

Easy UPS 3M

For External Batteries

Installation

60–100 kVA 400 V

09/2019



Legal Information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a non-exclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.



Go to <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> for translations.

Rendez-vous sur <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> pour accéder aux traductions.

Vaya a <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> para obtener las traducciones.

Gehe zu <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> für Übersetzungen.

Vai a <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> per le traduzioni.

Vá para <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> para obter as traduções.

Перейдите по ссылке <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> для просмотра переводов.

前往 <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> 查看译文。

前往 <http://www.productinfo.schneider-electric.com/portals/ui/easyups3m/> 查看譯文。

Table of Contents

Important Safety Instructions — SAVE THESE	
INSTRUCTIONS	5
Electromagnetic Compatibility	6
Safety Precautions	6
Electrical Safety	8
Battery Safety	9
Specifications	11
Input Specifications	11
Bypass Specifications	11
Output Specifications	11
Battery Specifications	12
Recommended Upstream Protection	12
Recommended Cable Sizes	13
Recommended Bolts and Cable Lugs	14
Torque Specifications	14
Requirements for a Third Party Battery Solution	14
Third Party Battery Breaker Requirements	14
Guidance for Organizing Battery Cables	15
UPS Weights and Dimensions	15
UPS Shipping Weights and Dimensions	15
Clearance	16
Environmental	16
Heat Dissipation	17
Overview	18
Overview of Single UPS	18
Overview of 1+1 Redundant Parallel System with Common Battery Bank	19
Overview of Parallel System	19
Location of Breakers	21
Receiving	22
Remove the UPS from the Pallet	22
Prepare System for TNC Earthing	25
Connect the Power Cables	26
Communication Interfaces	28
Input Contacts and Output Relays	29
Connect the Signal Cables in Parallel Systems	31
Backfeed Protection	32

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.

Electromagnetic Compatibility

NOTICE

RISK OF ELECTROMAGNETIC DISTURBANCE

This is a product Category C3 according to IEC 62040-2. This is a product for commercial and industrial applications in the second environment - installation restrictions or additional measures may be needed to prevent disturbances. The second environment includes all commercial, light industry, and industrial locations other than residential, commercial, and light industrial premises directly connected without intermediate transformer to a public low-voltage mains supply. The installation and cabling must follow the electromagnetic compatibility rules, e.g.:

- the segregation of cables,
- the use of shielded or special cables when relevant,
- the use of grounded metallic cable tray and supports.

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 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**⚠ 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 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.
- 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. The disconnection device must be easily accessible and visible.
- 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.

⚠ 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.

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

	60 kVA			80 kVA			100 kVA		
Voltage (V)	380	400	415	380	400	415	380	400	415
Connections	L1, L2, L3, N, PE								
Input voltage range (V)	342–477 at full load ¹								
Frequency range (Hz)	40–70								
Nominal input current (A)	96	91	88	128	122	117	160	152	146
Maximum input current (A)	109	104	100	154	146	141	186	177	170
Input current limitation (A)	155			206			258		
Total harmonic distortion (THDI)	<3% for linear loads								
Input power factor	> 0.99								
Maximum short circuit rating	10 kA RMS								
Protection	Fuse								
Ramp-in	7 seconds								

Bypass Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	380	400	415	380	400	415	380	400	415
Connections	L1, L2, L3, N, PE								
Overload capacity	110% for 60 minutes 130% for 10 minutes 130–150% for 1 minute								
Minimum bypass voltage (V)	266	280	291	266	280	291	266	280	291
Maximum bypass voltage (V)	475	480	477	475	480	477	475	480	477
Frequency (Hz)	50 or 60								
Frequency range (%)	±1, ±2, ±4, ±5, ±10. Default is ±10 (user selectable).								
Nominal bypass current (A)	91	87	83	122	115	111	152	144	139
Maximum short circuit rating	10 kA RMS								

Output Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	380	400	415	380	400	415	380	400	415
Connections	L1, L2, L3, N, PE								
Overload capacity ²	110% for 60 minutes 125% for 10 minutes 150% for 1 minute								
Output voltage regulation	± 1%								

1. 150–342 V with a linear derating of the load to 30%.
2. At 30 °C.

	60 kVA			80 kVA			100 kVA		
Voltage (V)	380	400	415	380	400	415	380	400	415
Dynamic load response	20 milliseconds								
Output power factor	1.0								
Nominal output current (A)	91	87	83	122	115	111	152	144	139
Total harmonic distortion (THDU)	<3% at 100% linear load <5% at 100% non-linear load								
Output frequency (Hz)	50 or 60								
Slew rate (Hz/sec)	Programmable: 0.5 to 2.0. Default is 0.5								
Output performance classification (according to IEC/ EN62040-3)	VFI-SS-111								
Load power factor	0.5 leading to 0.5 lagging without derating								

Battery Specifications

	60 kVA	80 kVA	100 kVA
Charging power in % of output power	1–20%	1–30%	1–24%
Maximum charging power (W)	12000	24000	24000
Nominal battery voltage (32–50 blocks ³) (VDC)	± 192 to ± 300		
Nominal float voltage (32–50 blocks ³) (VDC)	± 215.5 to ± 337.5		
End of discharge voltage (32–50 blocks) (VDC)	± 153.6 to ± 240		
Battery current at full load and nominal battery voltage (36–50 blocks) (A)	147–105	196–140	245–175
Battery current at full load and minimum battery voltage (36–50 blocks) (A)	185–132	246–176	308–221
Temperature compensation (per cell) ⁴	Programmable from 0–7 mV. Default is 0 mV		
Ripple current	< 5% C10		

Recommended Upstream Protection

NOTE: For local directives which require 4–pole circuit breakers: If neutral conductor is expected to carry a high current, due to line-neutral non-linear load, the circuit breaker must be rated according to expected neutral current.

	60 kW		80 kW		100 kW	
	Input	Bypass	Input	Bypass	Input	Bypass
Breaker type	Compact NSX160F TM125D (LV430631)	Compact NSX100F TM100D (LV429630)	Compact NSX160F TM160D (LV430630)	Compact NSX160F TM160D (LV430630)	Compact NSX250F TM200D (LV431631)	Compact NSX160F TM160D (LV430630)
In setting	125	100	160	160	200	160
Ir setting	125	100	160	144	200	160
Im setting	800 (fixed)	800 (fixed)	1250 (fixed)	1250 (fixed)	1000	1250 (fixed)

3. 32–34 blocks are only possible when the load is <90%.

4. If the temperature is above 28 °C. If the temperature is below 28 °C, no compensation is needed.

Recommended Cable Sizes

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 70 mm².

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

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 60364–4–54.

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

60 kVA UPS

	Cable Size per Phase (mm ²)	Neutral ⁵ Cable Size (mm ²)	PE Cable Size (mm ²)
Input	35	2x25	16
Bypass	25		16
Output	25	2x25	16
Battery	50	50	25

80 kVA UPS

	Cable Size per Phase (mm ²)	Neutral ⁵ Cable Size (mm ²)	PE Cable Size (mm ²)
Input	50	2x50	25
Bypass	50		25
Output	50	2x50	25
Battery	2x50	2x50	50

100 kVA UPS

	Cable Size per Phase (mm ²)	Neutral ⁵ Cable Size (mm ²)	PE Cable Size (mm ²)
Input	70	2x70	35
Bypass	70		35
Output	70	2x70	35
Battery	2x70	2x70	70

5. Neutral conductor is sized to handle 1.73 times phase current in case of high harmonic content from non-linear loads. If non or less harmonic currents are expected, neutral conductor can be sized accordingly but not less than the phase conductor.

Recommended Bolts and Cable Lugs

Cable Size (mm ²)	Bolt Size	Cable Lug Type
16	M8	KST TLK16-8
25	M8	KST TLK25-8
35	M8	KST TLK35-8
50	M8	KST TLK50-8
70	M8	KST TL70-8

Torque Specifications

Bolt Size	Torque
M8	17.5 Nm

Requirements for a Third Party Battery Solution

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

Third Party Battery Breaker Requirements

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All selected battery breakers must be equipped with instantaneous trip functionality with an undervoltage release coil or a shunt trip release coil.

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

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

Design Requirements for Battery Breaker

Battery 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. Ex: 32 blocks of 6 cells of 2.27 = 435 VDC.
Battery 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	Three DC landings for DC-cables are required.
AUX switches for monitoring	One AUX switch must be installed in each battery breaker and connected to the UPS. The UPS can monitor one battery breaker.

