



ИБП APC MGE Galaxy 5000 - руководство по установке. Юниджет

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MGE Galaxy 5000

40–130 kVA 480 V

Installation



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IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

Symbols Used



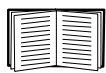
WARNING: Indicates an electrical hazard, which, if not avoided, could result in injury or death.



Caution: Indicates a hazard, which, if not avoided, could result in injury or death.



Note: Indicates important information.



See: Indicates that more information is available on the subject.

Specifications

AC Input

AC input	40 kVA	50 kVA	60 kVA	80 kVA	100 kVA	130 kVA
Nominal input voltage (V)	480	480	480	480	480	480
Input frequency (Hz)	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Nominal input current (A) ¹	48	59	71	94	117	151
Max input current (A) ²	59	70	88	111	150	182
Input current limit (A) ³	57	70	85	111	148	182
Input phase rotation	A, B, C clockwise					
Input power factor	> 0.98					

¹ Input current based on rated load and batteries fully charged.

² Input current based on fully battery recharge, nominal voltage and rated load.

³ Current limitation through electronic current limiting is based on full battery recharge and -10% input voltage.

AC Output

	40 kVA	50 kVA	60 kVA	80 kVA	100 kVA	130 kVA
Nominal input voltage (V)	480	480	480	480	480	480
Nominal output current (A)	48	59	71	94	117	151

Batteries

Battery input	40 kVA	50 kVA	60 kVA	80 kVA	100 kVA	130 kVA
Nominal voltage (VDC)	432					
End voltage (VDC)	356					
Max. floating voltage (VDC)	490					
I _{Nom} discharge ¹ (A)	90	113	135	180	225	293
I _{Max} discharge ² (A)	109	137	164	219	273	355
¹ Nominal battery discharge current based on rated load and nominal battery voltage. ² Maximum battery discharge current based on rated load at the end of the discharge.						

AC Bypass

	40 kVA	50 kVA	60 kVA	80 kVA	100 kVA	130 kVA
Input frequency (Hz)	60	60	60	60	60	60
Nominal input current (A)	48	59	71	94	117	151

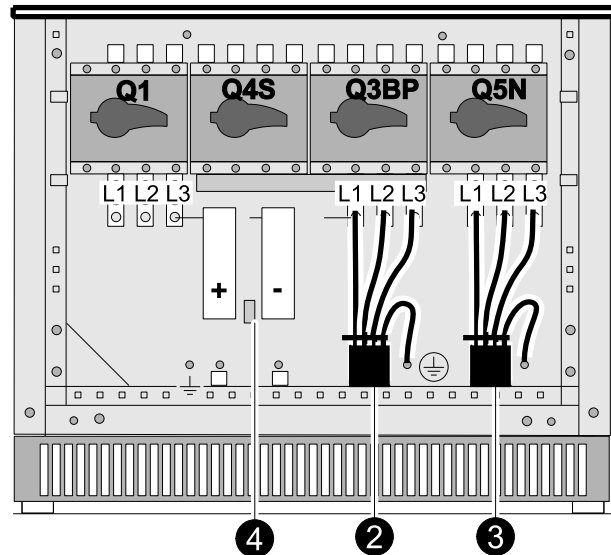
Recommended Fuses

	40 kVA	50 kVA	60 kVA	80 kVA	100 kVA	130 kVA
Input and output fuse rating (A)	160	160	160	160	315	315

Connect Input and Ground Cables in Single Systems

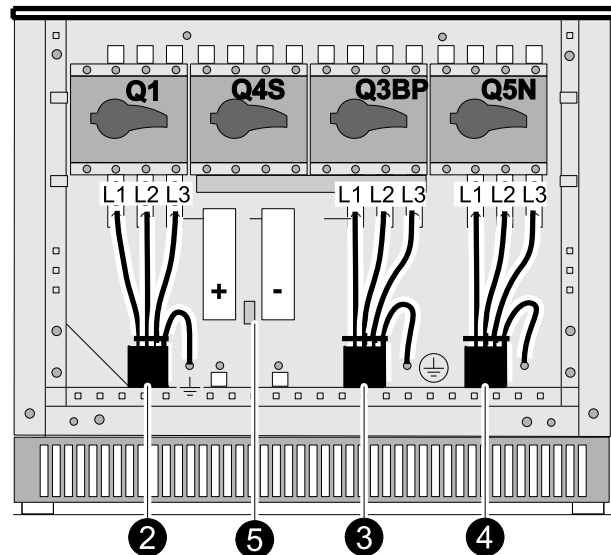
Single Utility/Mains Systems

1. Remove the protection cover in the bottom of the enclosure.
2. Connect the AC input cables to the AC input terminals and to the UPS grounding plate.
3. Connect the AC output cables to the AC output terminals and to the UPS grounding plate.
4. Connect the battery cables to the battery terminals.
5. Secure the cables to the cabinet.
6. Reinstall the cover protection for power terminals.



Dual Utility/Mains Systems

1. Remove the protection cover in the bottom of the enclosure.
2. Connect the AC input cables to the AC input terminals and to the UPS grounding plate.
3. Connect the AC bypass cables to the AC bypass terminals and to the UPS grounding plate.
4. Connect the AC output cables to the AC output terminals and to the UPS grounding plate.
5. Connect the battery cables to the battery terminals.
6. Secure the cables to the cabinet.
7. Reinstall the cover protection for power terminals.

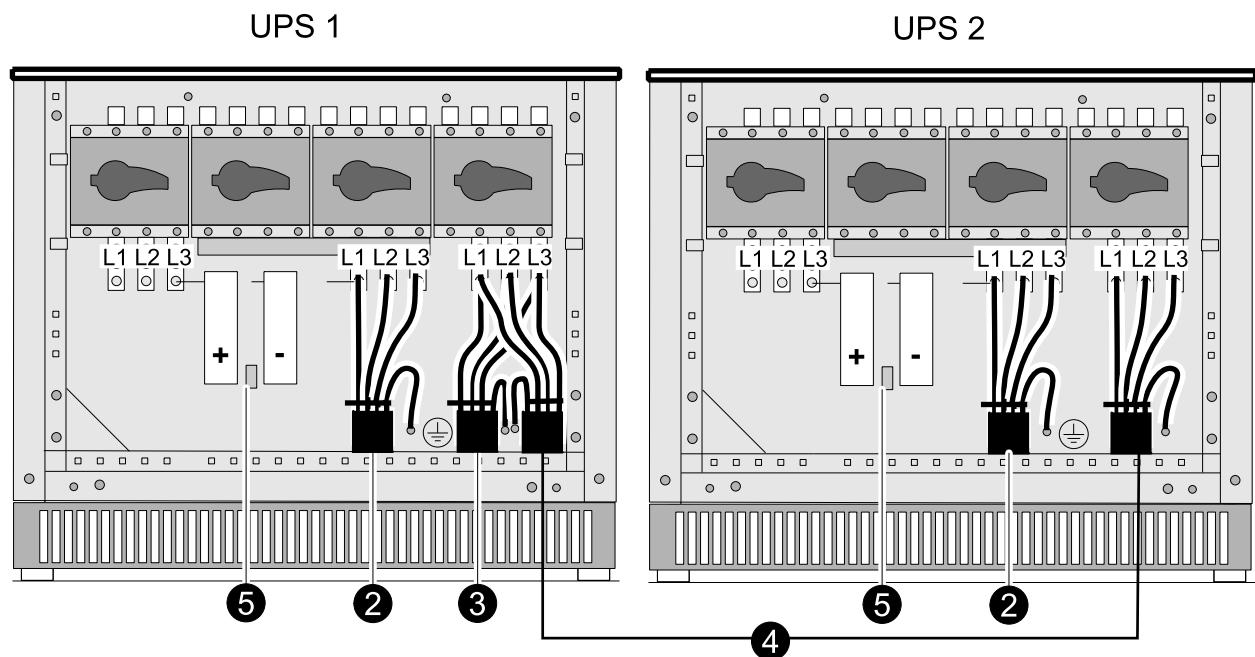


Connect AC Input and Power Cables in Parallel Systems

Single Utility/Mains



Note: A maximum of two UPS units can be installed for Pn.



