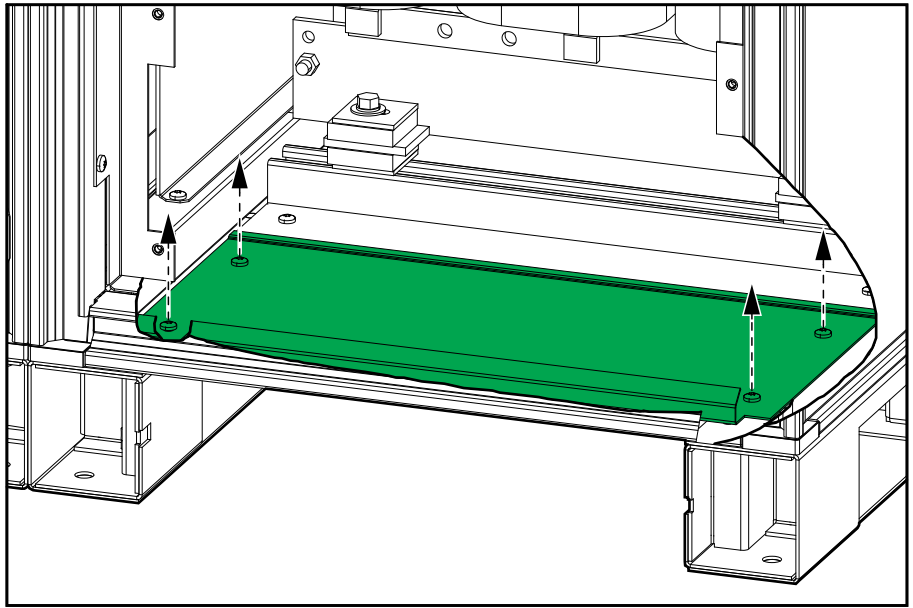
1. Remove the screws and the bottom front plate from the transformer cabinet.

Front View of the Transformer Cabinet



2. Remove the bottom gland plate in the transformer cabinet.

Front View of the Transformer Cabinet



3. Drill holes and install conduits for bypass cables in the bottom gland plate. Conduits are not provided.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

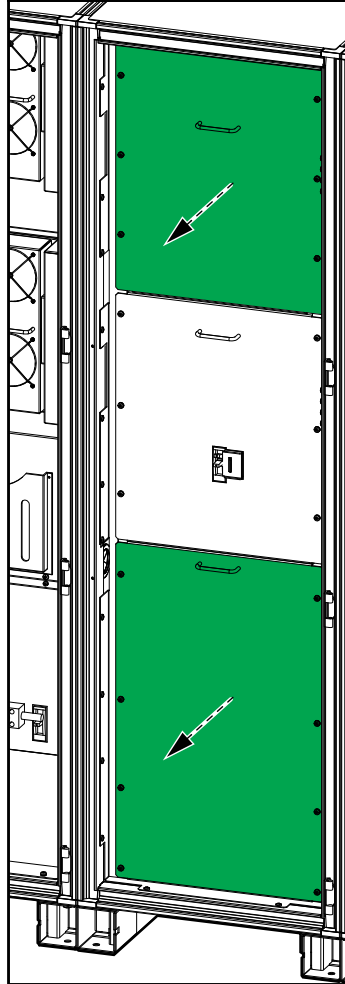
Failure to follow these instructions will result in death or serious injury.

4. Reinstall the bottom gland plate in the transformer cabinet.

Prepare the Transformer Cabinet for Cables for Top Entry Systems

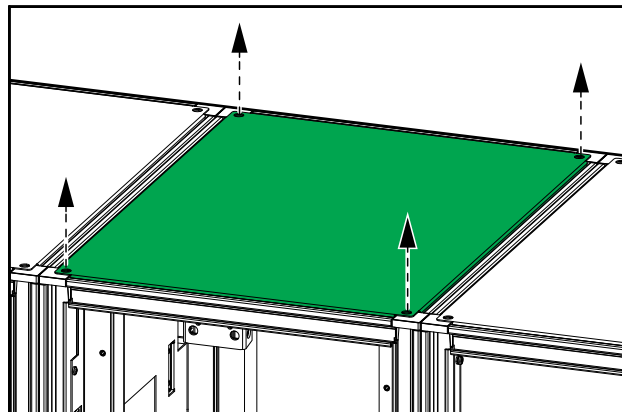
1. Remove the screws and the top and bottom front plates from the transformer cabinet.

Front View of the Transformer Cabinet



2. Remove the top plate in the transformer cabinet.

Front View of the Transformer Cabinet



3. Drill holes and install conduits for bypass cables in the top plate. Conduits are not provided.

⚠ DANGER

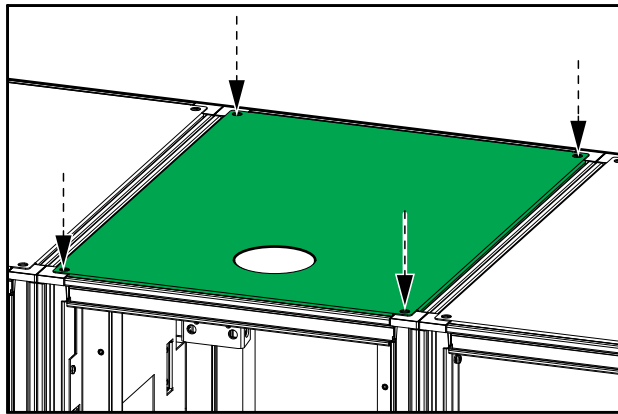
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or cut holes for cables or conduits with the top plate 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.

4. Reinstall the top plate in the transformer cabinet.

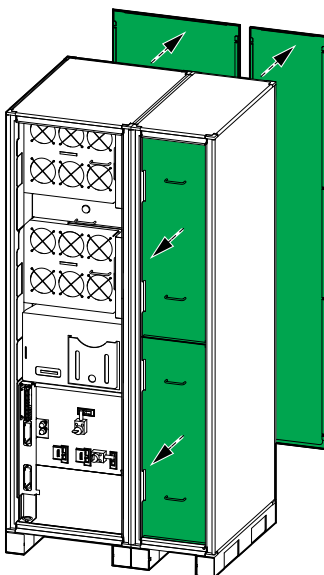
Front View of the Transformer Cabinet



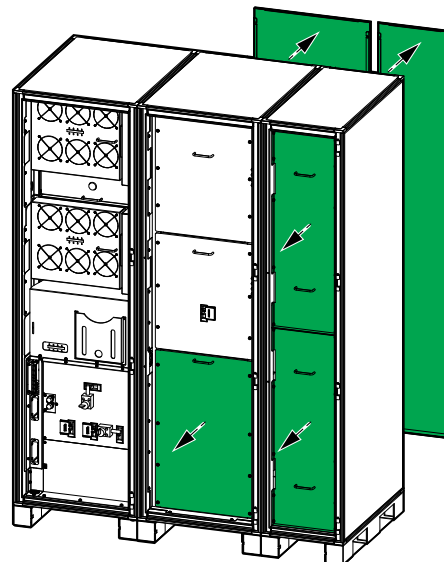
Prepare the Top Entry Cabinet for Cables

1. Remove the rear panel from the UPS cabinet/transformer cabinet and the top entry cabinet.
2. Remove the two front plates from the top entry cabinet and the bottom front plate from the transformer cabinet (if present).