Design Requirements for Battery Breaker (Continued)

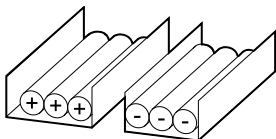
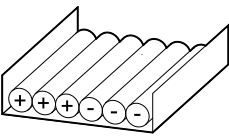
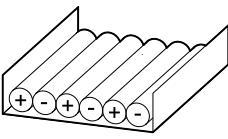
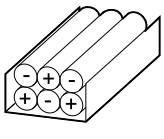
Short-circuit breaking capability	The short-circuit breaking capability must be higher than the short-circuit DC current of the (largest) battery configuration.
Minimum trip current	The minimum short-circuit current to trip the battery breaker must match the (smallest) battery configuration, to make the breaker trip in case of a short circuit, up to the end of its life time.

Guidance for Organizing Battery Cables

NOTE: For 3rd party batteries, use only high rate batteries for UPS applications.

NOTE: When the battery bank is placed remotely, the organizing of the cables is important to reduce voltage drop and inductance. The distance between the battery bank and the UPS must not exceed 200 m (656 ft). Contact Schneider Electric for installations with a longer distance.

NOTE: To minimize the risk of electromagnetic radiation, it is highly recommended to follow the below guidance and to use grounded metallic tray supports.

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

UPS Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA	109	915	360	850
80 kVA	140	915	360	850
100 kVA	145	915	360	850

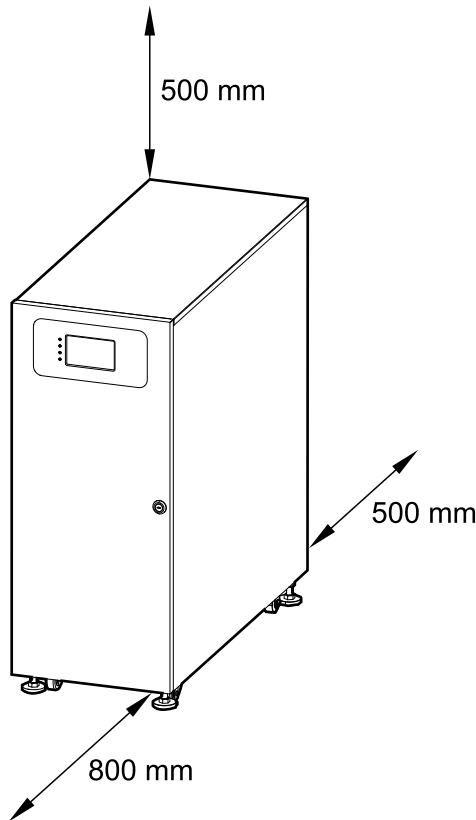
UPS Shipping Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA	133	1140	475	965
80 kVA	164	1140	475	965
100 kVA	169	1140	475	965

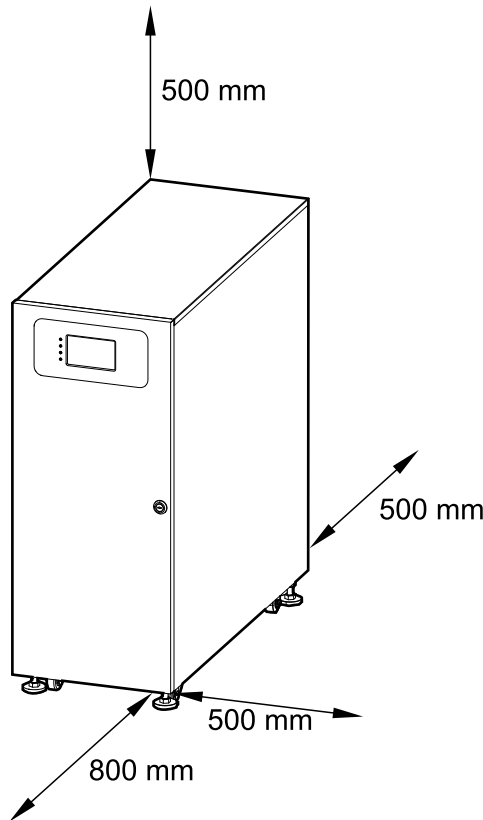
Clearance

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.

Option A



Option B



NOTE: If the UPS is installed without side access, the length of the cables connected to the UPS must allow for rolling out the UPS.

Environmental

	Operation	Storage
Temperature	0 °C to 40 °C	-15 °C to 40 °C for systems with batteries -25 °C to 55 °C for systems without batteries
Relative humidity	0–95% non-condensing	
Elevation derating according to IEC 62040–3	Power derating factor: 0–1500 m: 1.000 1500–2000 m: 0.975	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	<65 dBA at full load and an ambient temperature of 30 °C ⁶	
Protection class	IP20 (dust filter as standard)	
Color	RAL 9003	

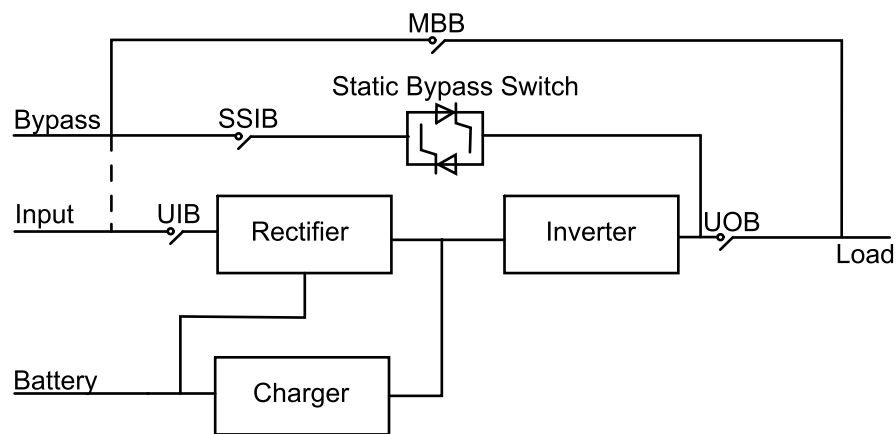
6. According to ISO 3746.

Heat Dissipation

	60 kVA		80 kVA		100 kVA	
	W	BTU/hr	W	BTU/hr	W	BTU/hr
Normal mode	3084	10523	4296	14659	5500	18767
Battery mode	2958	10093	4352	14850	5520	18835
ECO mode	540	1843	696	2375	1020	3480