1. Remove the protection cover in the bottom of the enclosure.
2. Connect the AC input cables to the AC input terminals and to the UPS grounding plate for both UPS units in both UPS units.
3. Connect the AC output cables to the AC output terminals and to the UPS grounding plate in UPS 1.
4. Connect the three load connectors from AC output terminals in UPS 1 to AC output terminals in UPS 2.
5. Connect the battery cables to the battery terminals.
6. Secure the cables to the cabinet.
7. Reinstall the cover protection for power terminals.

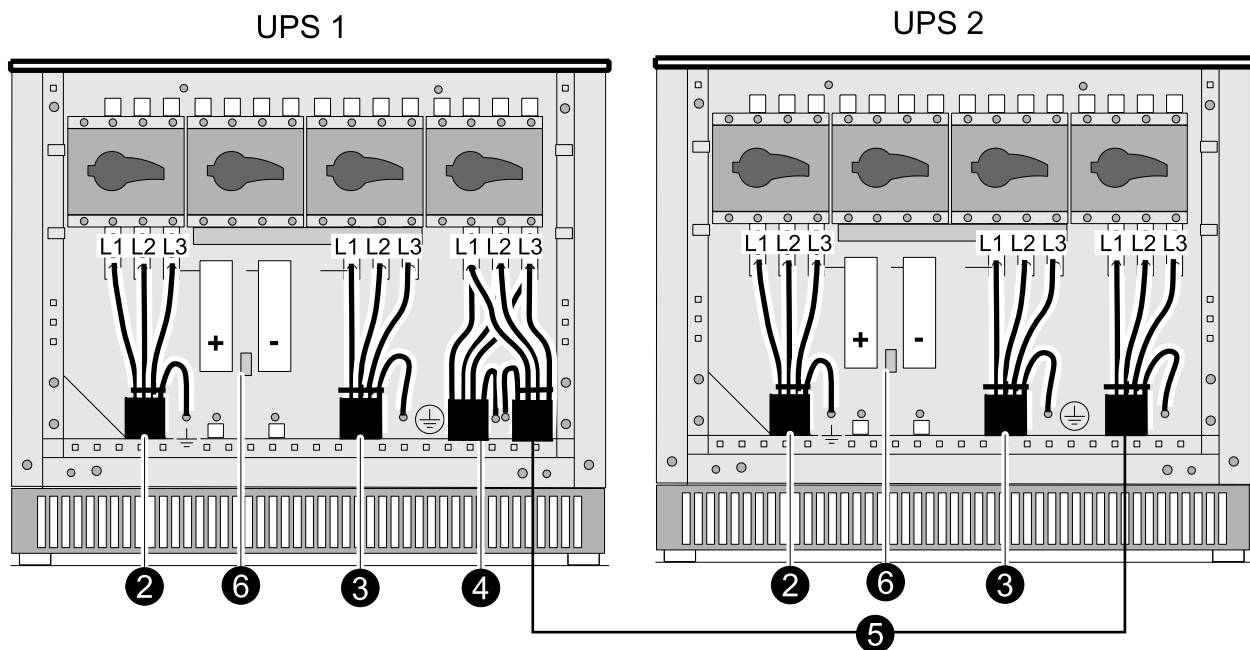
Dual Utility/Mains Systems



Caution: If the two UPS units are placed side by side, connect as indicated below. In other configurations, always make sure that the cables between the UPS units and the bypass source have the same cross-section and the same length. The same is true for the cables between the UPS units and the load.



Note: The drawings below show configurations without an external System Bypass Cabinet.



1. Remove the protection cover in the bottom of the enclosure.
2. Connect the AC input cables to the AC input terminals and to the UPS grounding plate in both UPS units.
3. Connect the AC bypass cables to the AC bypass terminals and to the UPS grounding plate in both UPS units.
4. Connect the AC output cables to the AC output terminals and to the UPS grounding plate in UPS 1.
5. Connect the three load connectors from AC output terminals in UPS 1 to AC output terminals in UPS 2.
6. Connect the battery cables to the battery terminals.
7. Secure the cables to the cabinet.
8. Reinstall the cover protection for power terminals.

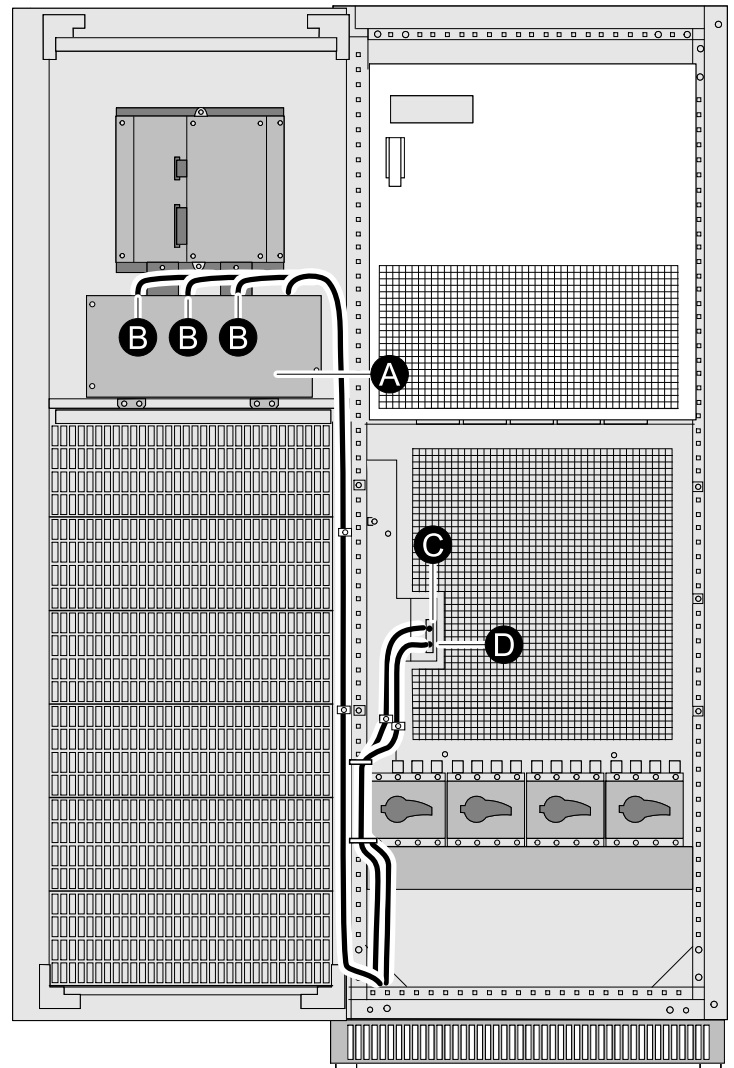
Connect Communication Cables

Overview of Communication Cables in Single Systems



Caution: To ensure sufficient isolation of control and communication cables, they must be run separately from the power cables. Reinforce the insulation of these control and communication cables if any risk of contact with the power cables exists.