Front View of UPS Cabinet and Top Entry Cabinet

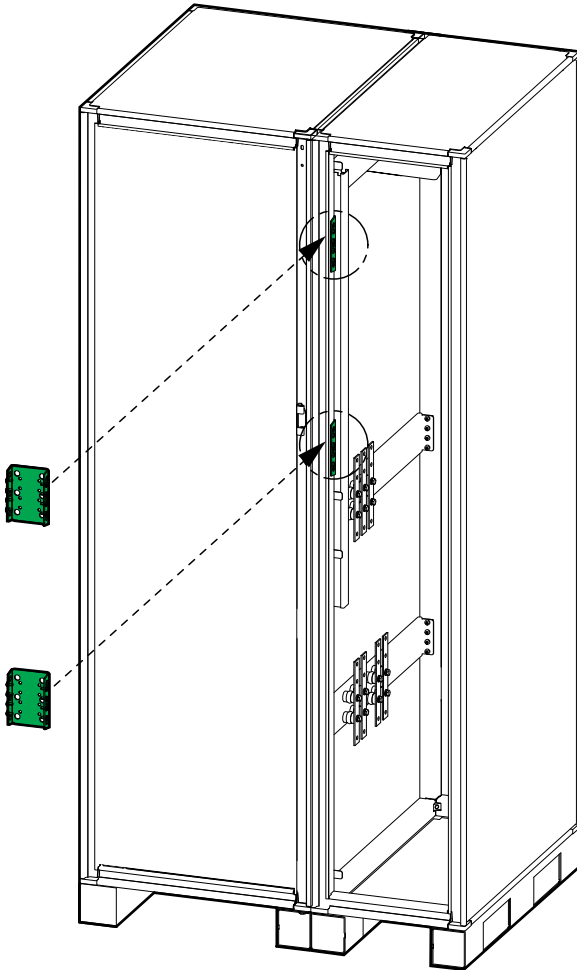


Front View of UPS Cabinet, Transformer Cabinet, and Top Entry Cabinet

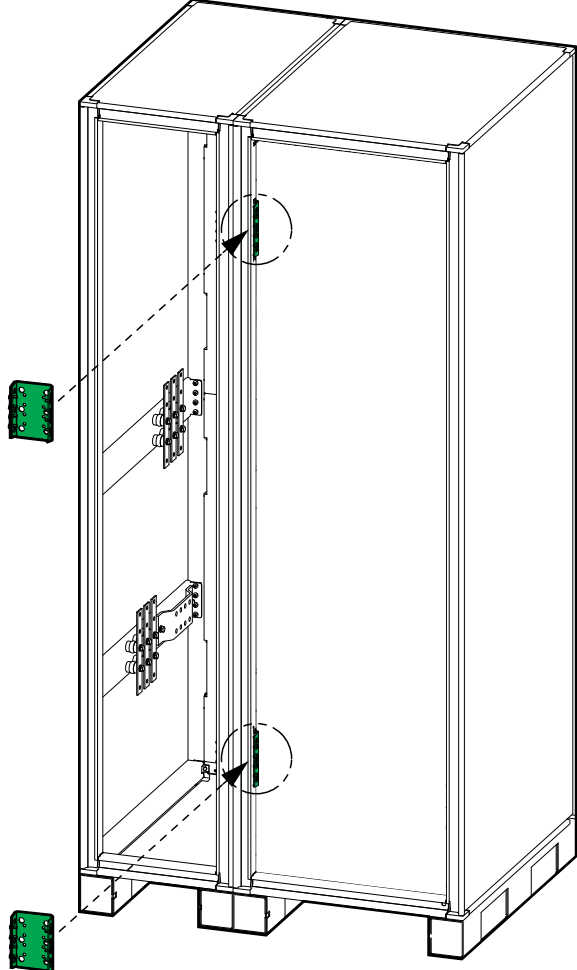


3. Install two interconnection brackets in the front of the cabinets and two interconnection brackets in the rear of the cabinets. Use C-clamps to hold the cabinets together to make the installation easier. Use four screws on each side of each interconnection bracket to fasten it to the cabinet frame.

Front View of the UPS/Transformer Cabinet and the Top Entry Cabinet

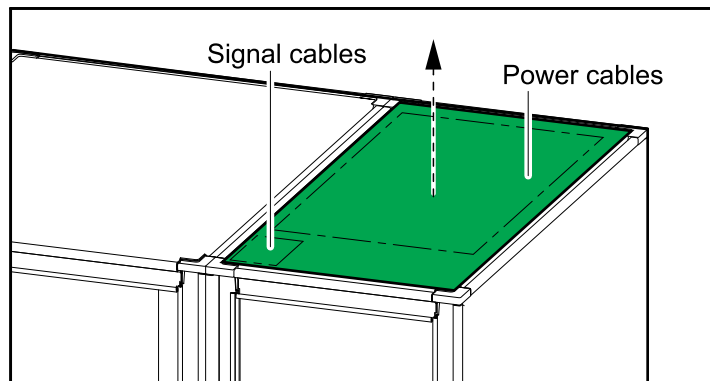


Rear View of the Top Entry Cabinet and the UPS/Transformer Cabinet



4. Reinstall the rear panels on the UPS cabinet/transformer cabinet and the top entry cabinet.
5. Remove the top gland plate in the top entry cabinet.

Front View of the UPS/Transformer Cabinet and the Top Entry Cabinet



6. Drill holes and install conduits for power cables and for signal cables in the top gland plate. Conduits are not provided.

⚠ DANGER

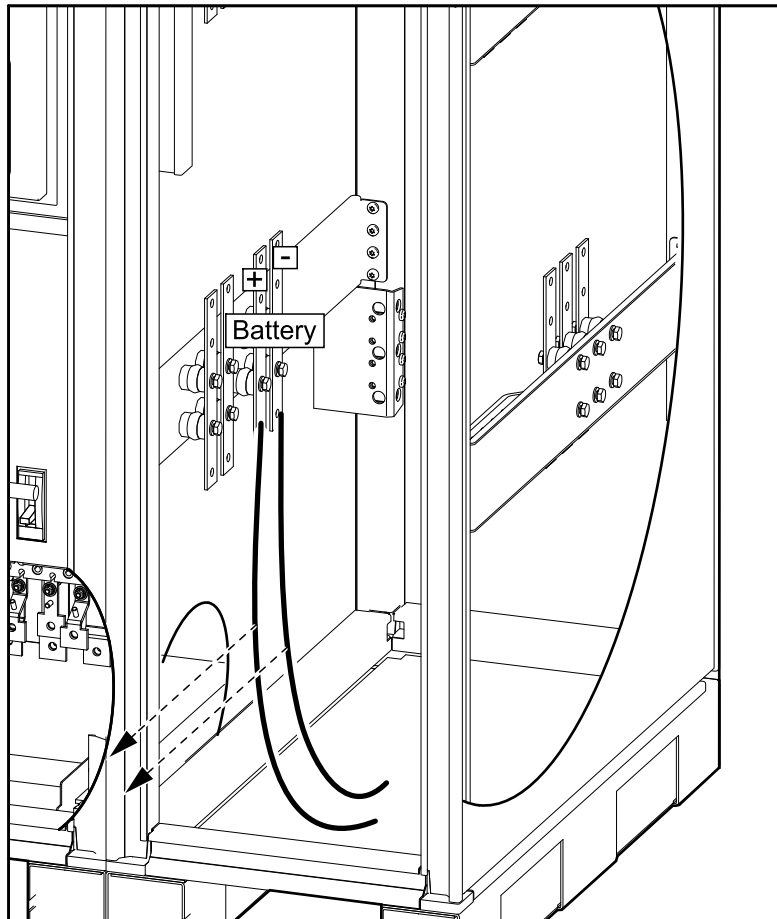
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or cut holes for cables or conduits with the gland plate 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.

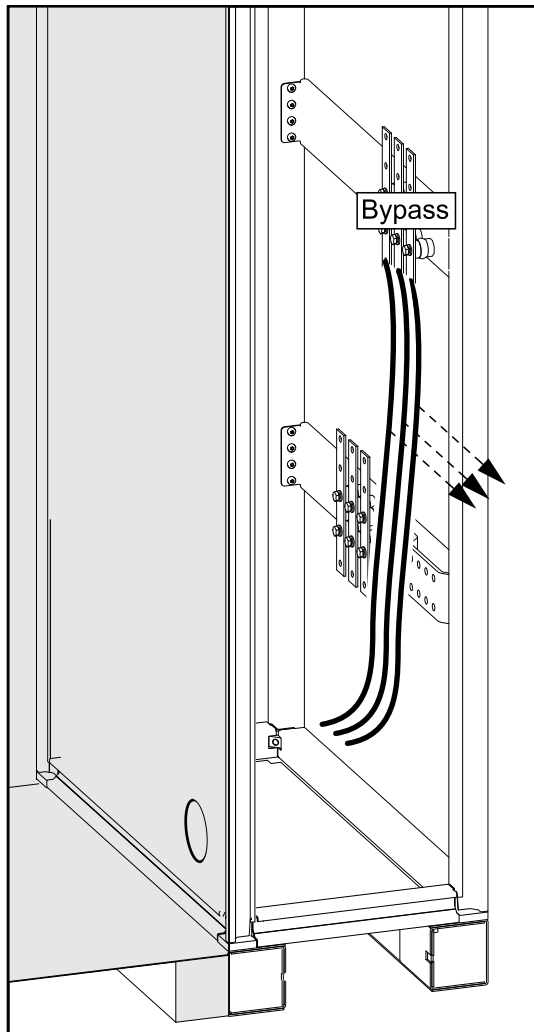
7. Reinstall the top gland plate in the top entry cabinet.
8. **Only in systems with adjacent battery cabinet(s):** Remove the preinstalled battery cables from the battery busbars (+,-) in the left side of the top entry cabinet. The battery busbars inside the top entry cabinet are only for remote battery connections.