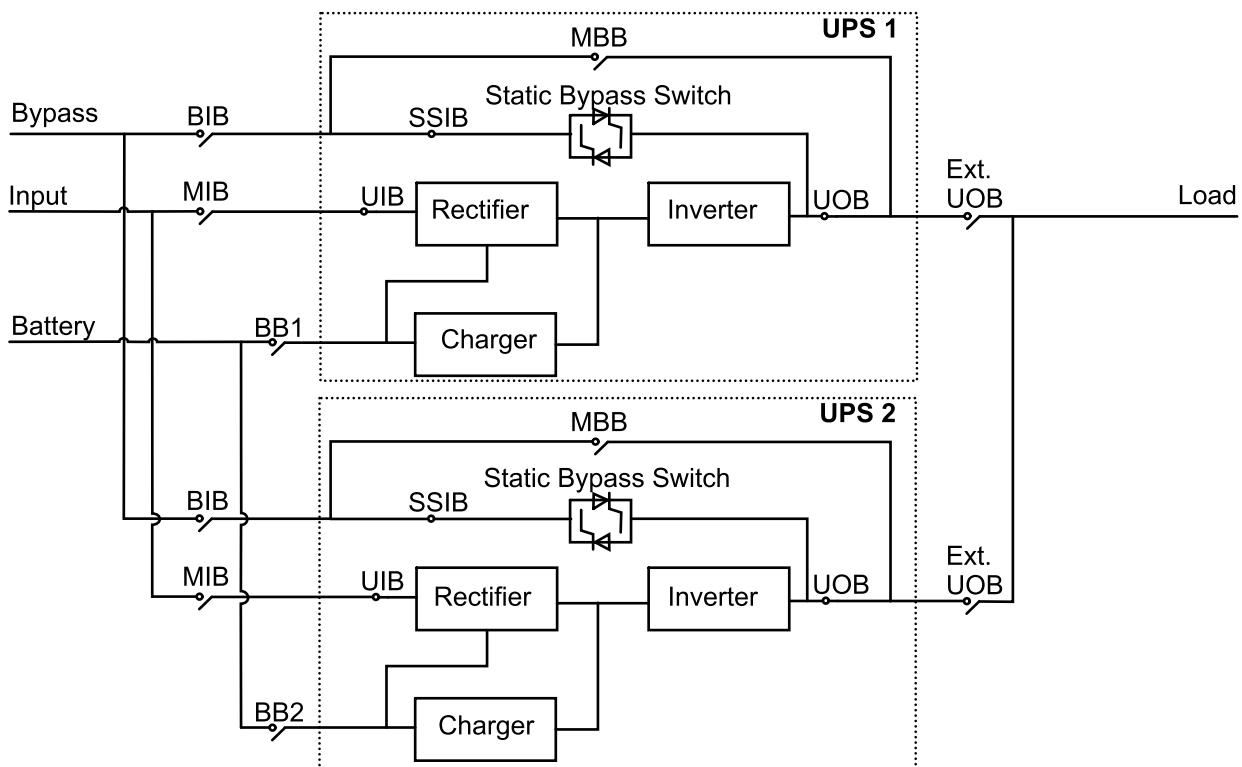
Overview

Overview of Single UPS



UIB	Unit input breaker
SSIB	Static switch input breaker
UOB	Unit output breaker
MBB	Maintenance bypass breaker

Overview of 1+1 Redundant Parallel System with Common Battery Bank

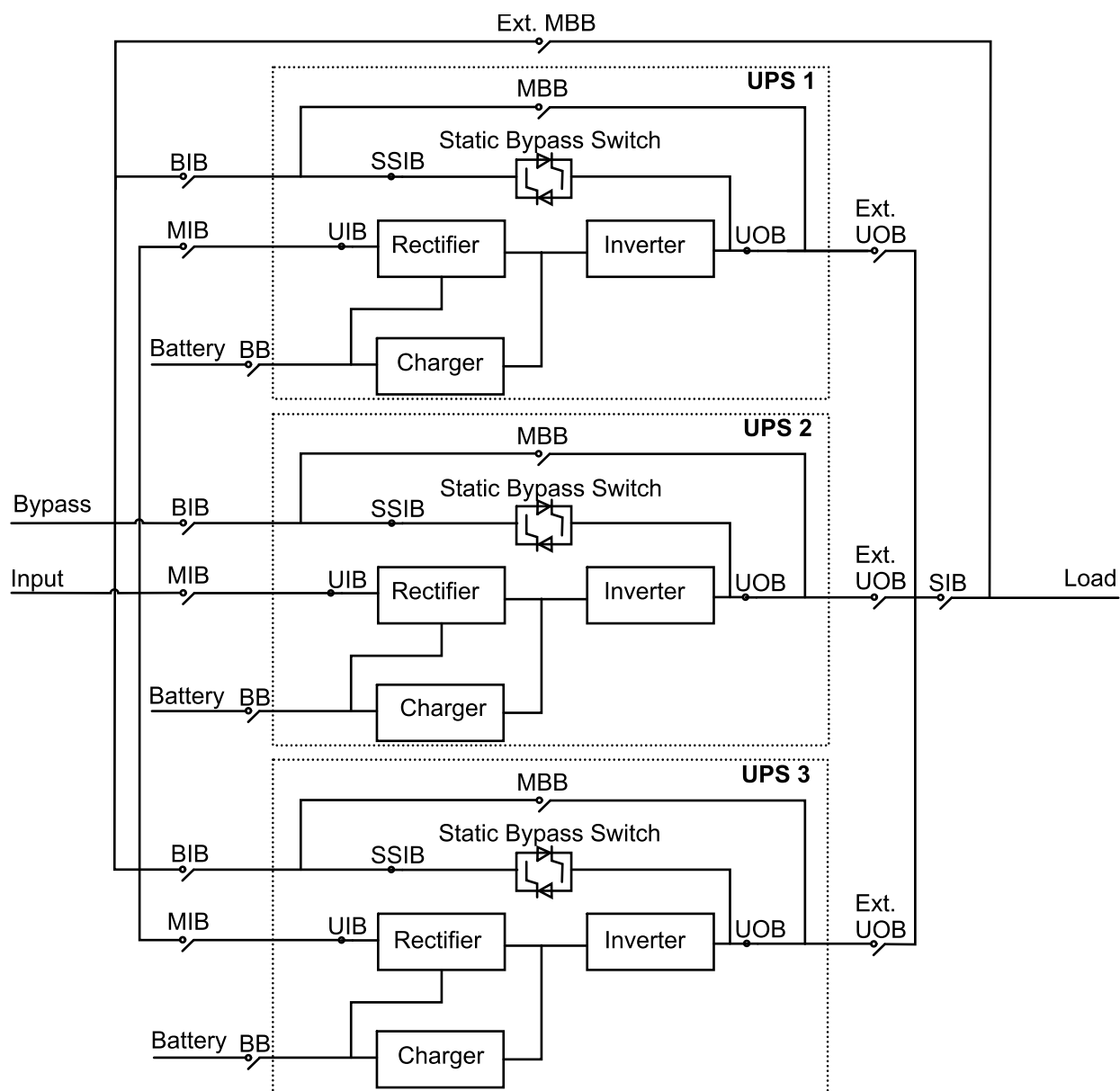


MIB	Mains input breaker
BIB	Bypass input breaker
UIB	Unit input breaker
SSIB	Static switch input breaker
UOB	Unit output breaker
Ext. UOB	External unit output breaker
MBB	Maintenance bypass breaker
Ext. MBB	External maintenance bypass breaker
BB1	Battery breaker 1
BB2	Battery breaker 2

Overview of Parallel System

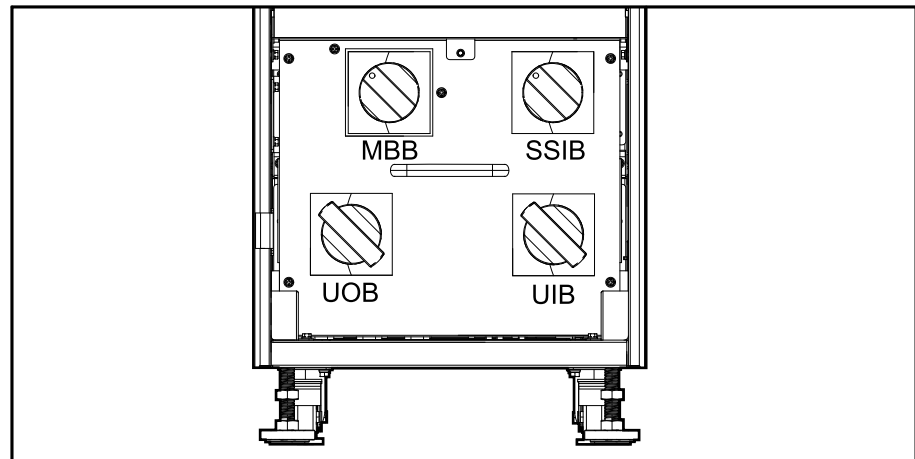
NOTE: In parallel systems with an external maintenance bypass breaker Ext. MBB, the maintenance bypass breakers MBB must be padlocked in the open position.

UPSs for External Batteries



MIB	Mains input breaker
BIB	Bypass input breaker
UIB	Unit input breaker
SSIB	Static switch input breaker
UOB	Unit output breaker
Ext. UOB	External unit output breaker
MBB	Maintenance bypass breaker
Ext. MBB	External maintenance bypass breaker
SIB	System isolation breaker
BB	Battery breaker