- A. Relay communication card (SELV)
- B. Optional communication cards (SELV or LV)
- C. External battery circuit breaker cables (SELV)
- D. General shutdown cable (SELV)

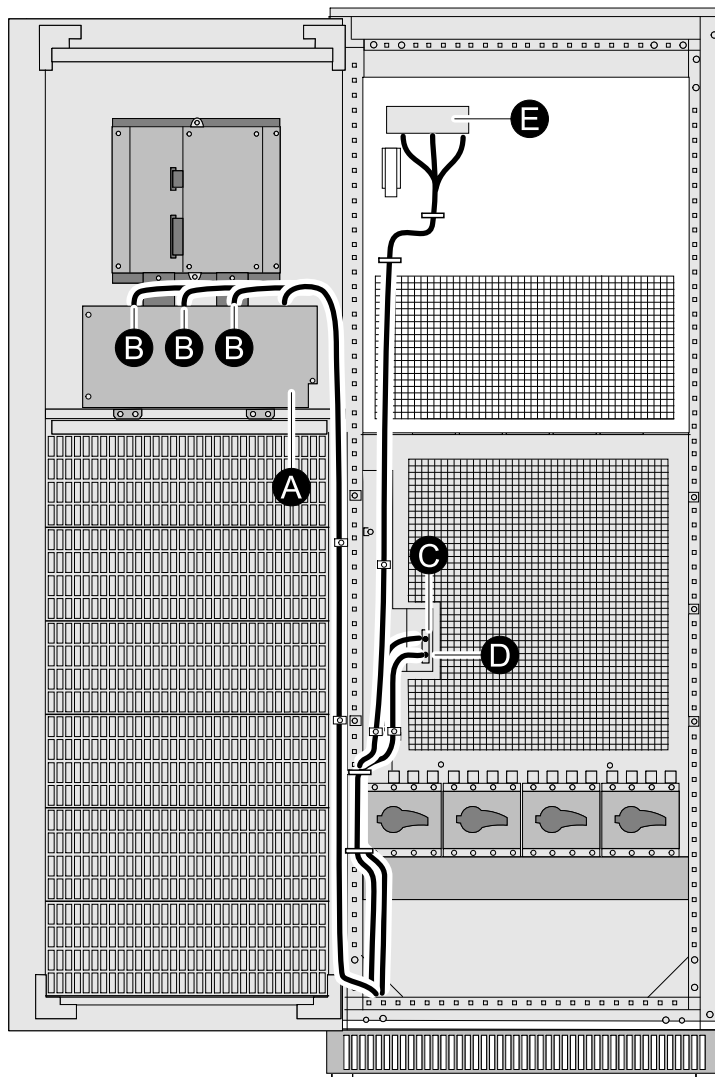


Overview of Communication Cables in Parallel Systems



Caution: To ensure sufficient isolation of control and communication cables, they must be run separately from the power cables. Reinforce the insulation of these control and communication cables if any risk of contact with the power cables exists.

- A. Relay communication card (SELV)
- B. Optional communication cards (SELV or LV)
- C. External battery circuit breaker cables (SELV)
- D. General shutdown cable (SELV)
- E. PCA INTN for connection of external bypass cabinet cable (ELV), CAN cables (SELV), and exchange-current cables (SELV).



Connect Relay Communication Card



Caution: Isolate and lock-out all power sources for this card before making connections. Never connect SELV (safety extra low voltage) and non-SELV circuits to the different outputs of the same card.

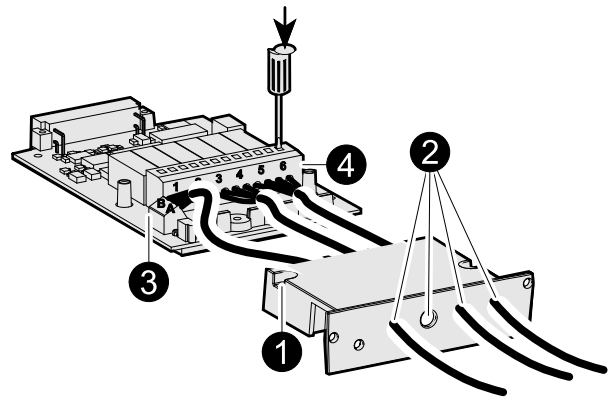
Characteristics of output contacts:

- Permissible voltage: 250 V AC, 30 V DC
- Permissible current: 2 A
- Cable: 4 x 0.93 mm², Ø 6.6 +/- 0.3 mm

Characteristics of input contacts:

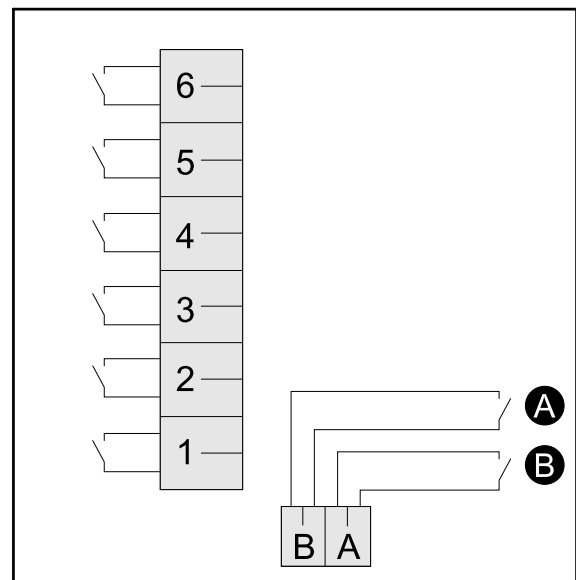
- Switched voltage: 5 V DC
- Consumption: 10 mA
- Cable: 4 x 0.34 mm², Ø 5 +/- 0.5 mm

1. Remove the cover secured by the screws.
2. Run the communication cables through the cable entry holes.



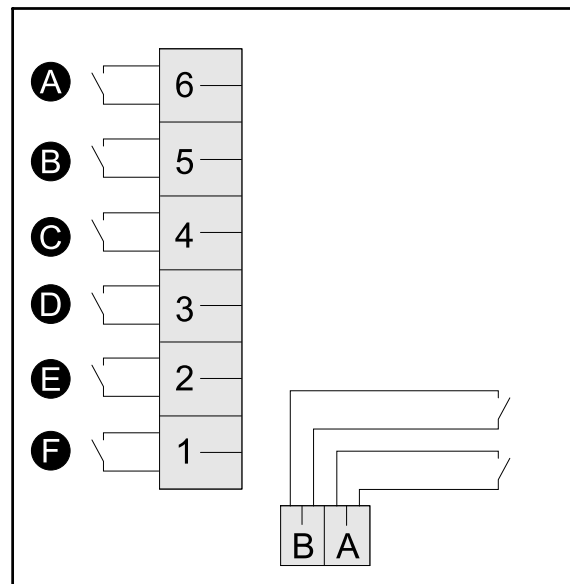
3. Connect conductors to the input terminals.

- A. UPS ON
- B. UPS OFF



4. Connect conductors to the output terminals.

- A. General alarm
- B. Battery fault
- C. Load on UPS
- D. Load on automatic bypass
- E. Load on battery power
- F. Low battery warning



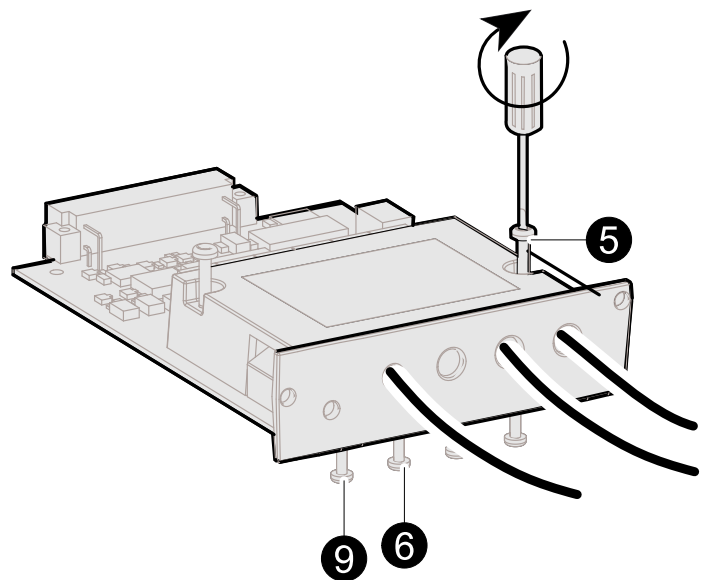
5. Put the cover back in place and secure it with the screws.