Front View of the Top Entry Cabinet



9. Remove the three preinstalled bypass cables in the right side of the top entry cabinet.

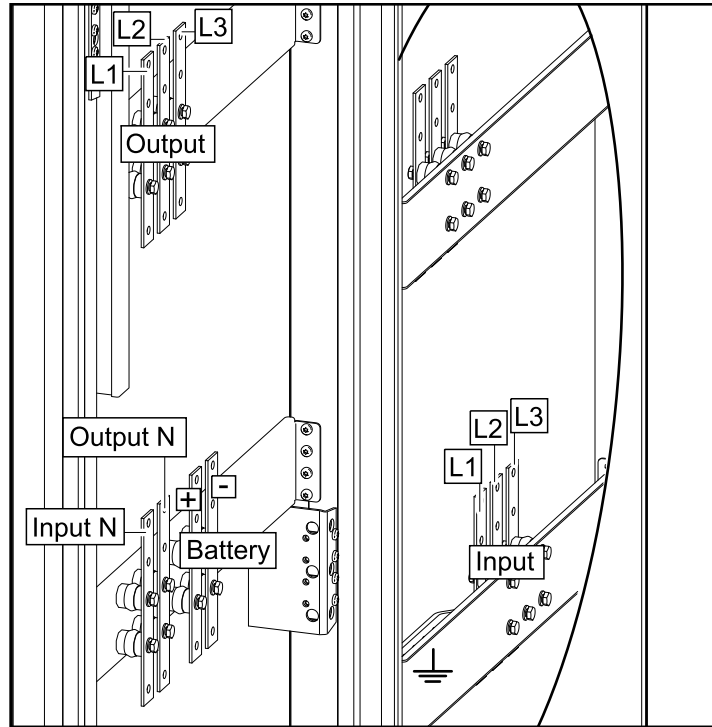
Front View of the Top Entry Cabinet



Connect the Power Cables in the Top Entry Cabinet for Single Mains

1. Route the input cables through the top gland plate and connect to the input busbars (L1, L2, L3, N) and to the ground busbar in the top entry cabinet.

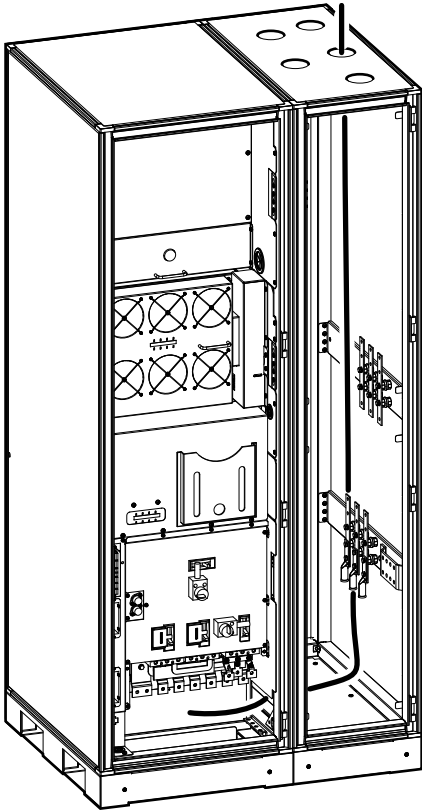
Front View of the Top Entry Cabinet



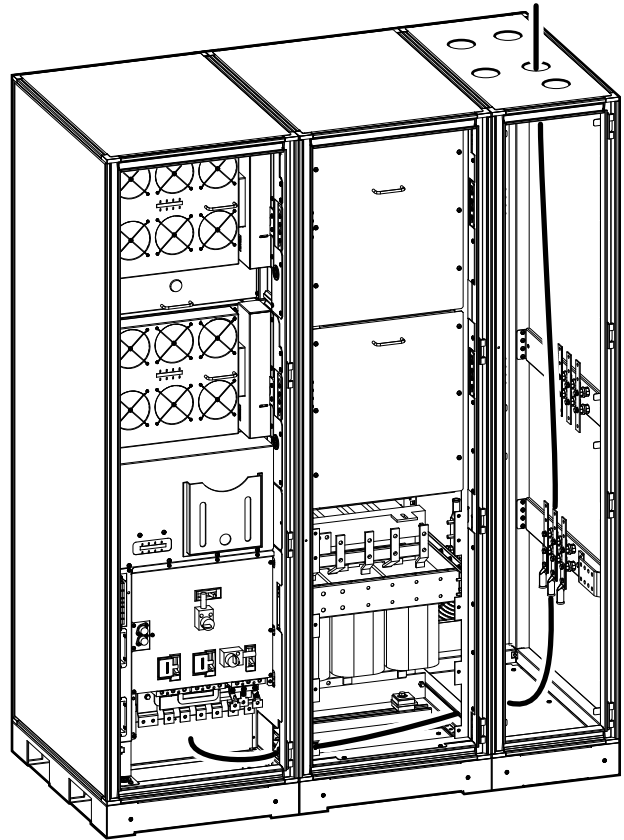
2. Route the output cables through the top gland plate and connect to the output busbars (L1, L2, L3, N) and to the ground busbar in the top entry cabinet.
3. **Only in systems with remote battery cabinet(s):** Route the battery cables from the remote battery cabinet(s) through the top gland plate and connect to the battery busbars (+, -) and the ground busbar in the top entry cabinet.

4. Route the preinstalled cables from the top entry cabinet through the transformer cabinet (if present) and into the UPS cabinet as shown.

Front View of UPS Cabinet and Top Entry Cabinet



Front View of UPS Cabinet, Transformer Cabinet, and Top Entry Cabinet

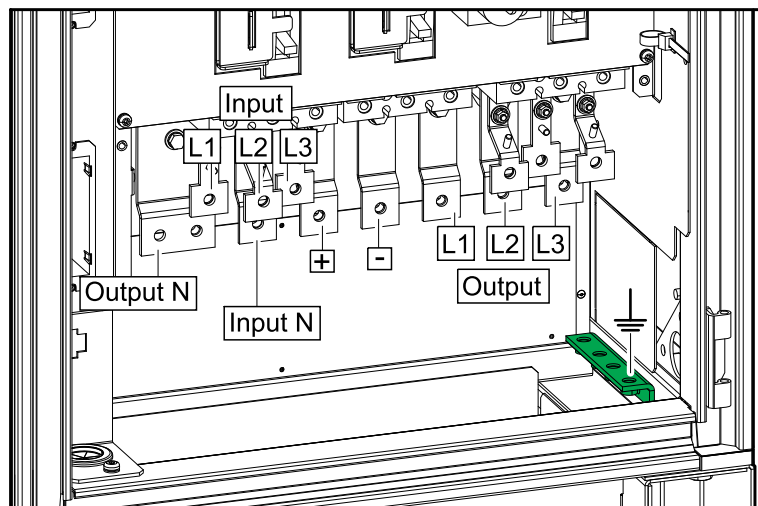


Connect the Power Cables in the UPS Cabinet for Single Mains

NOTE: Route the battery cables from the adjacent battery cabinet(s) through the left side panel into the UPS cabinet.