Location of Breakers



Receiving

External Inspection

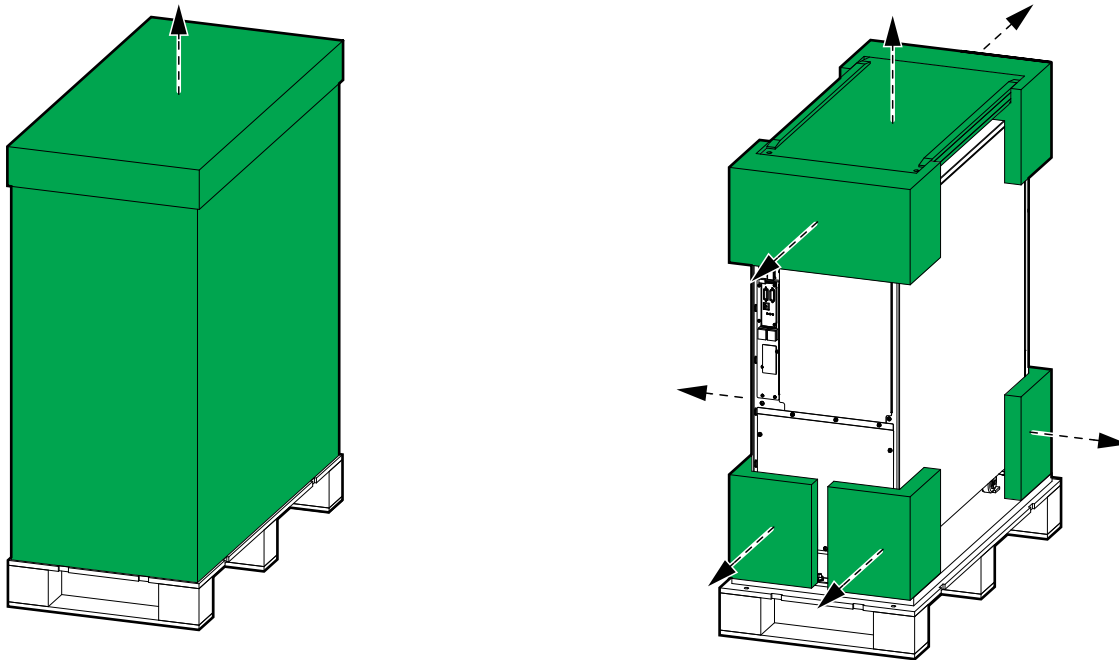
When the shipment arrives, inspect the shipping material for any signs of damage or mishandling. Do not attempt to install the system if a damage is apparent. If any damage is noted, contact Schneider Electric and file a damage claim with the shipping agency within 24 hours.

Compare the components of the shipment with the bill of lading. Report any missing items to the carrier and to Schneider Electric immediately.

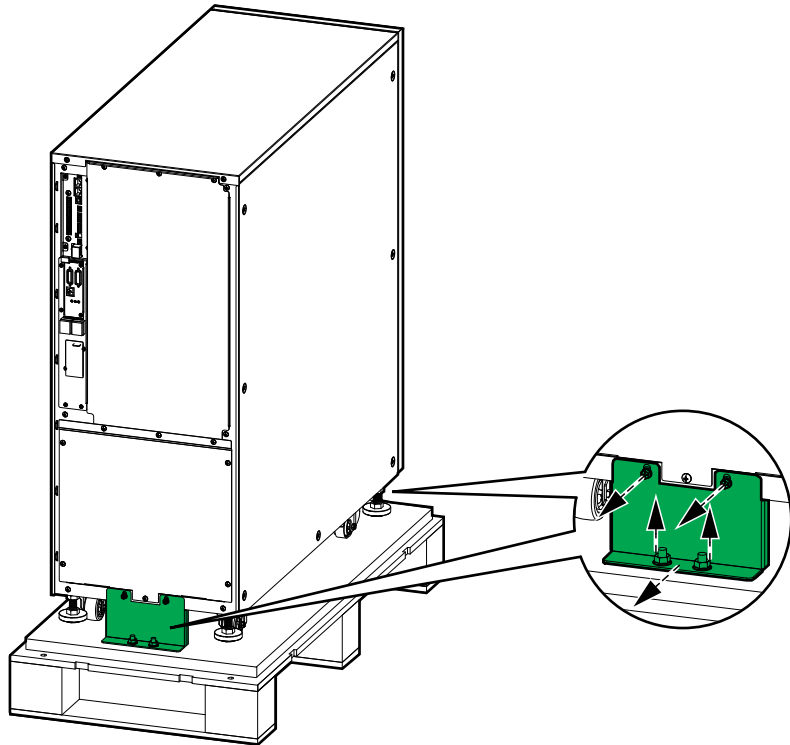
Verify that labelled units match the order confirmation.

Remove the UPS from the Pallet

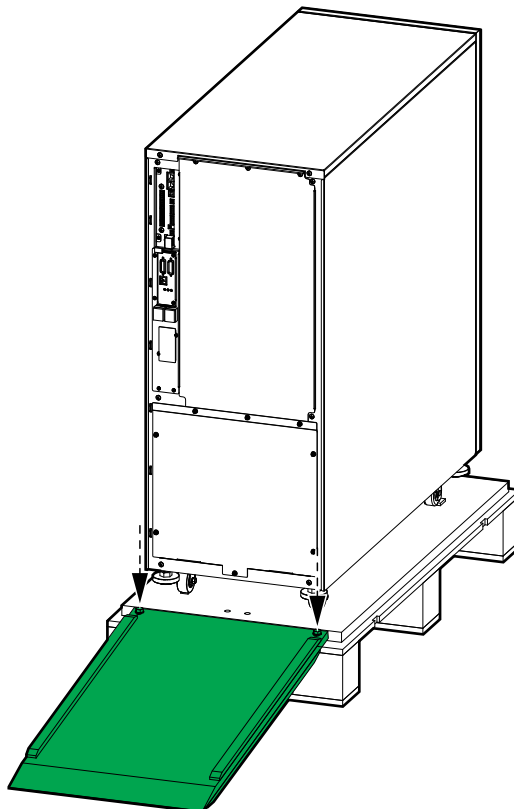
1. Move the UPS to the final installation area using a forklift.
2. Remove the shipping materials and the ramp from the UPS.