6. Tighten the screws to lock the cables.

7. Indicate the locations of the power sources on the labels.

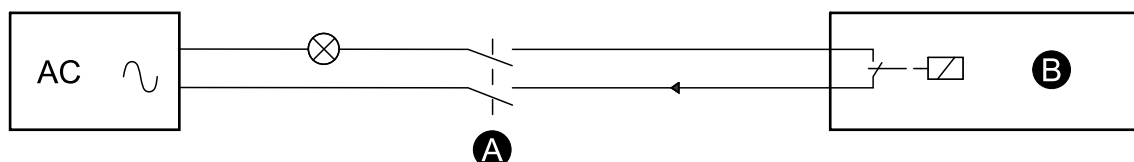
8. Insert the cards in its slot.

9. Secure the card with two screws.



Communication Card Connection Example

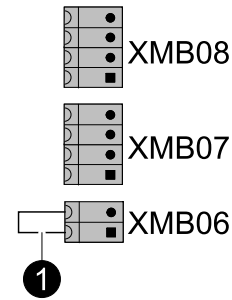
If a SELV source is used, it must always be possible to isolate the communication card from the upstream source to ensure the safety of personnel working on the installation.



Connect General Shutdown or Remote Emergency Power Off

Pressing the general shutdown button causes UPS shutdown and opening of the battery circuit breaker (with opening of the bypass static switch depending on personalization settings). The Remote Emergency Power Off (REPO) notion is applicable to installations where pressing the button also causes the upstream Normal AC source and AC bypass source circuit breakers to open. In parallel systems, there must be a single general shutdown button with a separate contact for each UPS unit.

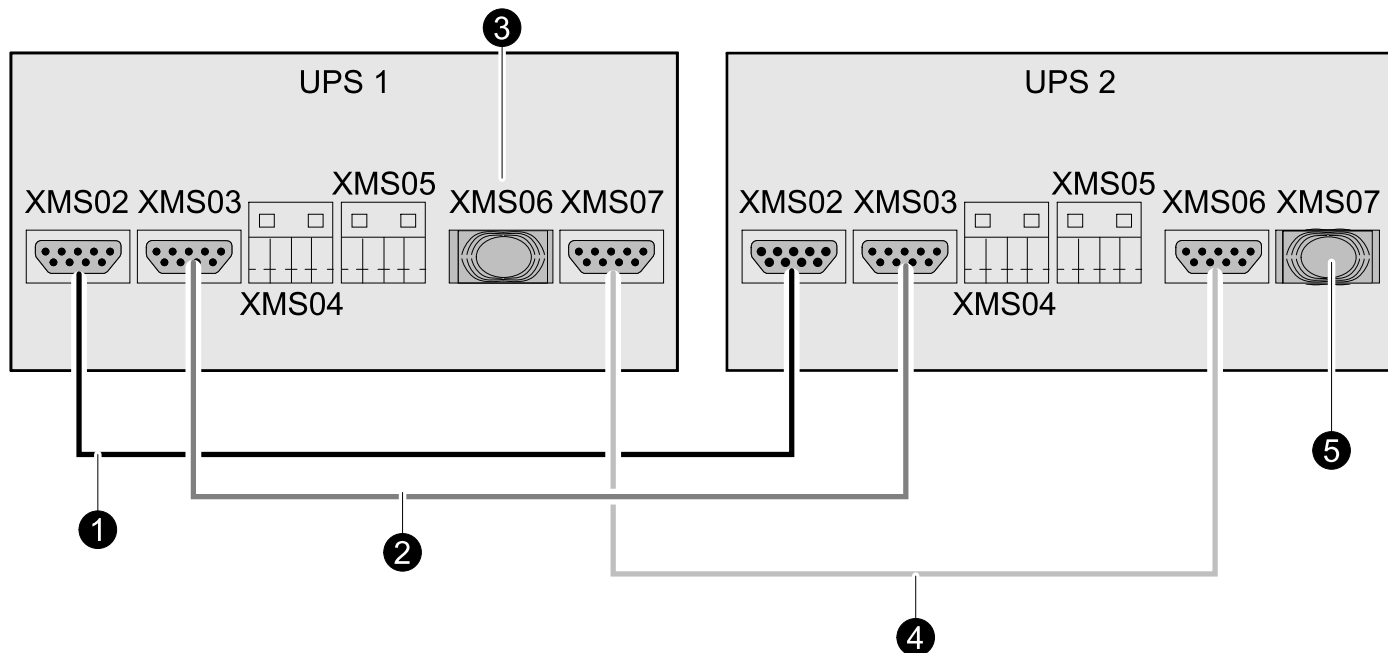
1. Remove the wire jumper from the terminal block.
2. Connect the general shutdown NC contact to terminals 1 and 2 (SELV).
3. Secure the cable.



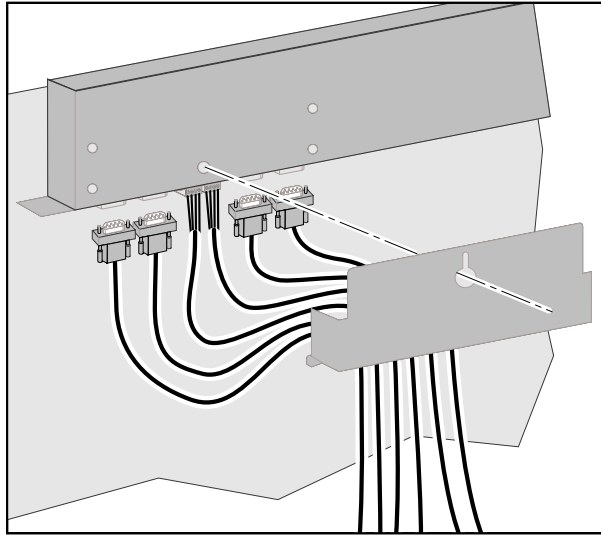
Connect Parallel Communication Cables in Redundant Parallel Systems



Note: The supplied cables (33 ft) limit the distance between two UPS units to approximately 20 ft.