1. Connect the input cables to the input busbars (L1, L2, L3, N) and to the ground busbar.

Front View of the UPS Cabinet

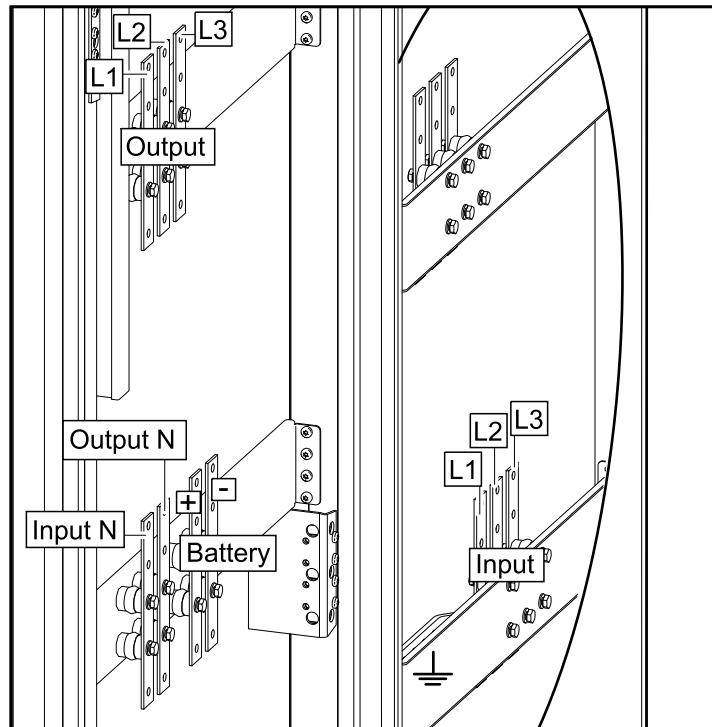


2. Connect the output cables to the output busbars (L1, L2, L3, N) and to the ground busbar.
3. Connect the battery cables to the battery busbars (+, -) and to the ground busbar.

Connect the Power Cables in the Top Entry Cabinet for Dual Mains

1. Route the input cables through the top gland plate and connect to the input busbars (L1, L2, L3, N) and to the ground busbar in the top entry cabinet.

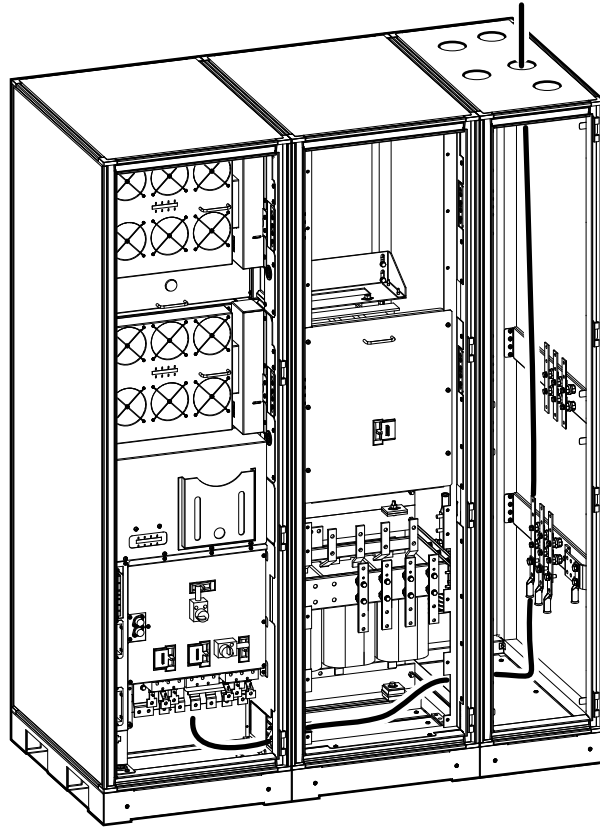
Front View of the Top Entry Cabinet



2. Route the output cables through the top gland plate and connect to the output busbars (L1, L2, L3, N) and to the ground busbar in the top entry cabinet.
3. **Only in systems with remote battery cabinet(s):** Route the battery cables from the remote battery cabinet(s) through the top gland plate and connect to the battery busbars (+, -) and the ground busbar in the top entry cabinet

4. Route the preinstalled input, output, and remote battery cables from the top entry cabinet through the transformer cabinet and into the UPS cabinet as shown.

Front View of UPS Cabinet, Transformer Cabinet, and Top Entry Cabinet



Connect the Power Cables in the UPS Cabinet and Transformer Cabinet for Dual Mains

NOTE: Bottom cable entry: Route the input cables, output cables, and remote battery cables through the bottom of the UPS cabinet.

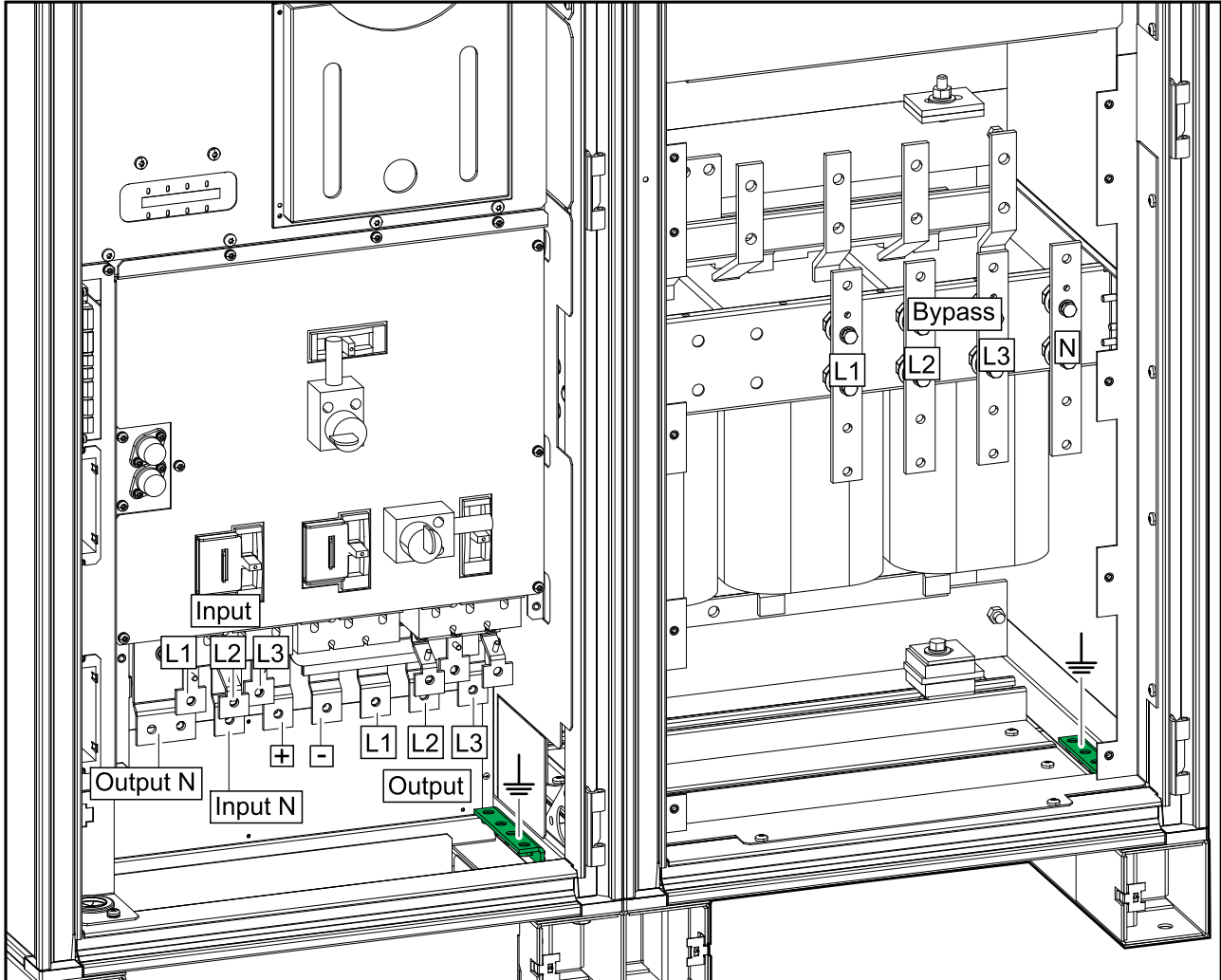
NOTE: Route the battery cables from the adjacent battery cabinet(s) through the left side panel into the UPS cabinet.