3. Loosen the bolts and remove the shipping brackets. Save the bolts for the ramp and dispose of the shipping brackets.

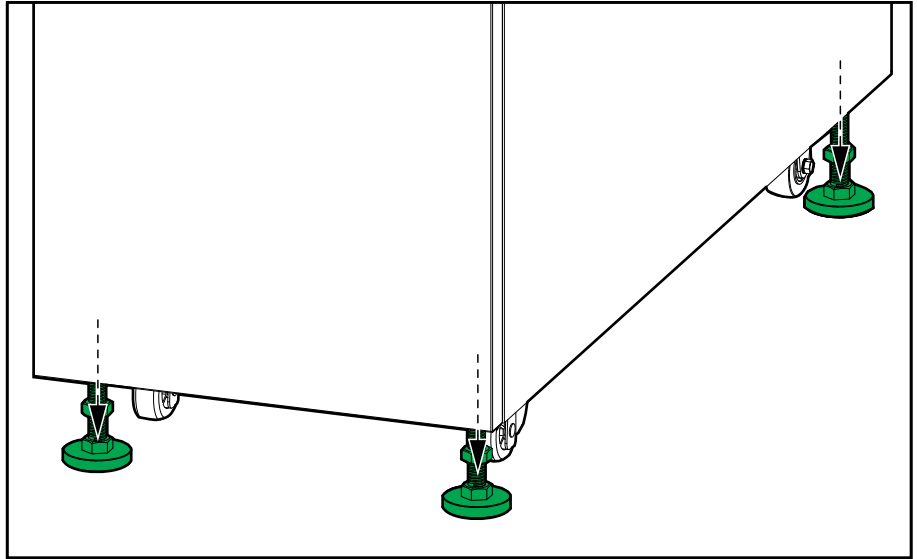


4. Place the ramp on the pallet and fasten with the bolts from the shipping bracket.



5. Roll the UPS down from the pallet.

6. Move the UPS to its final location and use a wrench to lower the levelling feet. Ensure that the cabinet is level.



7. Lock the wheels.

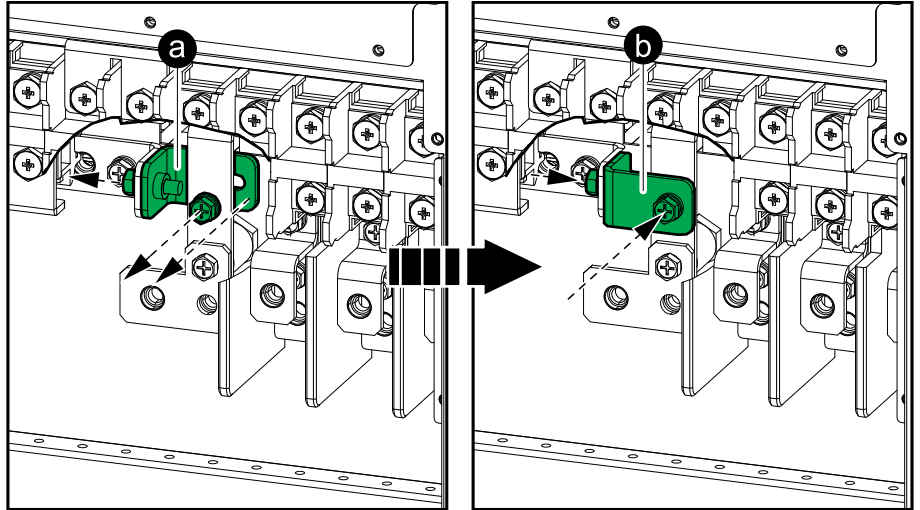


Prepare System for TNC Earthing

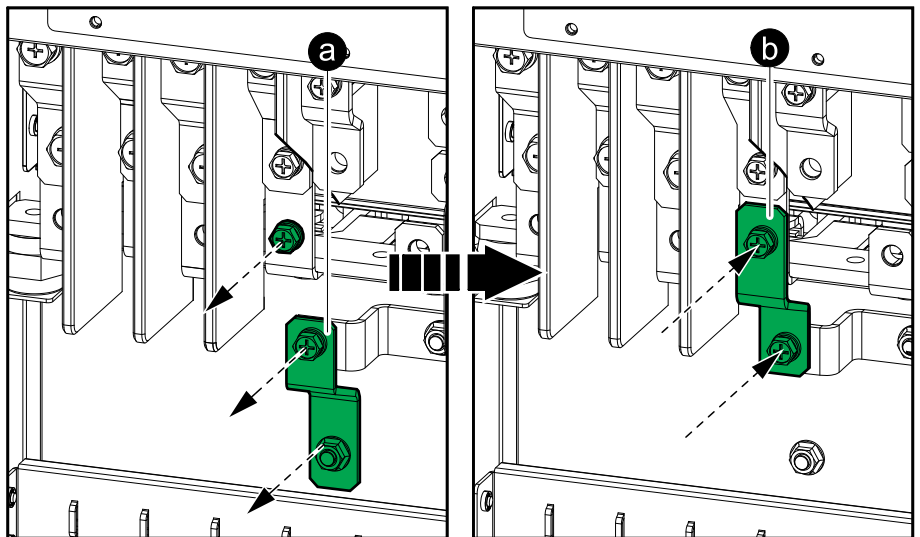
NOTE: This procedure is only applicable to TNC earthing systems.

1. Rotate the busbar from the original position (a) to the position (b) to create a connection between the PE busbar and the neutral busbar.

60–80 kVA UPS



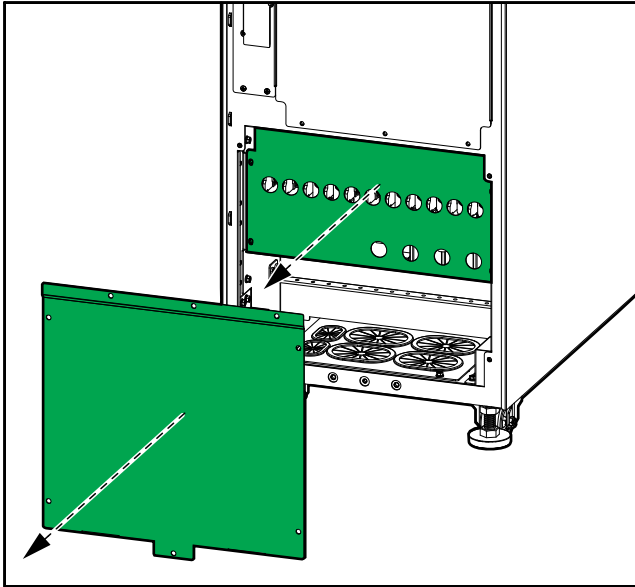
100 kVA UPS



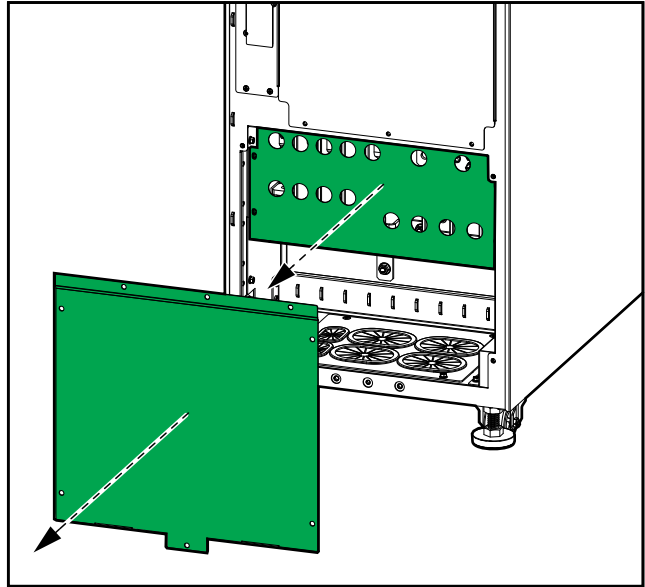
Connect the Power Cables

1. Ensure that all breakers are in the OFF (open) position.
2. Remove the two indicated plates from the bottom of the UPS.