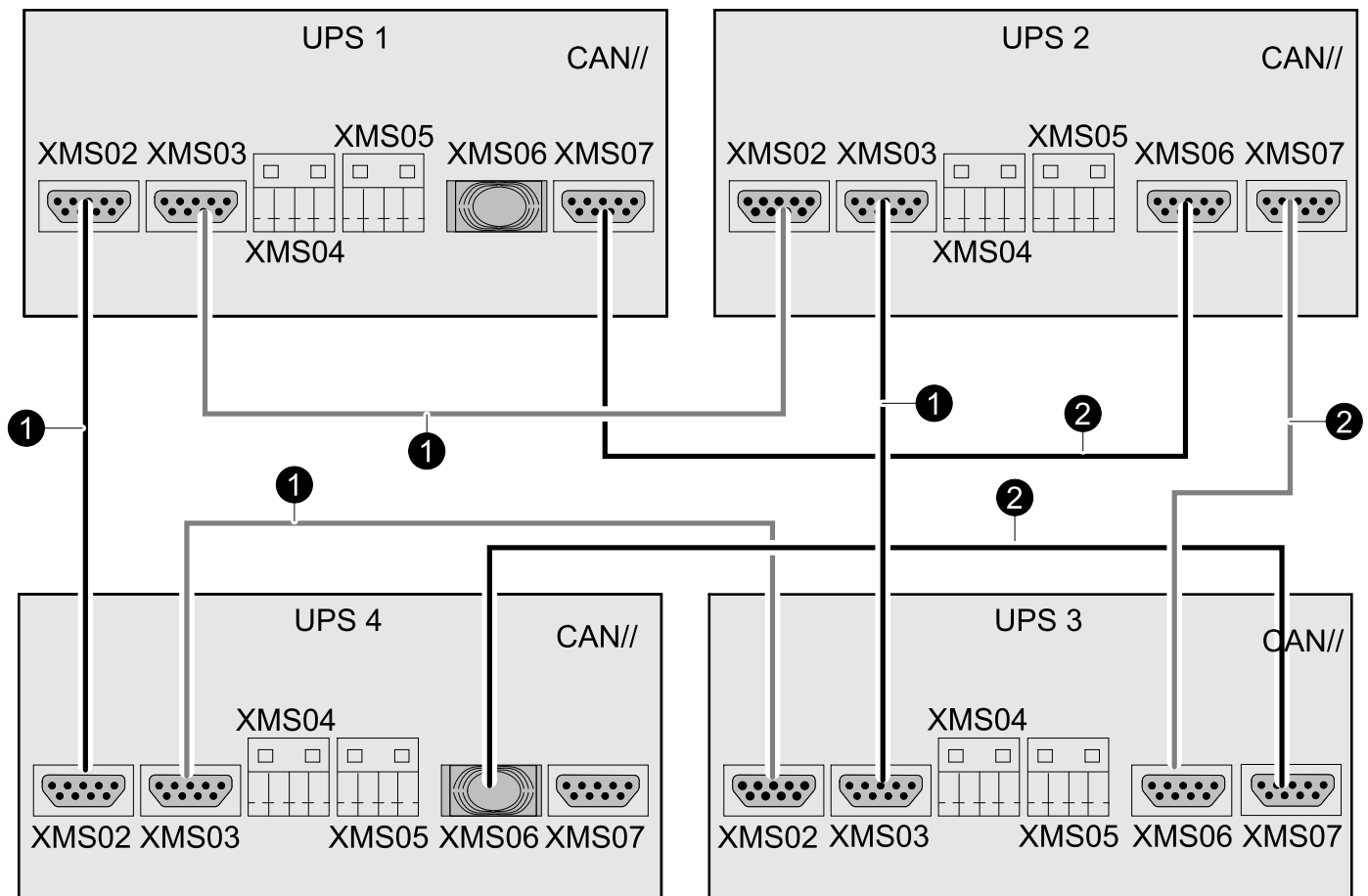
1. Connect a communication cable from XMS02 in UPS 1 to XMS02 in UPS 2.
2. Connect a communication cable from XMS03 in UPS 1 to XMS03 in UPS 2.
3. Install a blue plug in connector XMS06 in UPS 1.
4. Connect a communication cable from XMS07 in UPS 1 to XMS06 in UPS 2.
5. Install a red plug in connector XMS07 in UPS 2.
6. Fit the protection cover supplied with the parallel system over the auxiliary interconnection cables.



Connect Parallel Communication Cables in Capacity Parallel Systems

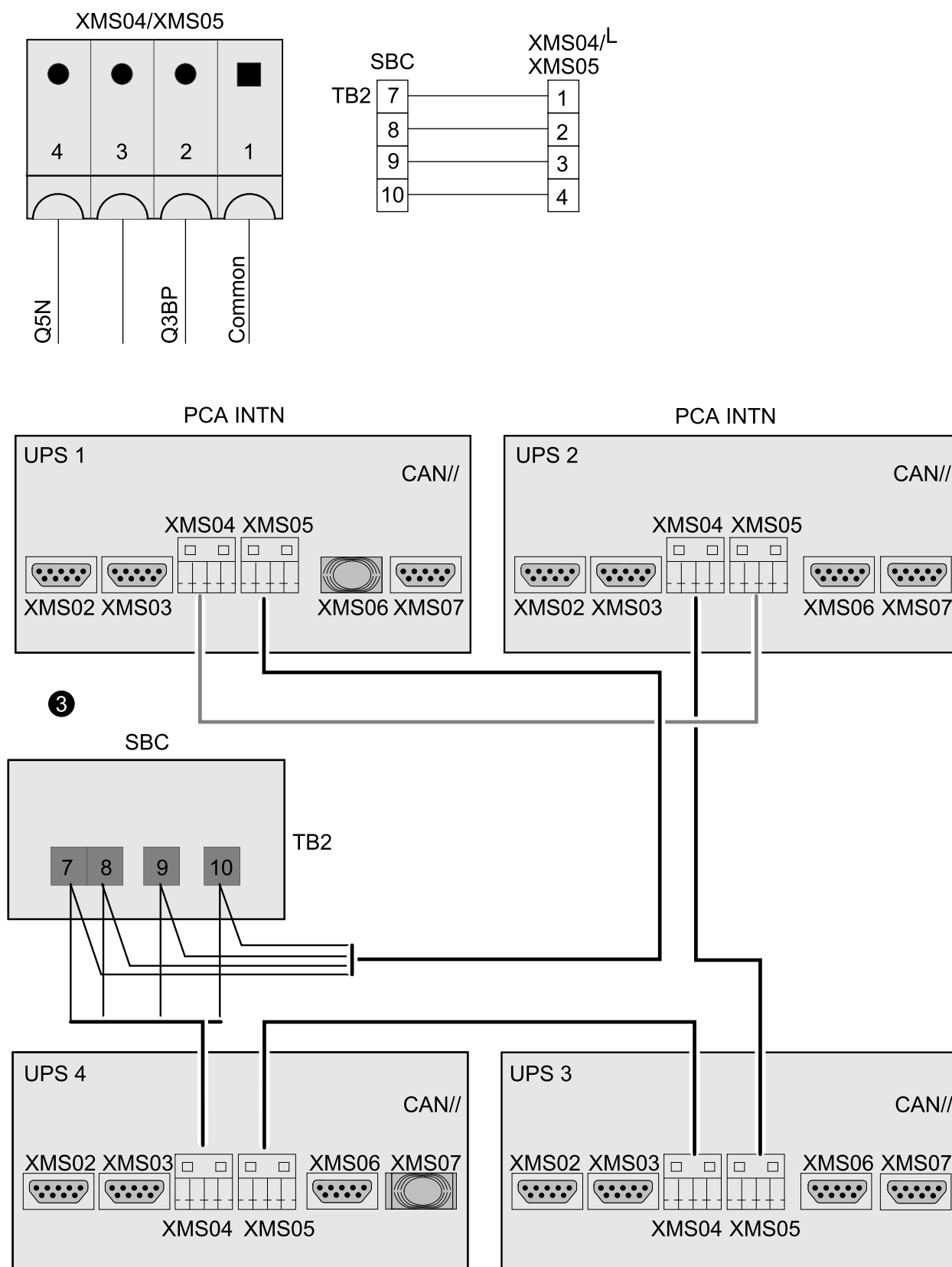


Note: The supplied cables (33 ft) limit the distance between the two UPS units to approximately 20 ft.

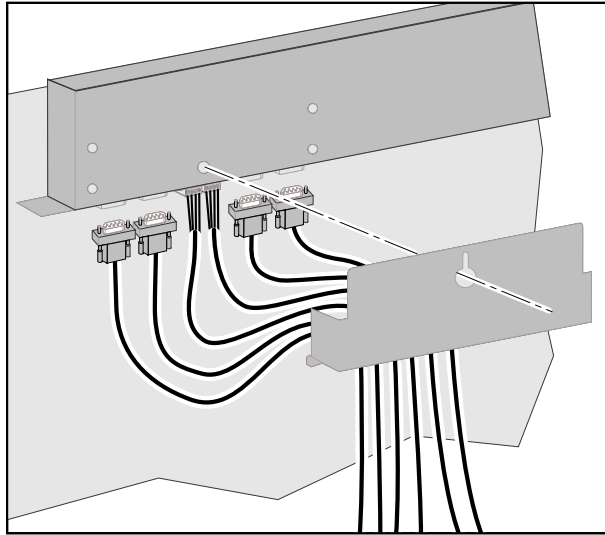


1. Use the XMS02 and XMS03 terminals to create a loop between all UPS units as shown on the illustration (all the XMS02 and XMS03 terminals must be used).