1. Route the bypass cables through the top or bottom of the transformer cabinet and connect the bypass cables to the bypass busbars (L1, L2, L3, N) and to the ground busbar.

2.

- **For 3-wire input system:** Connect the input cables to the input busbars (L1, L2, L3) and to the ground busbar in the UPS cabinet.
- **For 4-wire input system:** Connect the input cables to the input busbars (L1, L2, L3, N) and to the ground busbar in the UPS cabinet.

Front View of the UPS Cabinet and Transformer Cabinet

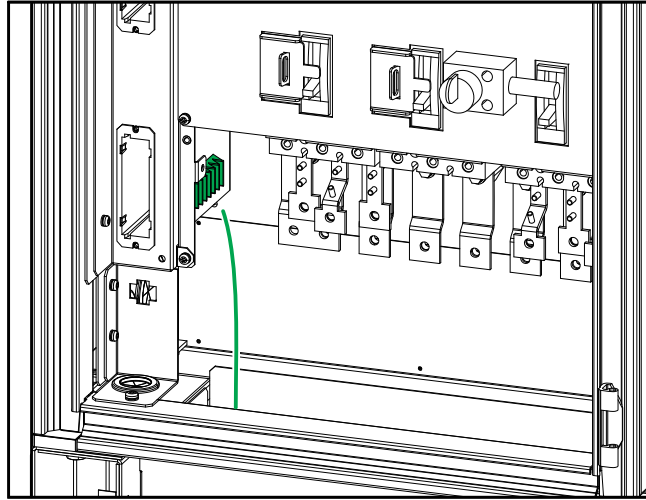


3. Connect the output cables to the output busbars (L1, L2, L3, N) and to the ground busbar in the UPS cabinet.
4. Connect the battery cables to the battery busbars (+, –) and to the ground busbar in the UPS cabinet.

Route the Signal Cables in Bottom Entry Systems

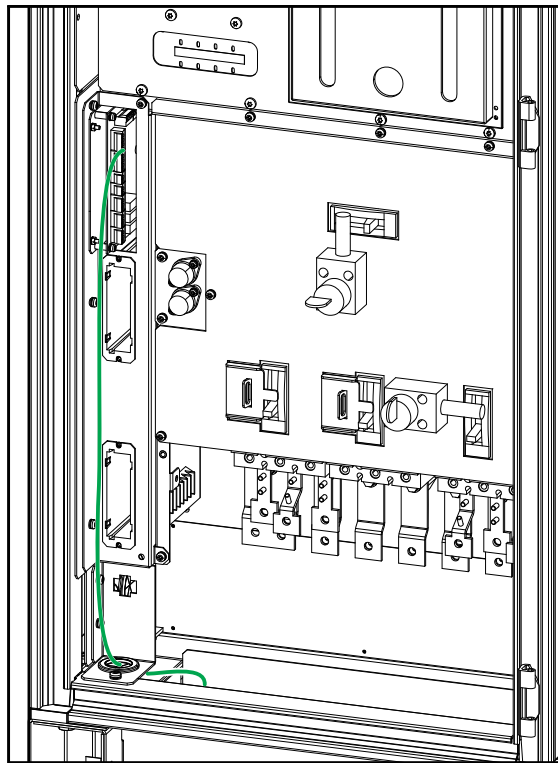
1. Route the signal cables through the bottom of the UPS cabinet to the control terminal block TB1.

Front View of the UPS Cabinet



2. **Only in systems with adjacent battery cabinet(s):** Route the adjacent battery signal cables through the left side panel of the UPS to the control terminal block TB1.
3. Route the signal cables through the bottom of the UPS cabinet through the dedicated opening to the external connection board 0P2553.

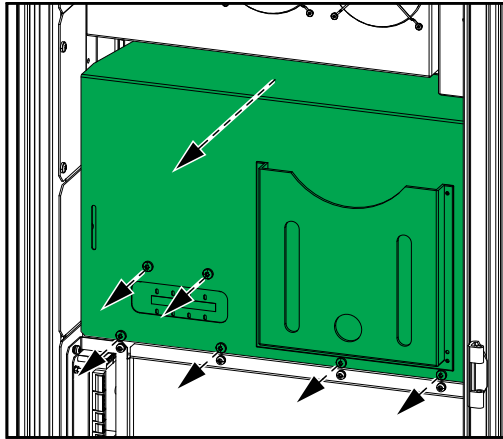
Front View of the UPS Cabinet



Route the Signal Cables in Top Entry Systems

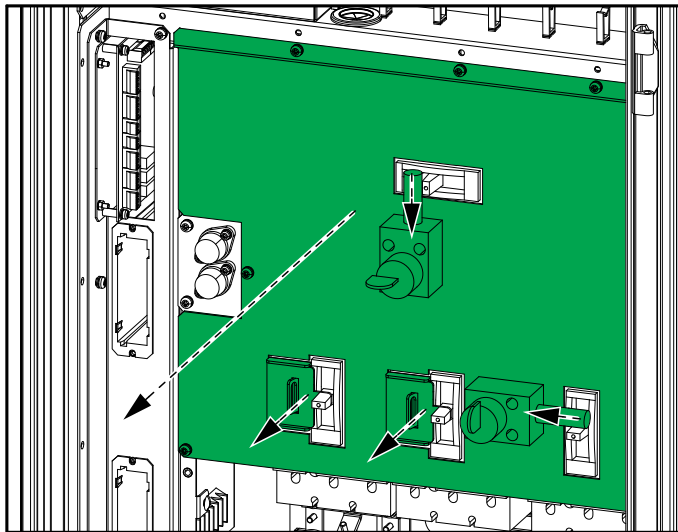
1. **Only in systems with adjacent battery cabinet(s):** Route the adjacent battery signal cables through the left side panel of the UPS to the control terminal block TB1.
2. Remove the cover on the UPS cabinet.

