



Vanguard Three Phase 10/15/20KVA UPS Battery Cabinet Installation and Operation Manual

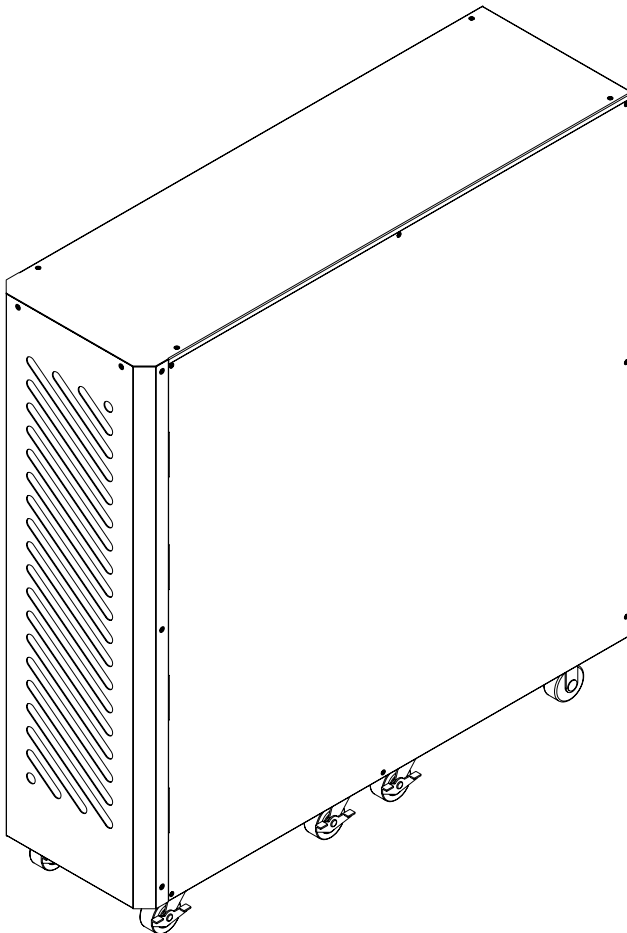


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1. Important Safety

SAVE THESE INSTRUCTIONS

This manual contains important safety instructions. Read all safety, installation and operating instructions before installing the Battery Bank. This manual contains important instructions that should be followed during installation and maintenance of the battery bank and batteries.

An Important Notice

- Make sure the battery bank is installed within the proper environment as specified. (0~40°C/ 32~104°F and 30-90% non-condensing humidity)
- Do not install the battery bank under direct sunlight. Your warranty will be void if the batteries fail due to overheating.
- This battery bank is designed for indoor use only.
- This battery bank is not designed for use in dusty, corrosive or high salt environments.
- The warranty for this battery bank will be void if water or other liquid is spilt or poured directly onto the battery bank. Similarly we do not warrant any damage to the battery bank if foreign objects are deliberately or accidentally inserted into the battery bank enclosure.
- The batteries will self discharge if the system is unused for a period of time. It should be recharged every 2-3 months if unused. If this is not done, then the warranty will be null and void. During normal operation, the batteries will be automatically maintained in charged condition.
- External battery cabinets supplied by others to be installed with the Vanguard UPS, shall have adequate installation instructions that define cable sizes for connection to the UPS. Installation instructions for the battery bank shall be provided by the battery manufacturer.
- To avoid risk of electrical shock, turn off the Vanguard UPS and disconnect all of the AC and DC power sources before servicing the battery.
- Do not disconnect the battery connectors under load under any circumstances.
- Battery replacement and external battery cabinet installation shall be handled by qualified SERVICE PERSONNEL only.
- Connection to the Vanguard External Battery shall be made by qualified SERVICE PERSONNEL only.
- Installation or replacement of batteries must be located in a SERVICE ACCESS AREA:

The service manual shall include the following instructions for battery replacement and disposal:

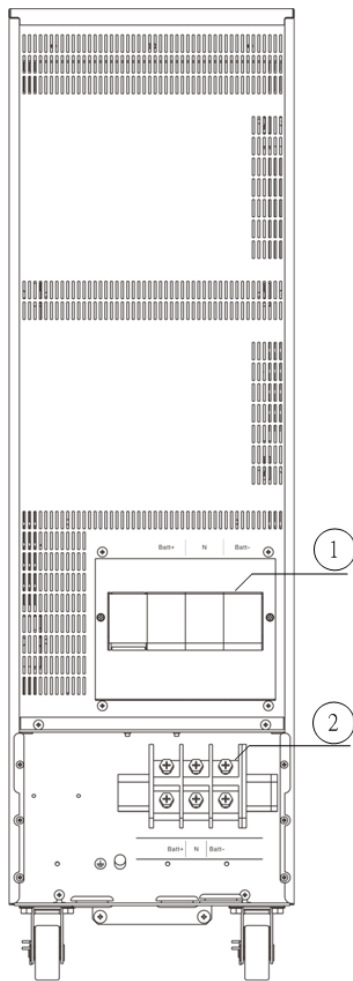
- A) Servicing of batteries should be performed or supervised by qualified personnel knowledgeable about batteries and the required precautions.
- B) When replacing batteries, replace with the same type and number of batteries or battery packs.
- C) CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
- D) CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- E) CAUTION: A battery presents the risk of electrical shock and high short-circuit current. Contact with any part of a grounded battery can result in electrical shock.

The following precautions must be observed when installing or servicing batteries:

- a) Remove watches, rings, or other personal metal objects.
 - b) Use tools with insulated handles.
 - c) Wear rubber gloves and boots.
 - d) Do not lay tools or metal parts on top of batteries.
 - e) Disconnect the charging source and load prior to installing or maintaining the battery.
 - f) Remove battery grounds during installation and maintenance to reduce likelihood of shock. Remove the connection from ground if any part of the battery is determined to be grounded.
-
- 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.
 - WARNING: This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

2. Introduction to the Rear View

2.1 Rear View Descriptions



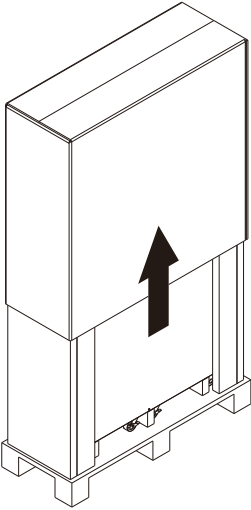
- 1. Fuse holder
- 2. To UPS Battery Terminals

3. Installation and Operation

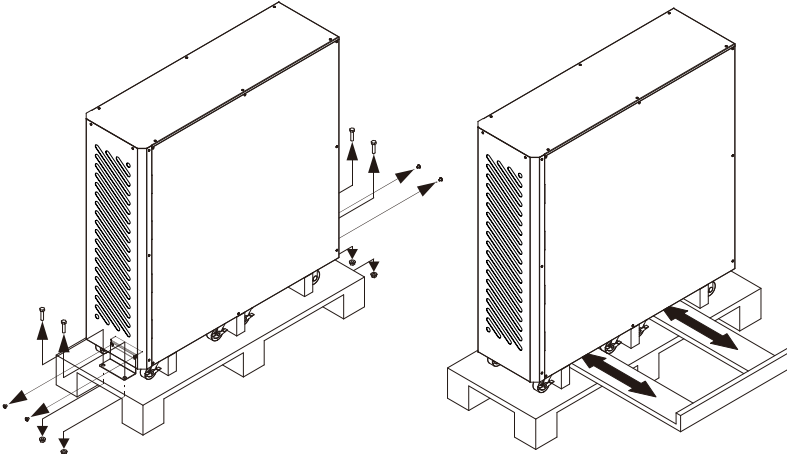
Note: The packing condition and the external surfaces of the cardboard should be inspected carefully before installation. Retain the packing material for future use.