Rear View of the 60–80 kVA UPS

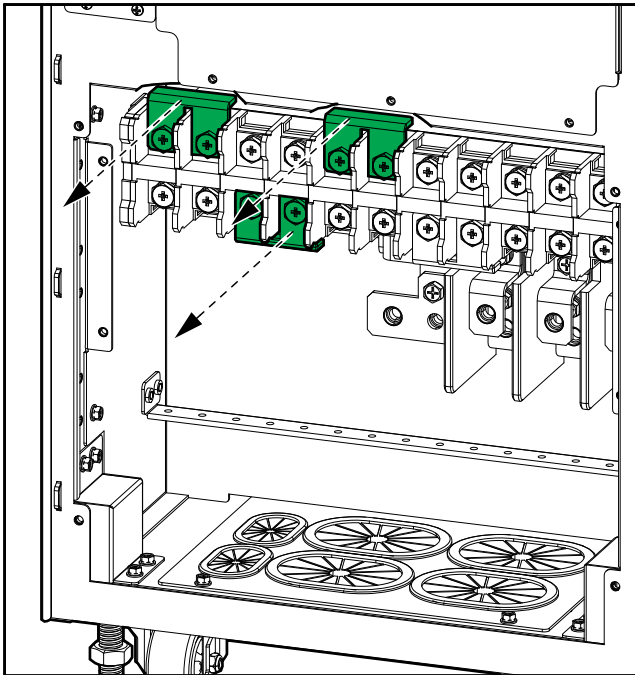


Rear View of the 100 kVA UPS

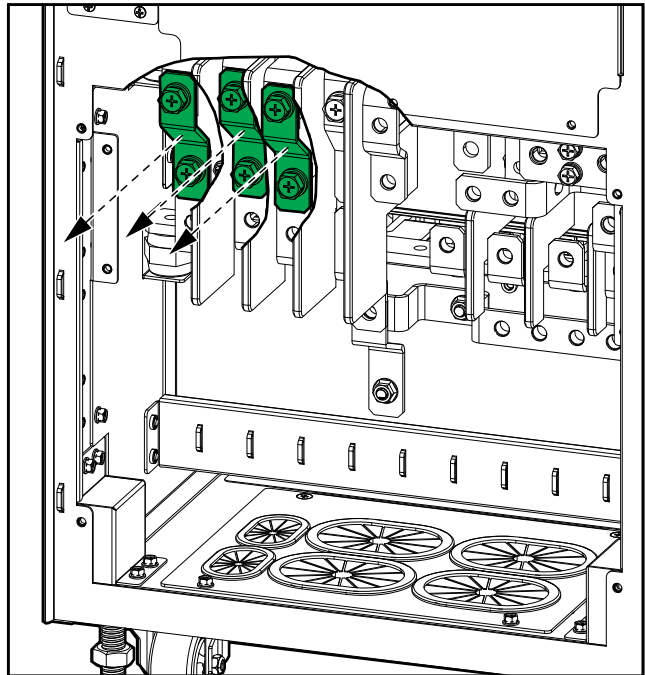


3. In dual mains systems, remove the three single mains brackets.

Rear View of the 60–80 kVA UPS



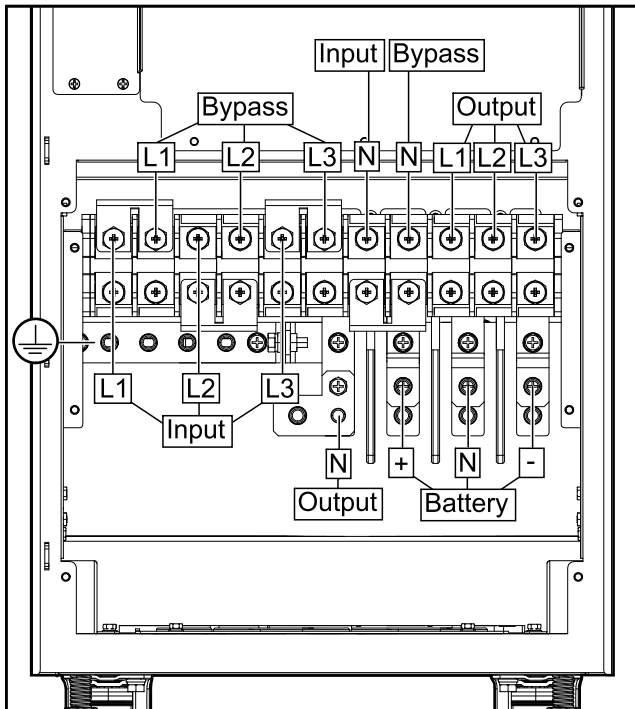
Rear View of the 100 kVA UPS



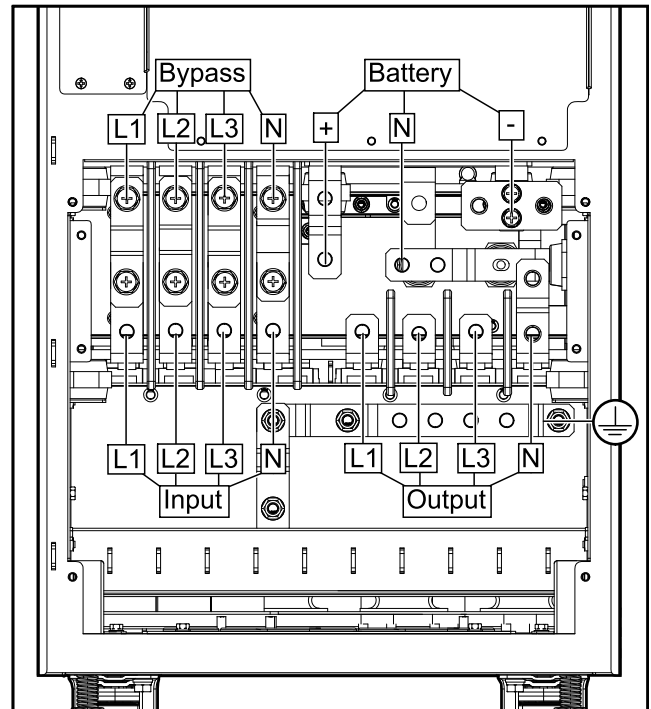
4. Route the power cables through the bottom of the UPS.

5. Connect the PE cable to the PE terminal.

Rear View of the 60–80 kVA UPS



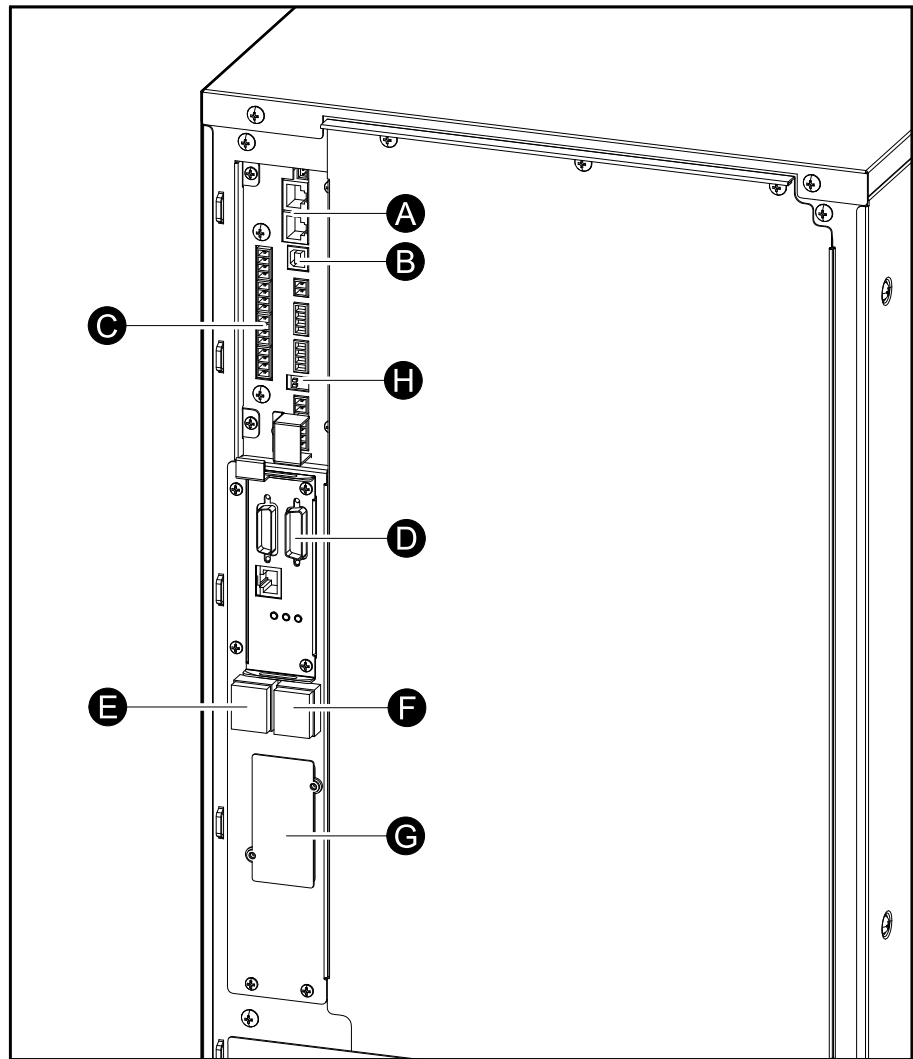
Rear View of the 100 kVA UPS



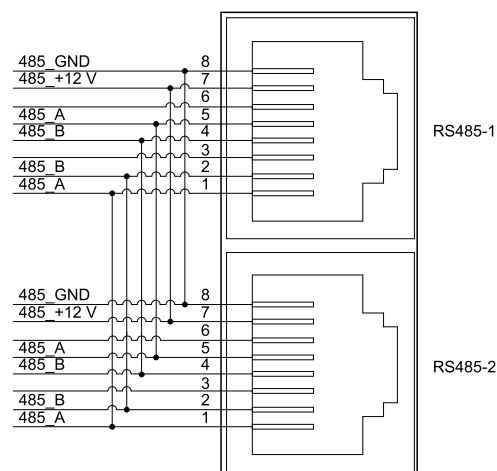
6. Connect the input, output, and bypass (if applicable) cables.
7. Connect the battery cables.
8. Fasten the cables to the cable relief in the bottom of the UPS.
9. Reinstall the two plates in the bottom of the UPS.

Communication Interfaces

Rear View of the UPS



A. RS485



- B. USB
- C. Dry contacts
- D. Parallel ports
- E. EPO
- F. Cold start button (optional)
- G. Slot for optional SNMP

H. CAN_R: CAN termination resistor

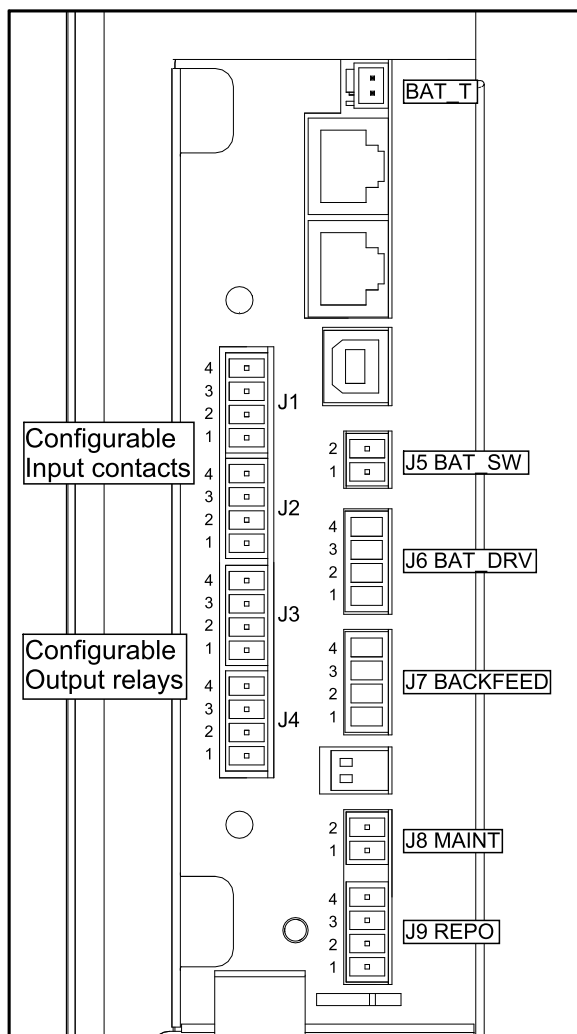
Input Contacts and Output Relays

NOTICE

RISK OF EQUIPMENT DAMAGE

The battery breaker contact drive J6–1 and J6–2 can provide a maximum of +24 VDC 400 mA to the undervoltage release coil or shunt trip release coil. If this value is exceeded it can damage the UPS.