Front View of the UPS Cabinet



3. Unlock all the breakers.
4. Remove the breaker cover on the UPS cabinet.

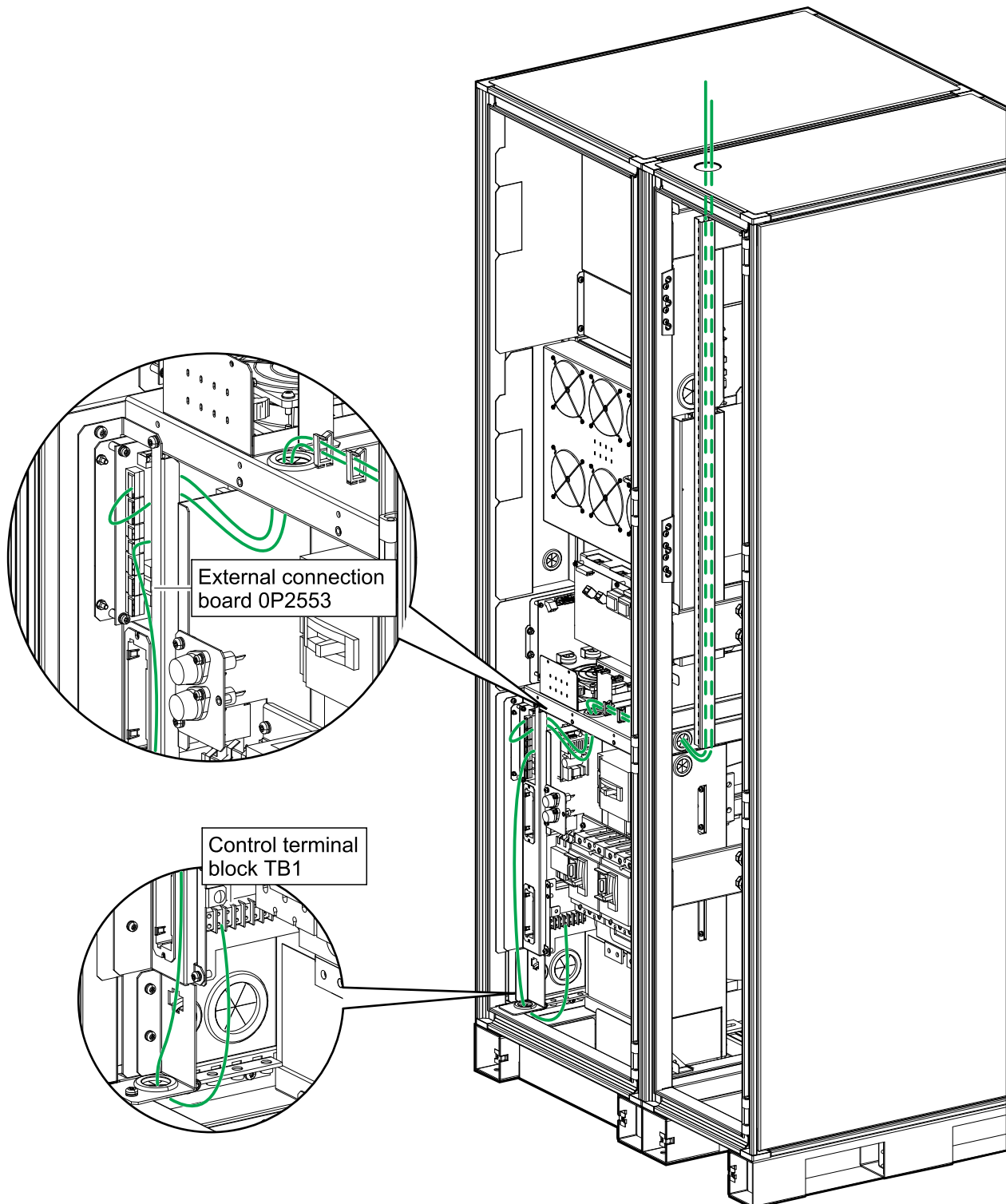
Front View of the UPS Cabinet



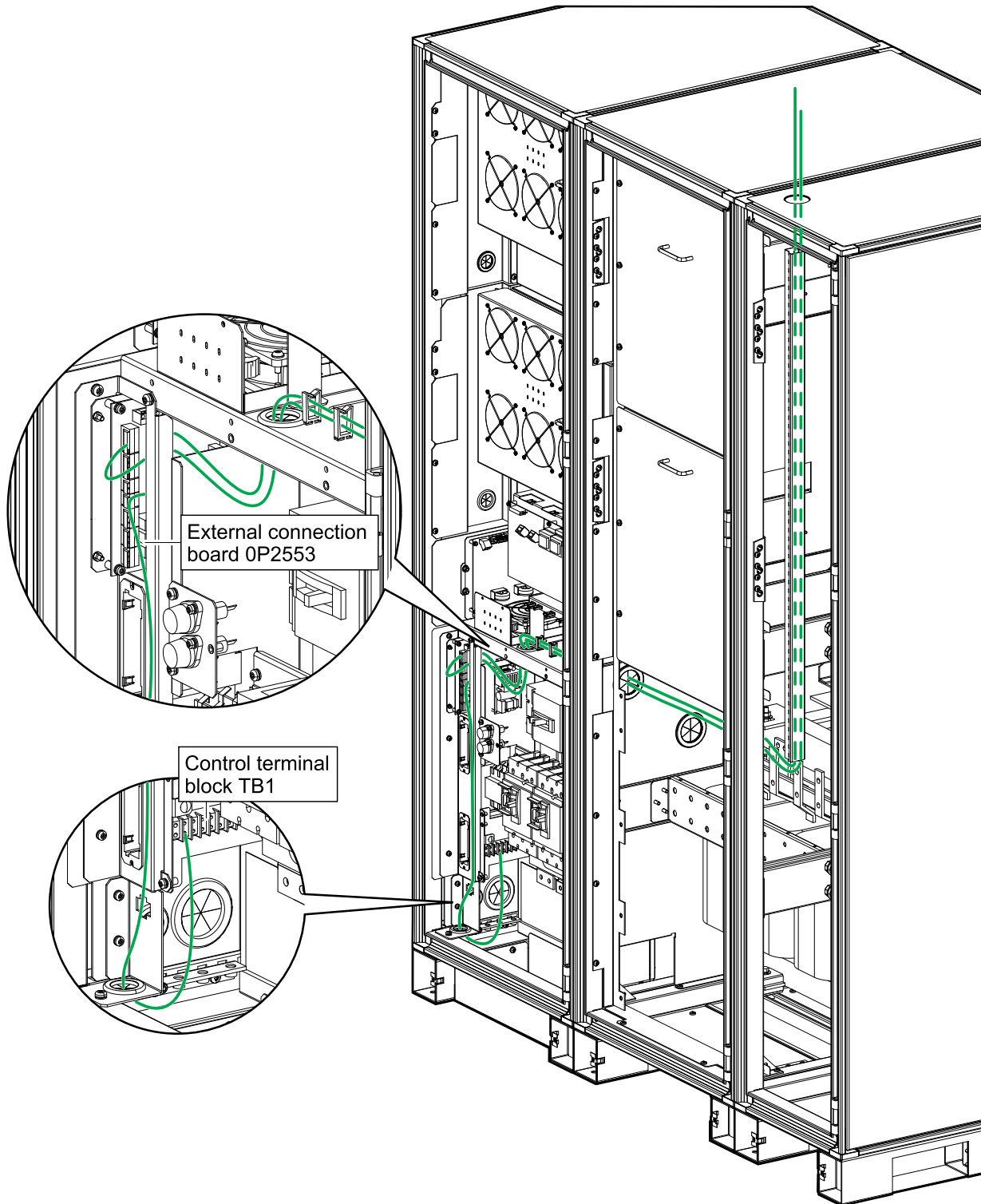
5. Route the signal cables through the top gland plate in the top entry cabinet, into the cable channel, through the transformer cabinet (if present), and into the UPS cabinet to the control terminal block TB1.

- Route the signal cables through the top gland plate in the top entry cabinet, into the cable channel, through the transformer cabinet (if present), and into the UPS cabinet to the external connection board 0P2553.

Front View of the UPS Cabinet and Top Entry Cabinet



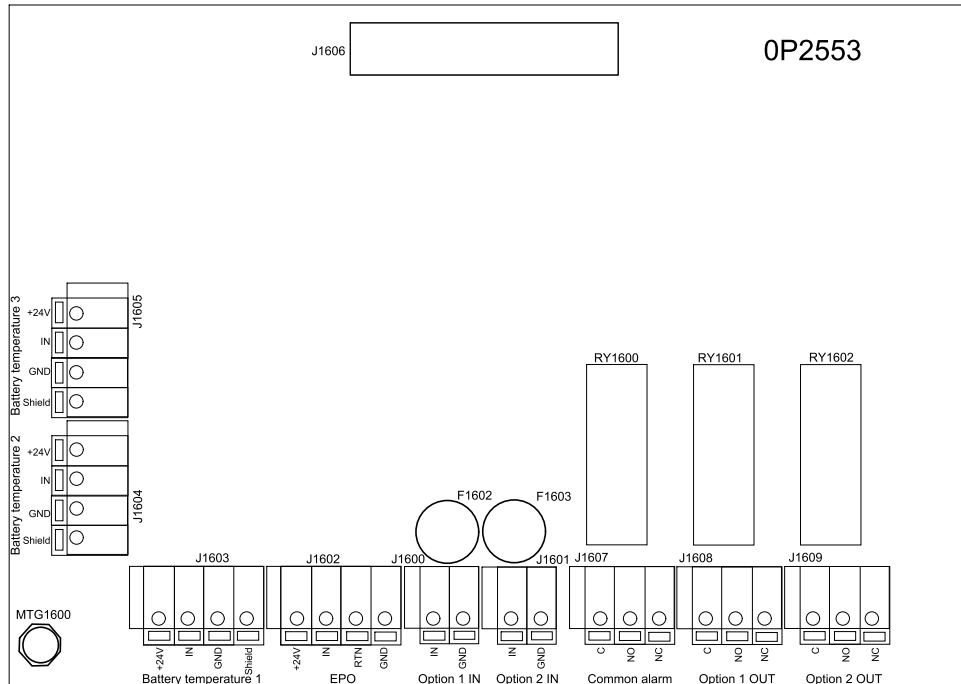
Front View of the UPS Cabinet, Transformer Cabinet, and Top Entry Cabinet



7. Reinstall the covers in the UPS cabinet.

Connect the Signal Cables

Overview of the External Connection Board 0P2553



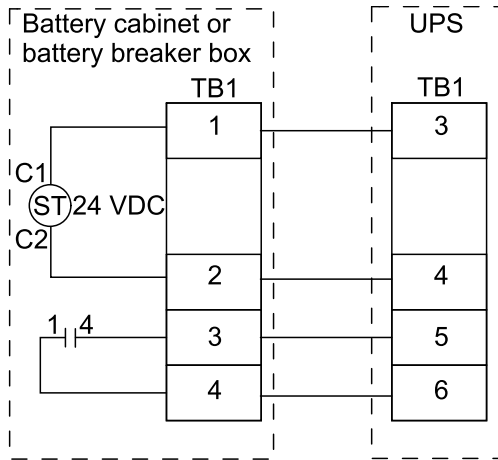
Connections are described in *Connect the Battery Signal Cables*, page 54, *Connect the Remote Emergency Power Off (REPO)*, page 57, and *Connect the Input Contacts and Output Relays (Option)*, page 58.