3.1 Unpacking

3.1.1 Remove the Vanguard battery bank out of the PE foam.



3.1.2 Remove the packing materials. And unscrew the fastening rail kits on the front and rear side.








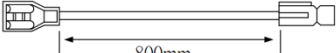
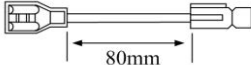



※Note: The battery bank with batteries is very heavy, be cautious when unpacking and lifting the unit to avoid injury. And stacker must be used when moving.

3.2 Standard Package includes

The Vanguard battery bank if shipped without the internal batteries installed, follow the procedures outlines below. **IF THE BANK IS SHIPPED WITH BATTERIES, SKIP THIS SECTION AND PROCEED TO 3.8**

- User Manual
- Accessories Kits as below:

Battery Fixed Support : 10pcs	Screw (M3 x 6mm) : 10pcs	Mylar Film : 30pcs
		
Nylon Rivet : 60pcs	Fuse : 3pcs	Cable#0544 : 90pcs
		
Cable#6398 : 5pcs		Cable#5810 : 5pcs
		
Cable#6092 : 5pcs		Cable#5040 : 5pcs
		

3.3 Battery Quantity

Battery table below :

UPS Model No.	Number of Battery (pcs)	Max. strings of battery
		7AH/9AH
Vanguard UL 10D	20	5
	18	5
	16	5
Vanguard UL 15D	20	5
	18	5
	16	5
Vanguard UL 20D	20	5
	18	5

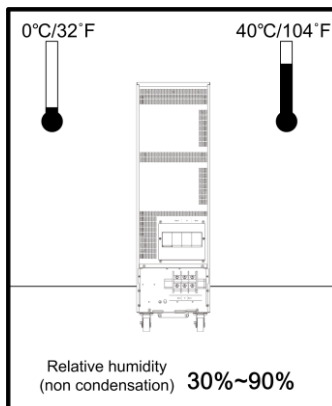
IMPORTANT:

It is very important to identify the VDC rating of the UPS so that the above table can be used to correctly install the quantity of batteries required. Failure to do so, will cause damage to the batteries and also void all warranties.

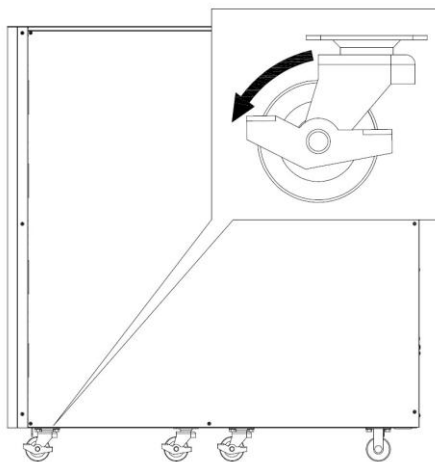
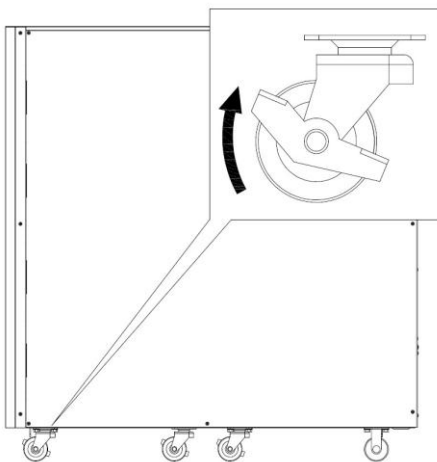
3.4 Selecting Installation Position

It is necessary to select a proper environment to install the battery bank. In order to minimize the possibility of damage to the battery bank and extend the life of the batteries. Please follow the instructions below:

- 3.4.1 Keep at least 20cm(8 inches) clearance from the rear panel of the battery bank from the wall or other obstructions.
- 3.4.2 Do not block the air-flow to the ventilation openings of the unit.
- 3.4.3 Please ensure the installation sites' environmental conditions are in accordance with the battery bank working specifications to avoid overheat and excessive moisture.
- 3.4.4 Do not place the battery bank in a dusty or corrosive environment or near any flammable objects.
- 3.4.5 This battery bank is not designed for outdoor use.