- Daisy-chain the UPS units using the XMS06 and XMS07 terminals. Fit a blue connector on the first UPS unit and a red plug on the last UPS unit (all the XMS06 and XMS07 connectors must be used).

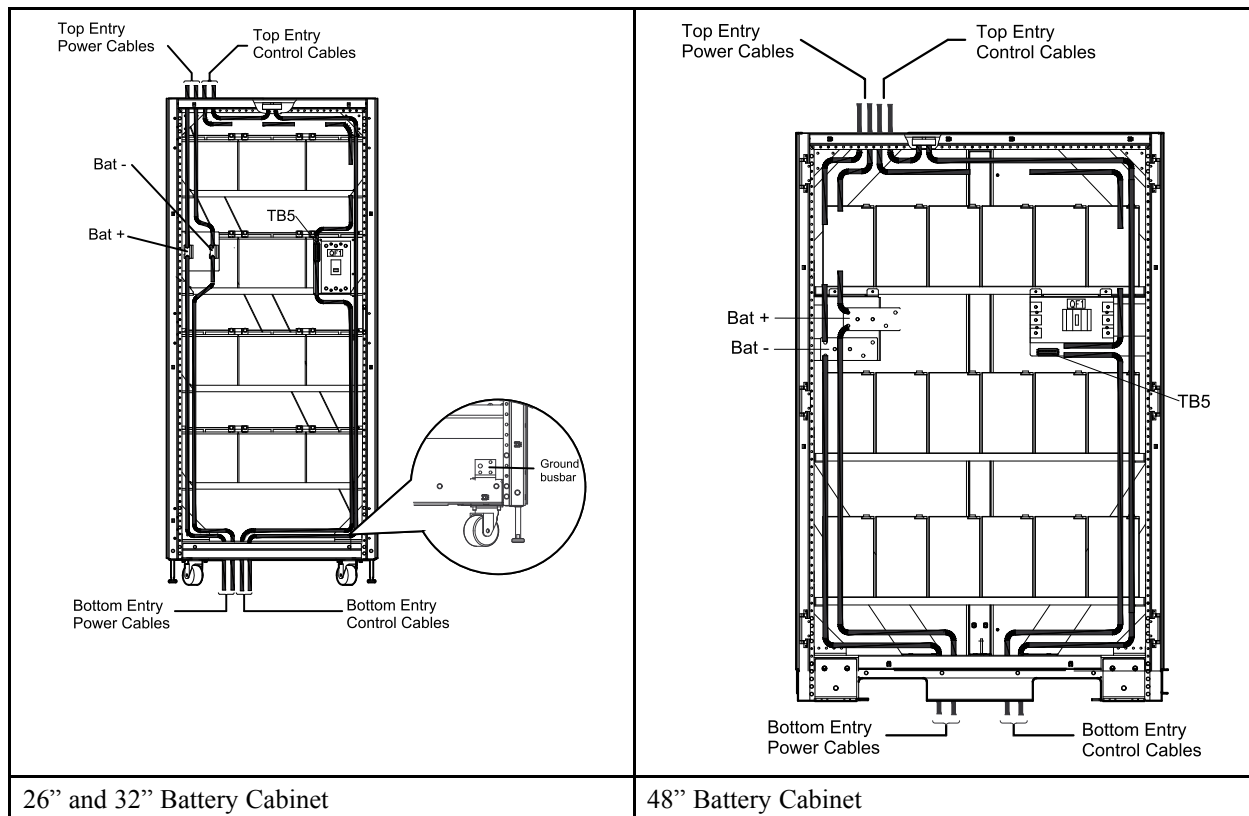


- Connect terminals 7, 8, 9, and 10 on the auxiliary terminal block TB2 in the system bypass cabinet to UPS terminal blocks XMS04/XMS05 pins 1, 2, 3, and 4 respectively and create a loop connection between the system bypass cabinet and the UPS as shown.
- Fit the protection cover supplied with the parallel system over the auxiliary interconnection cables.



Install an External Battery Cabinet

Install ATIZ PCA and GND Busbar

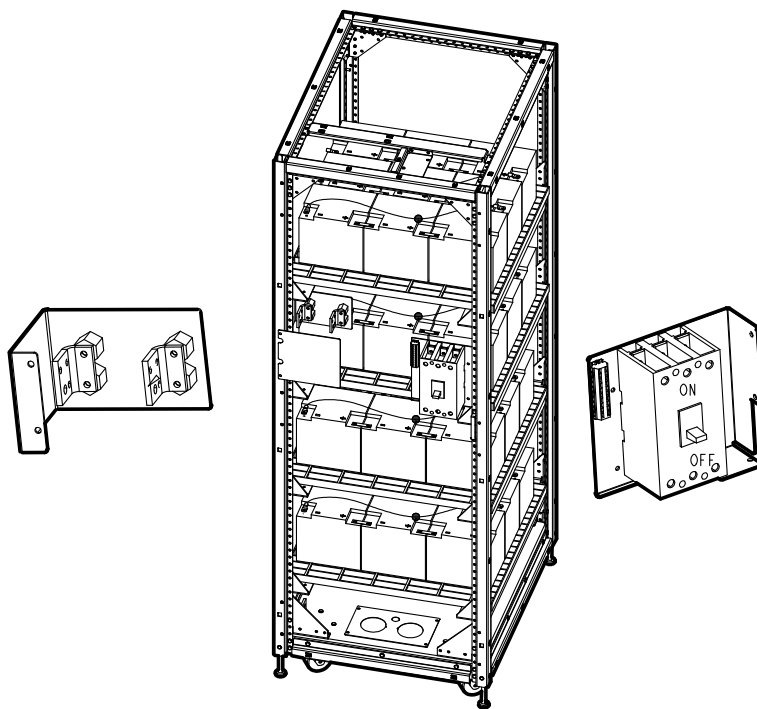


1. If the ATIZ PCA option has been purchased, install the ATIZ PCA in the first battery cabinet.
2. Install the Ground (GND) busbar.

The Battery Circuit Breaker



Note: Only one circuit breaker is necessary even if several battery cabinets are connected.