Connect the Battery Signal Cables

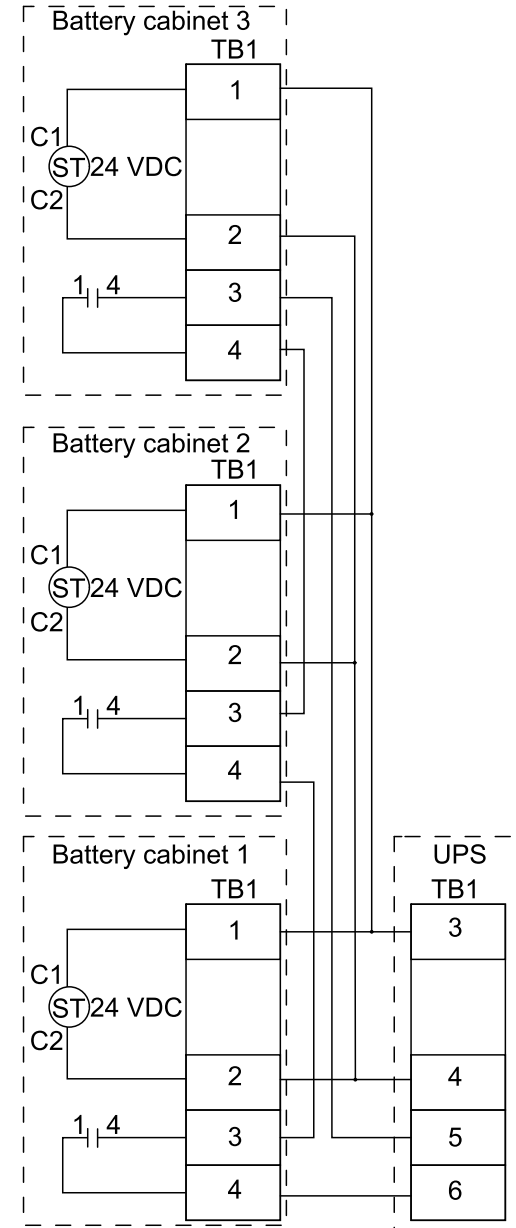
NOTE: Maximum distance between the UPS cabinet and the remote battery cabinet(s) is 30 meters.

1. Connect the signal cables from the control terminal block TB1 in the battery cabinet(s) or the battery breaker box to the control terminal block TB1 in the UPS cabinet as shown.

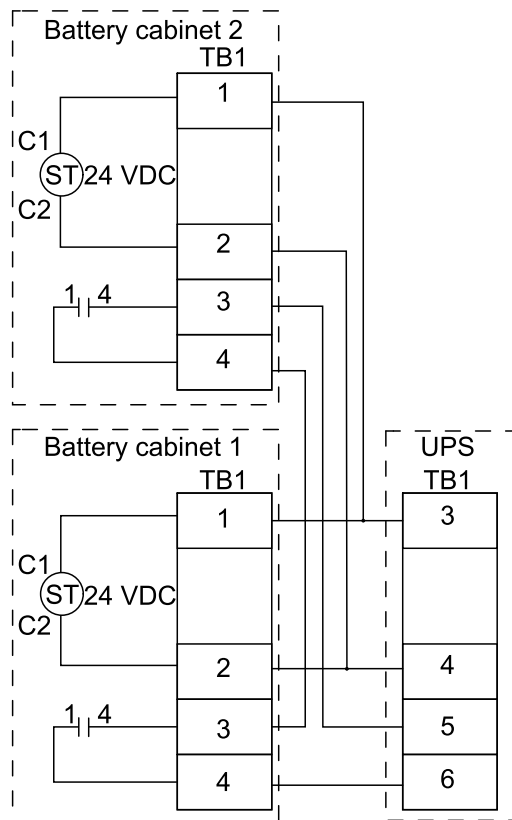
Signal Cable Connections with One Battery Cabinet



Signal Cable Connections with Three Battery Cabinets

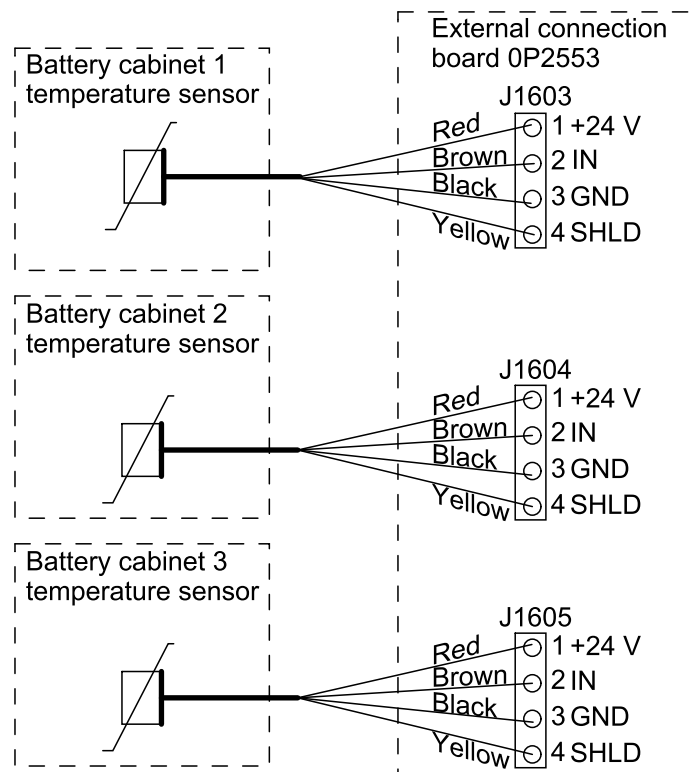


Signal Cable Connections with Two Battery Cabinets



2. **Only in systems with adjacent battery cabinet(s):** Connect the signal cables from the battery temperature sensor in the battery cabinet(s) to the external connection board 0P2553 in the UPS cabinet as shown.