Failure to follow these instructions can result in equipment damage.



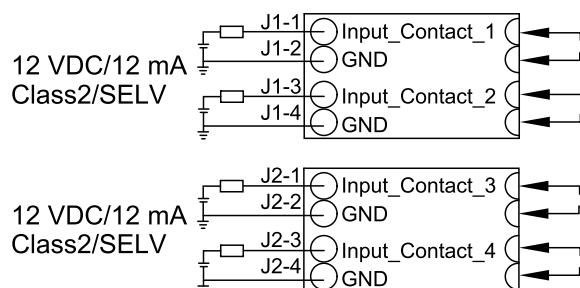
Terminal	Function	
BAT_T-1	Input contact for battery temperature sensor	
BAT_T-2	Signal ground	
J5-1	Auxiliary contact for battery breaker	12 VDC/12 mA Class2/SELV
J5-2	Signal ground	

Terminal	Function	
J6-1	Normally closed output contact for battery breaker trip	
J6-2	Normally open output contact for battery breaker trip	
J6-4	Signal ground	
J7-1	Backfeed 1 output relay pin 1 (normally closed (NC) as default)	
J7-2	Backfeed 1 output relay pin 2 (normally closed (NC) as default)	
J7-3	Backfeed 2 output relay pin 1 (normally closed (NC) as default)	
J7-4	Backfeed 2 output relay pin 2 (normally closed (NC) as default)	
J8-1	Auxiliary contact for external maintenance bypass breaker	
J8-2	Signal ground	
J9-1	Normally open EPO contact	NO configuration NC configuration
J9-2	Signal ground	
J9-3	Normally closed EPO contact	
J9-4	Signal ground	

Configurable Input Contacts

The four configurable input contacts can be configured from the display with the following functions:

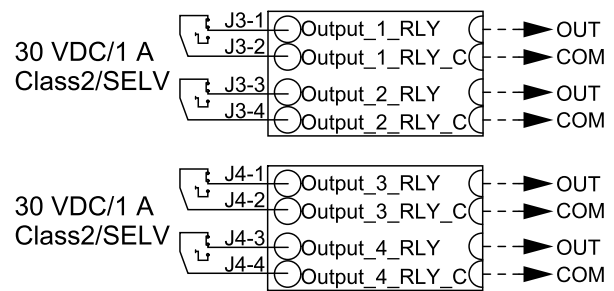
- Disable
- INV ON
- INV OFF
- Battery alarm
- Genset enable
- Custom alarm 3
- Custom alarm 4
- Disable ECO



Configurable Output Relays

The four configurable output contacts can be configured from the display with the following functions:

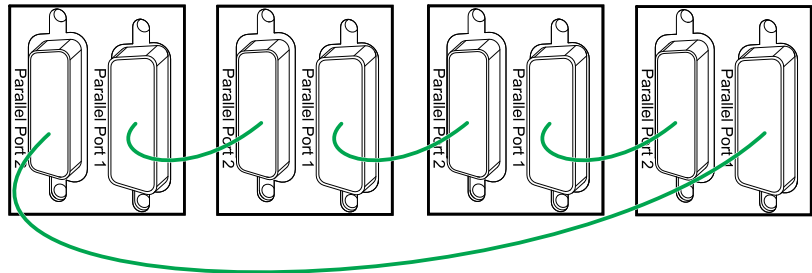
- Disable
- Common alarm
- Normal operation
- Battery operation
- Static bypass operation
- Output overload
- Fan inoperable
- Battery alarm
- Battery disconnected
- Battery voltage low
- Input out of tolerance
- Bypass out of tolerance
- EPO activated
- Maintenance mode
- Parallel lost



Connect the Signal Cables in Parallel Systems

1. Connect the optional parallel cables between all the UPSs of the parallel system.

NOTE: See *Communication Interfaces*, page 28 for location of parallel ports.



2. Verify the setting of the CAN_R (for location of CAN_R see *Communication Interfaces*, page 28).
 - For parallel systems with ≤ 4 parallel UPSs, CAN_R of all UPSs must be in ON position.
 - For parallel systems with ≥ 5 parallel UPSs, CAN_R of all UPSs must be in OFF position.

Backfeed Protection

⚠ 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) 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.

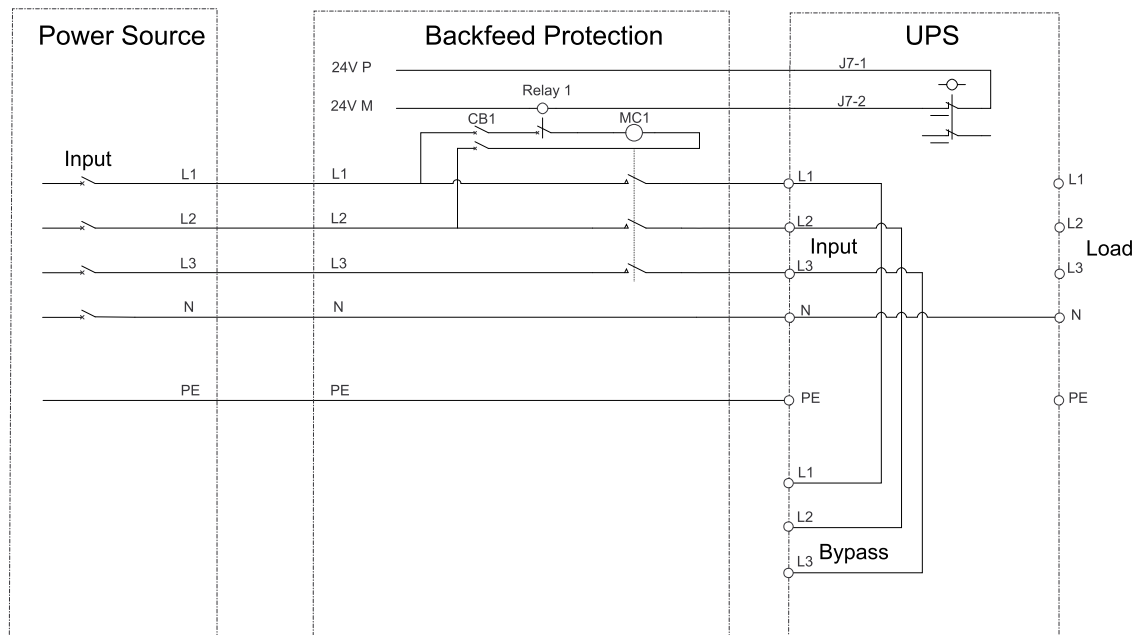
Failure to follow these instructions will result in death or serious injury.

An additional external isolation device must be installed in the UPS system. A contactor can be used for this purpose. In the shown examples, the isolation device is a contactor (marked with a **MC1** for single mains systems and marked with a **MC1** and **MC2** for dual mains systems).