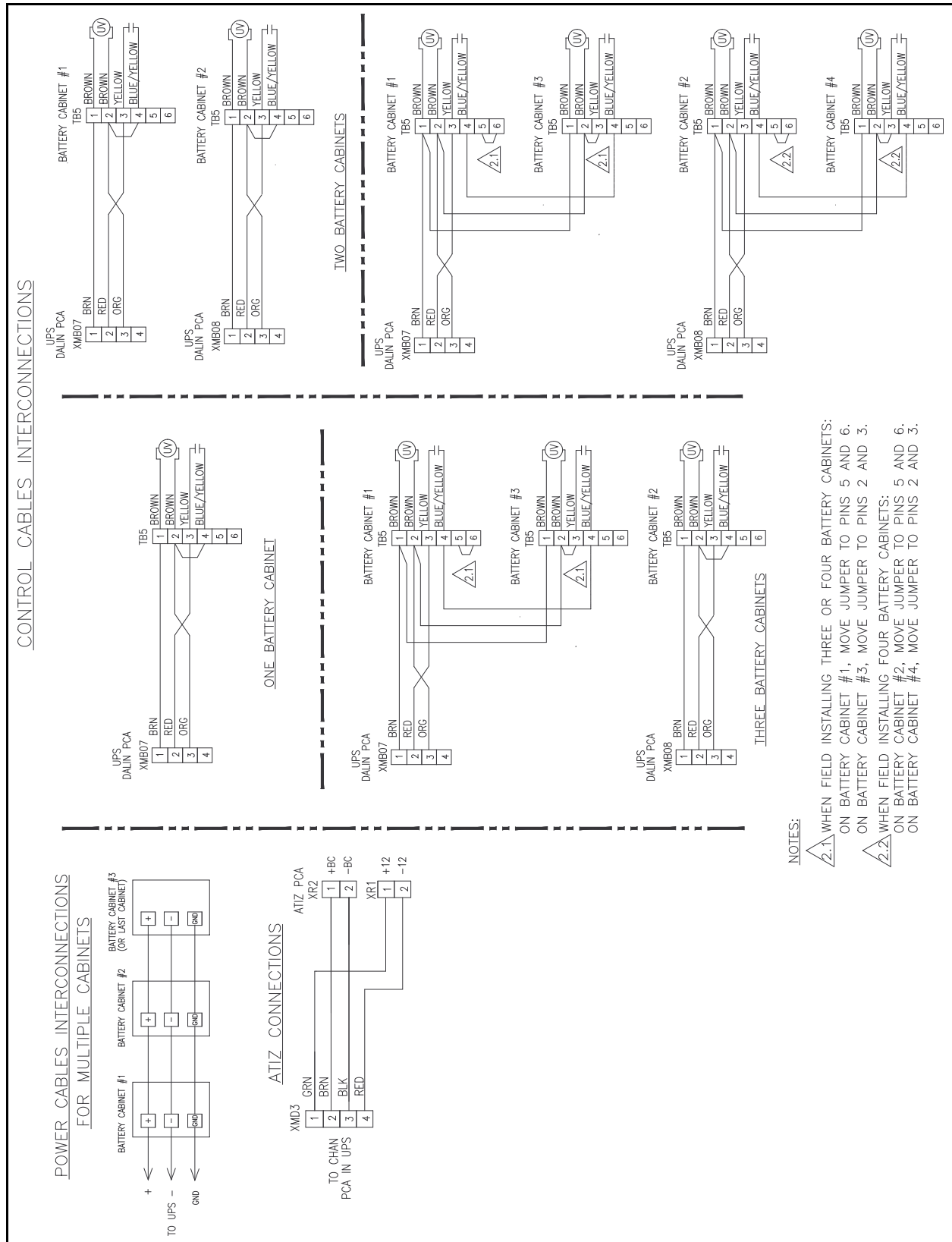
1. The battery circuit breaker is pre-installed in the battery cabinet from factory.
2. Secure the base plate to the battery cabinet to support the circuit breaker.
3. Secure the XR1 connector box to the battery cabinet frame.
4. Secure the temperature sensor to the battery cabinet frame.
5. When the batteries have been connected to the circuit breaker, install the front plate in front of the circuit breaker.

Battery Circuit Breaker Control Wiring

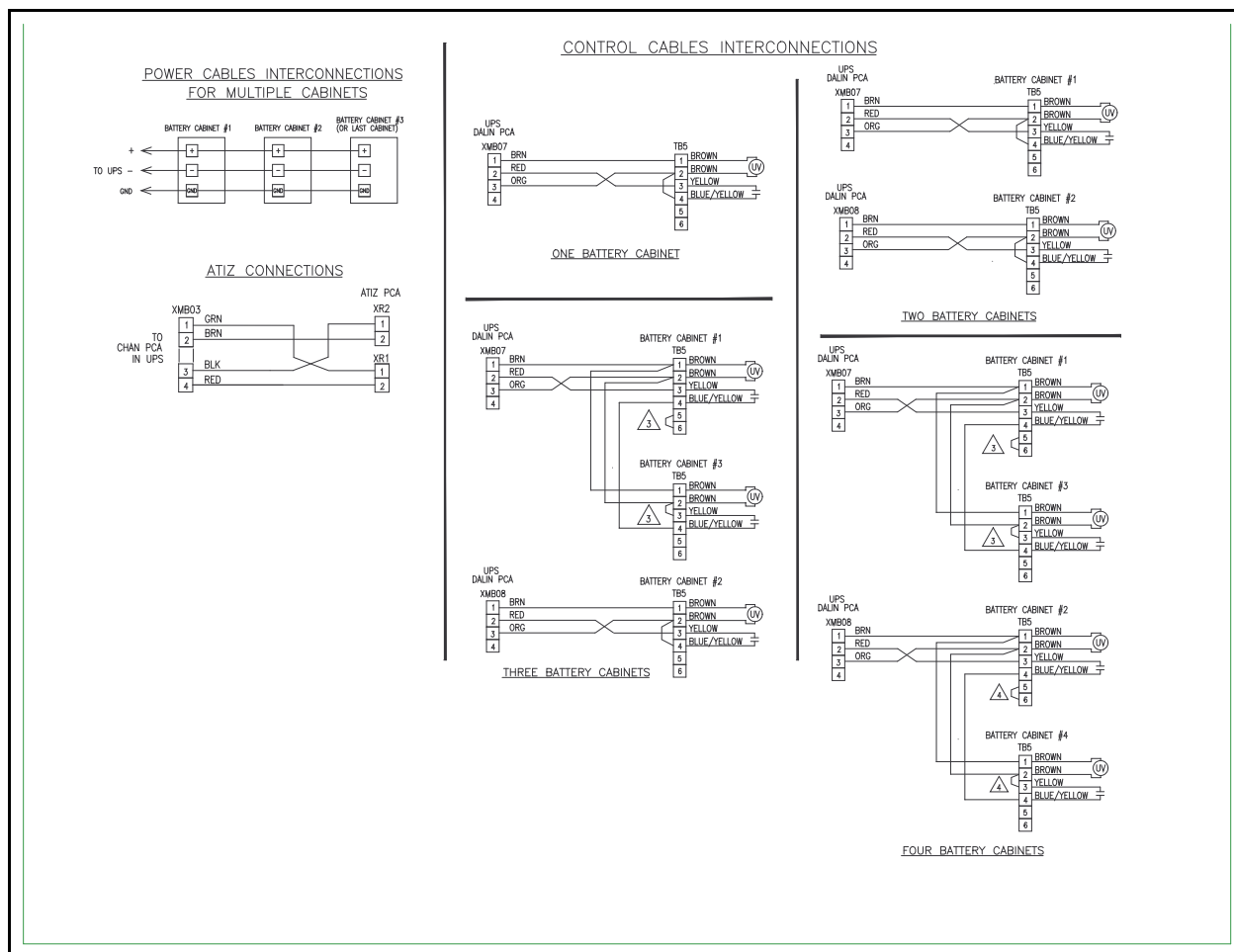
TB5	QF1 Wire Color
1	Brown
2	Brown
3	Yellow
4	Blue / Yellow
5	Jumper 2 to 4

Connect Power and Control Cables

Power and Control Cable Connections for 26" and 32" Battery Cabinets



Power and Control Cable Connections for 48" Battery Cabinets



1. Route the power and control cables as shown. For multiple adjacent cabinets, cables interconnect through the middle of cabinet.