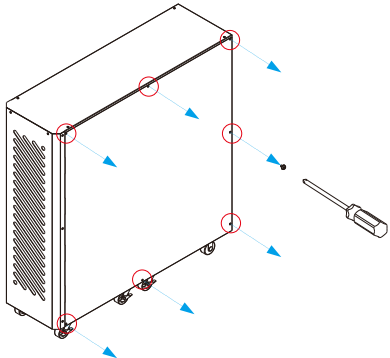
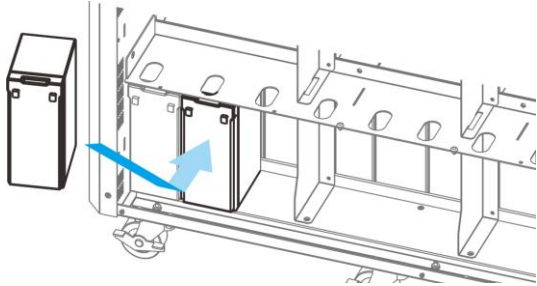
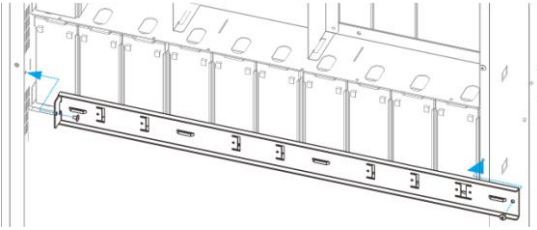


3.5 Installation of Accessories

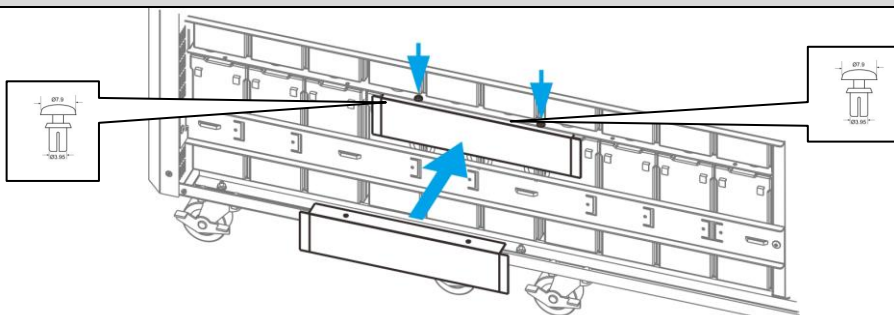


3.6 Installing The Battery

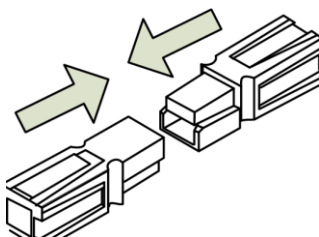
- STEP1 : Remove the right/left side panel.
- STEP2 : To install battery in the battery bank. (Please refer to Appendix).
- STEP3 : Install the battery guardrail.
- STEP4 : Using nylon rivet to fix mylar film.
- STEP5 : Connect Anderson terminal.
- STEP6 : Install the fuse into the fuse holder.
- STEP7 : Measure the voltage of terminal block to ensure the battery connections are correctly.
- STEP8 : Install the right/left side panel.