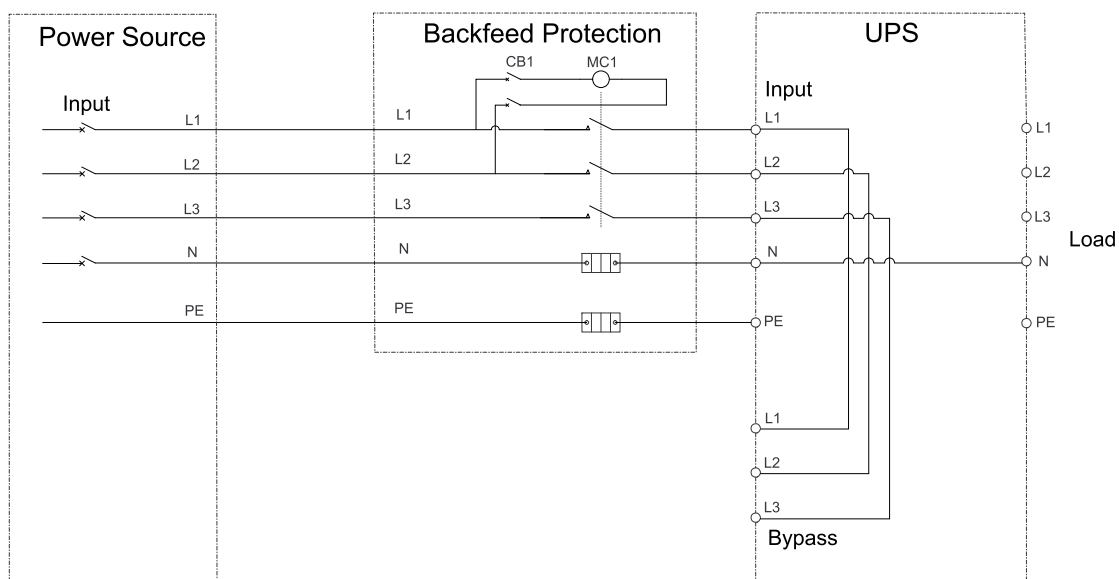
The isolation device must be able to withstand the electrical characteristics as described in *Specifications, page 11*.

NOTE: The 24 V source should be generated from the switchgear input source in single mains configurations and from both the switchgear input and bypass source in dual mains configurations.

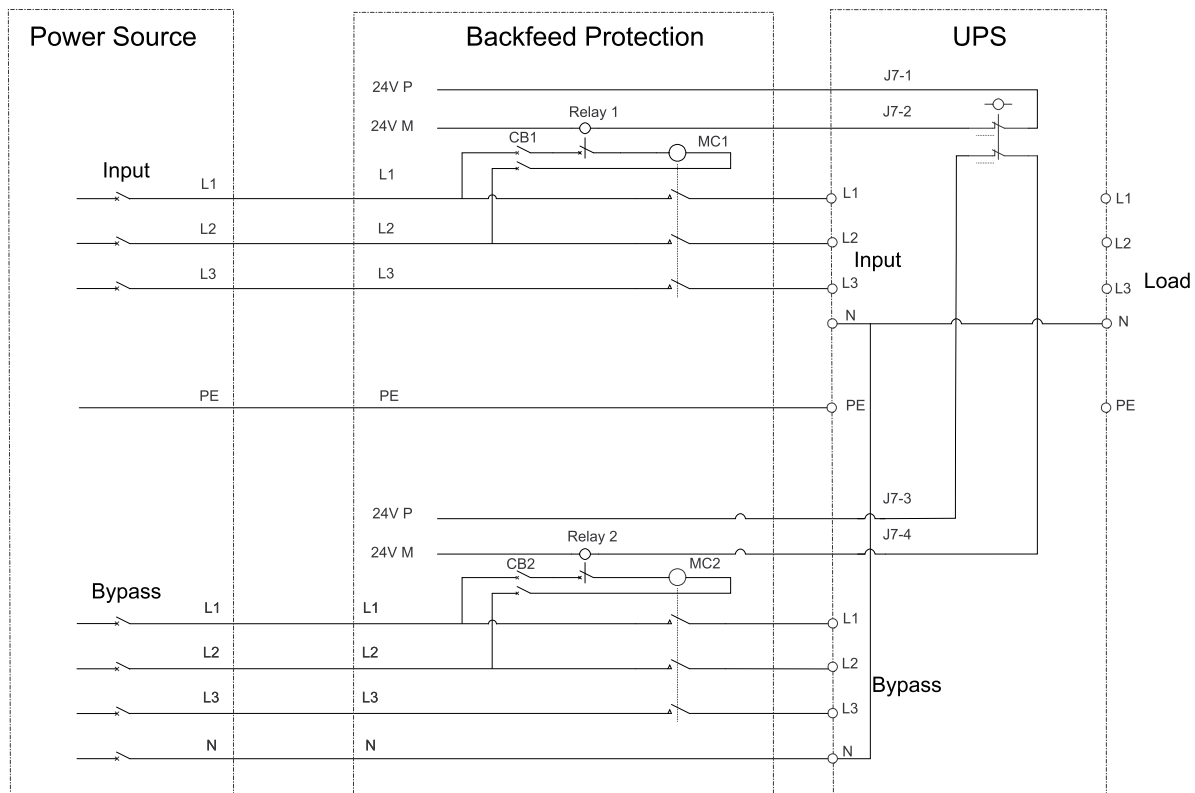
Single Mains UPS and External Isolation Device



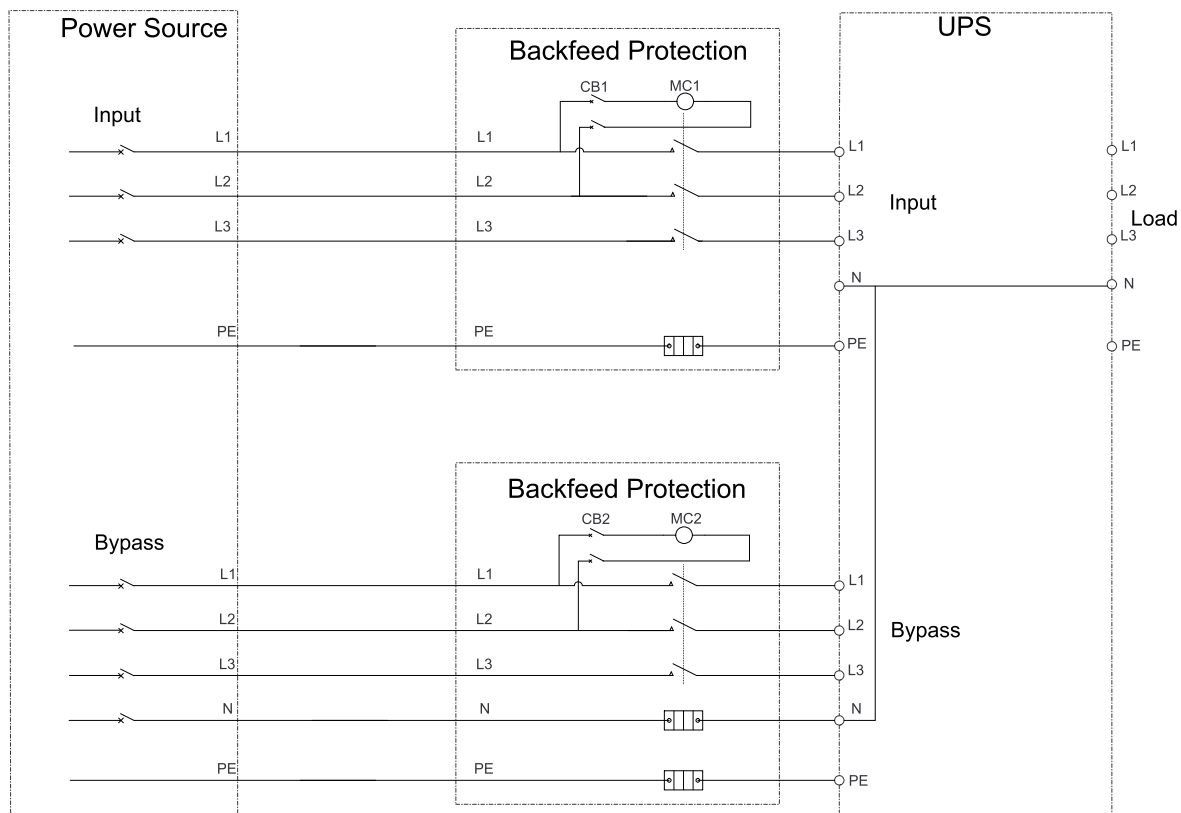
Single Mains UPS with Backfeed Box



Dual Mains UPS and External Isolation Device



Dual Mains UPS with Backfeed Box



Schneider Electric
35 rue Joseph Monier
92500 Rueil Malmaison
France

+ 33 (0) 1 41 29 70 00



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

© 2019 – 2019 Schneider Electric. All rights reserved.

990-5992C-001