Mount the Battery Cells

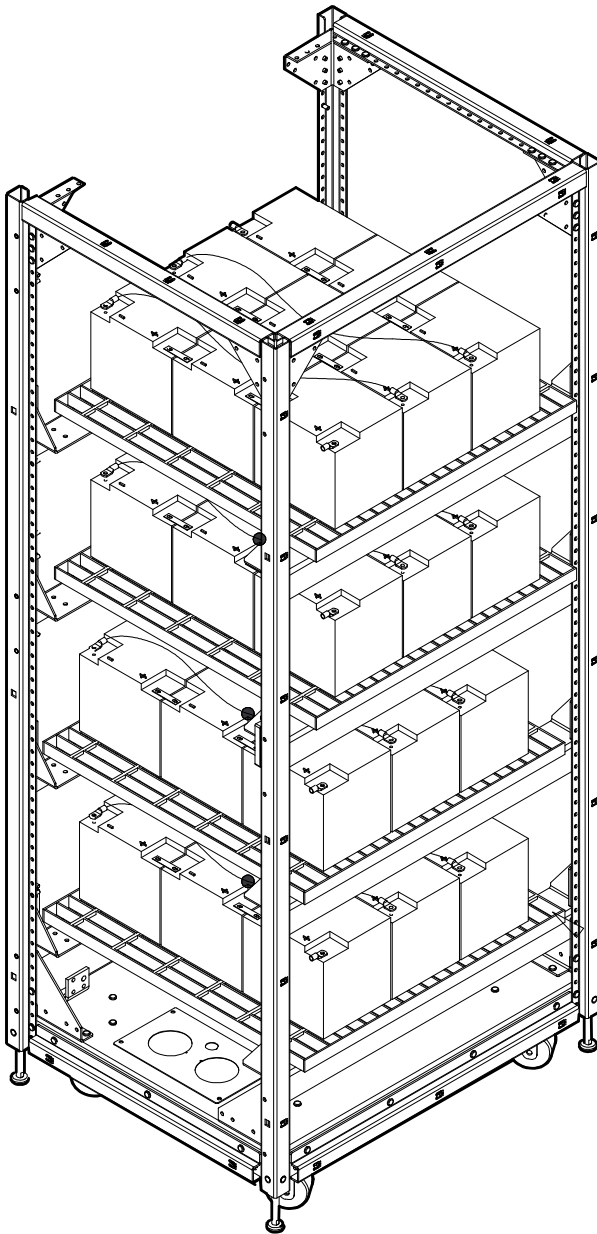


Caution: The battery cabinet must only be assembled by trained personnel.

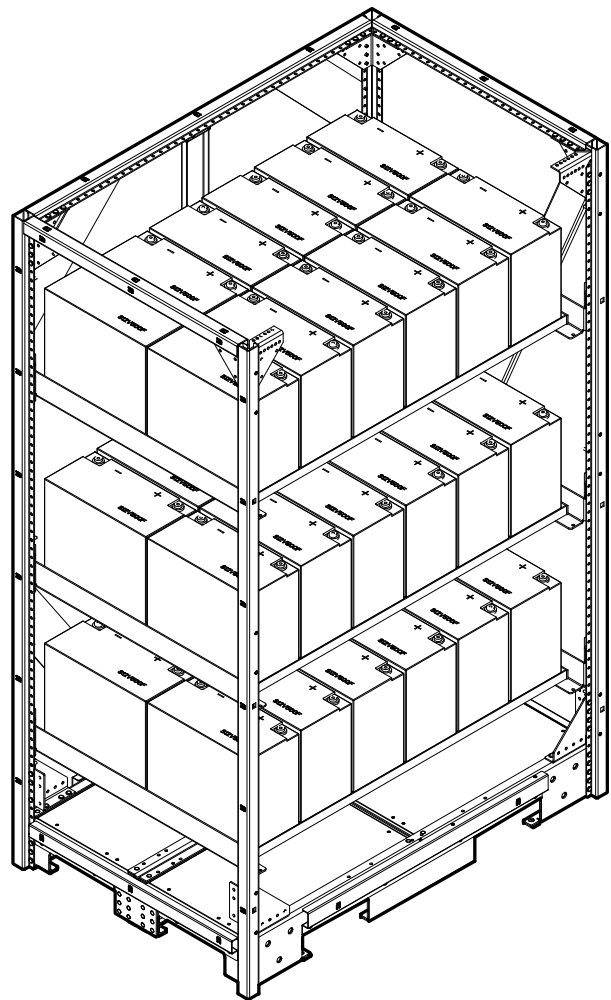


Caution: A minimum clearance of 150 mm is required between the top of the battery cells and the next shelf.

1. Place the battery cells on each shelves and interconnect them.
2. Interconnect all the battery shelves and connect the complete battery assembly to the battery circuit breaker.

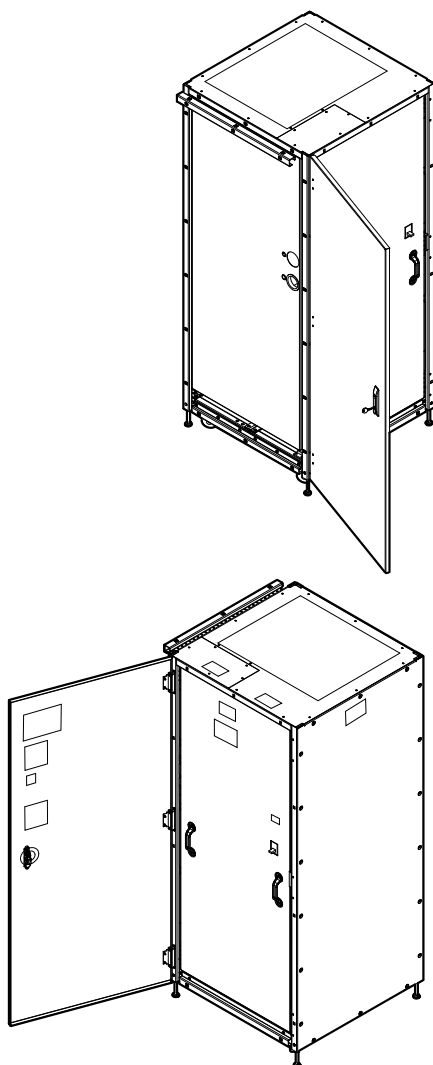


26" Battery Cabinet



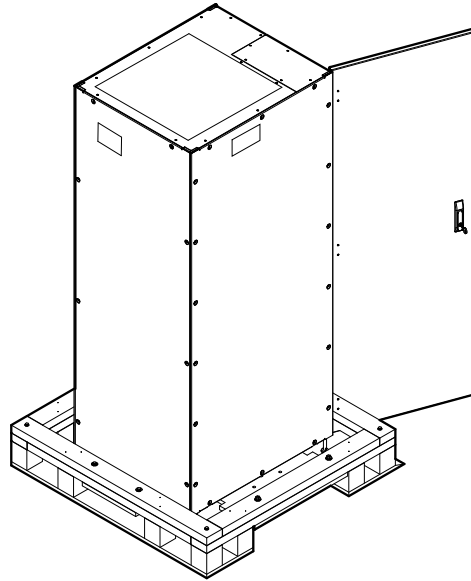
48" Battery Cabinet

Install Panels and Labels on 26" Battery Cabinet (Stand Alone Only)



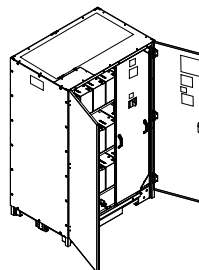
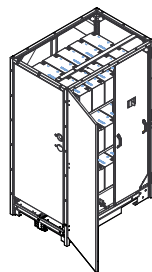
1. Verify proper lock operation in door.

Install Panels, Labels and Pallet on 26" Battery Cabinet



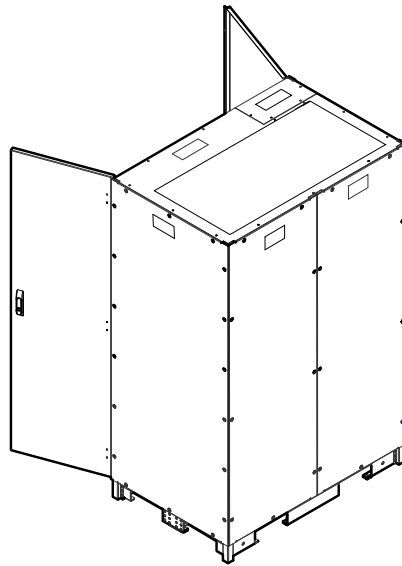
1. Place kickplates on top of unit.
2. Place interconnect brackets kit on top of unit.
3. Use corner board and damage label.

Install Panels and Labels on 48" Battery Cabinet (Stand Alone Only)



1. Verify proper lock operation in door.

Install Panels and Labels on 48" Battery Cabinet



1. Place kickplates on top of unit.
2. Place interconnect bracket kit on top of unit.
3. Use corner board and damage label.

Worldwide Customer Support

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- Contact the Customer Support Center by telephone or e-mail. For local, country-specific centers: go to www.apc.com/support/contact for contact information.

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