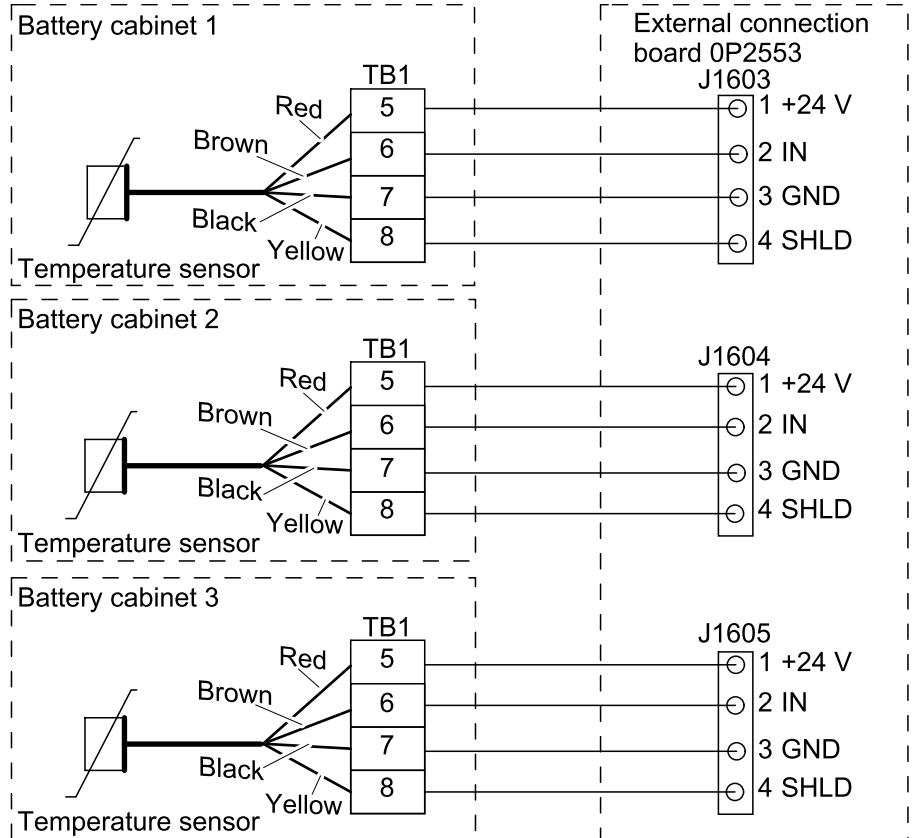
Cable Connections for Temperature Sensors in Adjacent Battery Cabinets



3. **Only in systems with remote battery cabinet(s):** Connect the signal cables from the battery temperature sensor to pins 5-8 on the control terminal block TB1 in the battery cabinet(s) as shown.

4. **Only in systems with remote battery cabinet(s):** Connect the signal cables from pins 5-8 on the control terminal block TB1 in the battery cabinet(s) to the external connection board 0P2553 in the UPS cabinet as shown. Note that you will need a cable (not provided) with three wires and a shield with a maximum length of 30 meters for this step. Recommended cable size is 22 AWG.

Cable Connections for Temperature Sensors in Remote Battery Cabinets



Connect the Remote Emergency Power Off (REPO)

The REPO circuit is considered Class 2 and SELV. Class 2 and SELV circuits must be isolated from the primary circuitry. Do not connect any circuit to the REPO terminal block unless it can be confirmed that the circuit is SELV or Class 2.

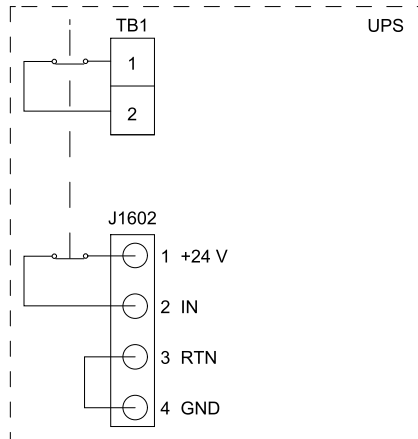
NOTE: This UPS uses two isolated REPO circuits. Both REPO circuits must be connected for full EPO of the system. Use a double pole single throw switch.

NOTE: Do not tie the connections from TB1 and the external connection board 0P2553 together.

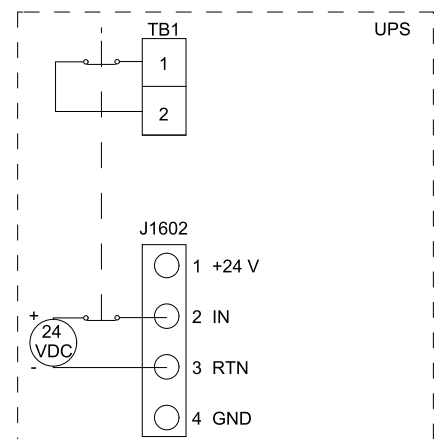
1. Remove the jumper between terminals 1 and 2 on J1602 on the external connection board 0P2553 in the UPS.
2. Remove the jumper between pins 1 and 2 on the control terminal block TB1 in the UPS.
3. Connect the building REPO as a REPO with internal supply or as a REPO with external supply as shown. The control terminal block TB1 must always be connected to the internal supply (dry contact), the external connection board 0P2553 can be connected to the internal supply or to an external 24 VDC supply.

4. Fasten the REPO cables.

REPO with Internal Supply



REPO with 24 VDC External Supply, Maximum 20 mADC



Connect the Input Contacts and Output Relays (Option)

1. Connect the signal cables to the input contacts and output relays on the external connection board 0P2553.

Input Contacts and Output Relays Configuration Settings

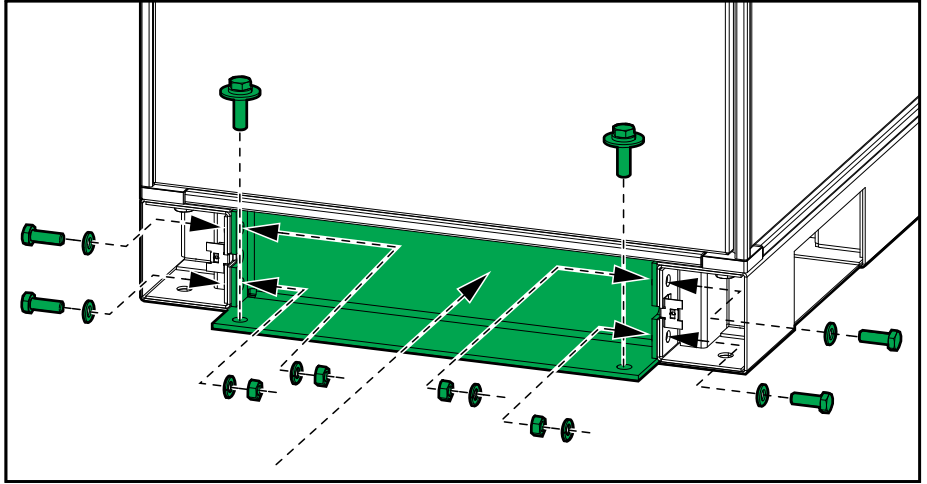
The default configuration settings are shown.

Name	Description	Location on external connection board 0P2553	Value
Option 1 IN	Input contact: Block boost/initial charge	J1600	Closed state: Disable boost charge
Option 2 IN	Input contact: Force to boost charge	J1601	Closed state: Start boost charge
Common alarm	Output relay: Common alarm	J1607	Normally open (NO)/ Normally closed (NC) Maximum 250 VAC, 8 A Maximum 24 VDC, 8 A
Option 1 OUT	Output relay: Battery operation	J1608	
Option 2 OUT	Output relay: Static bypass operation	J1609	

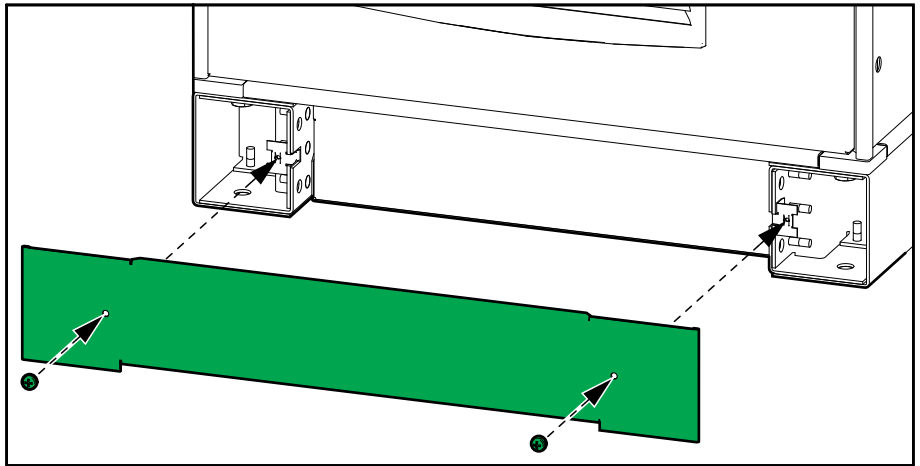
Final Installation Steps

1. Reinstall all covers and plates on the cabinet(s).
2. **Only for seismic anchoring:** Install the front seismic anchoring bracket on the cabinet(s).

Front View



3. Reattach the kick plates to the spring clips on the cabinet(s).



4. Fasten the kick plates with the M5 screws.

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As standards, specifications, and design change from time to time,
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