STEP1	STEP2
	<div data-bbox="504 343 1041 630"></div> <div data-bbox="476 646 1076 686">STEP3</div> <div data-bbox="504 750 1041 981"></div>

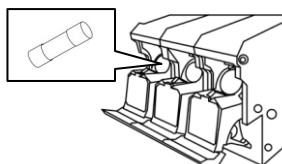
STEP4



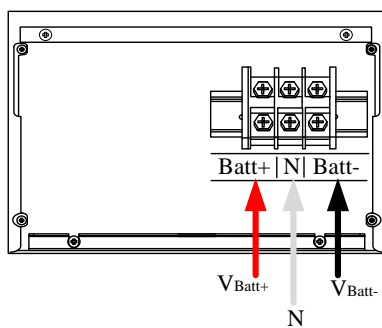
STEP5



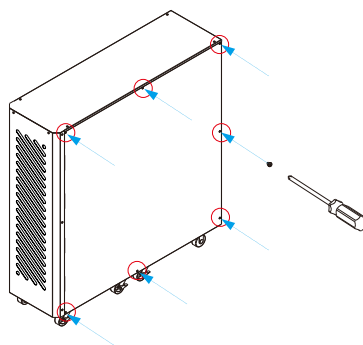
STEP6



STEP7

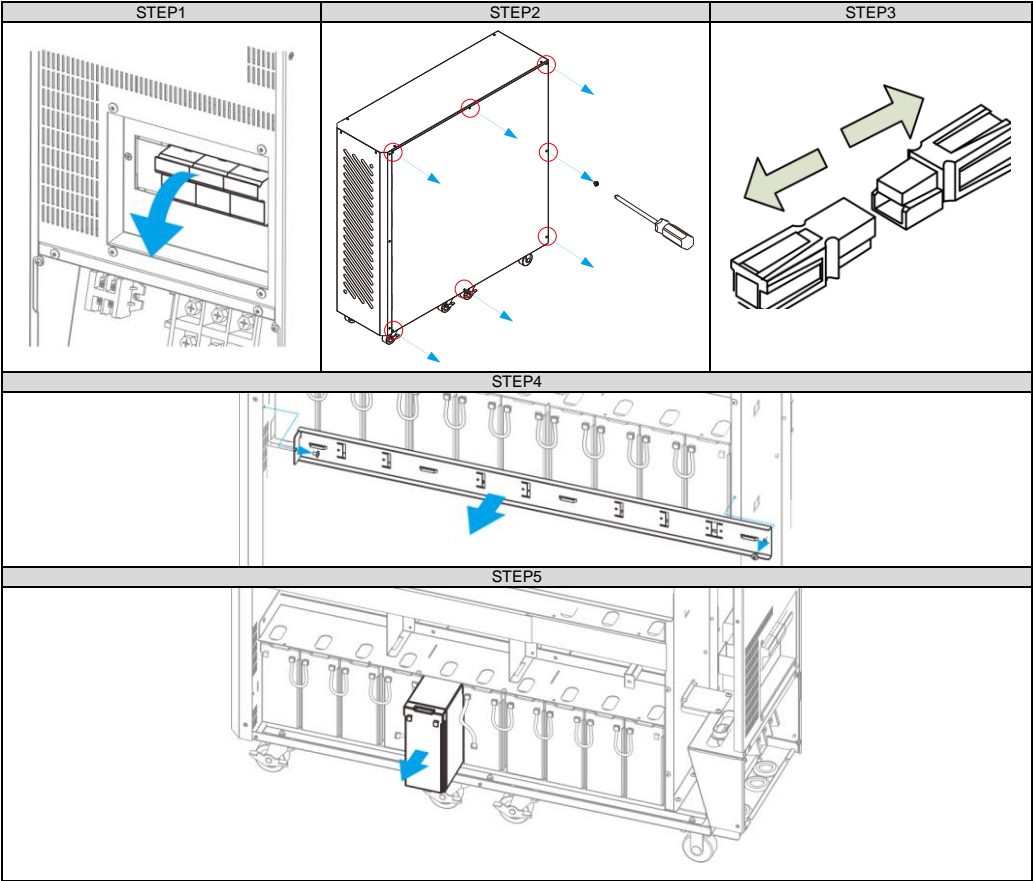


STEP8

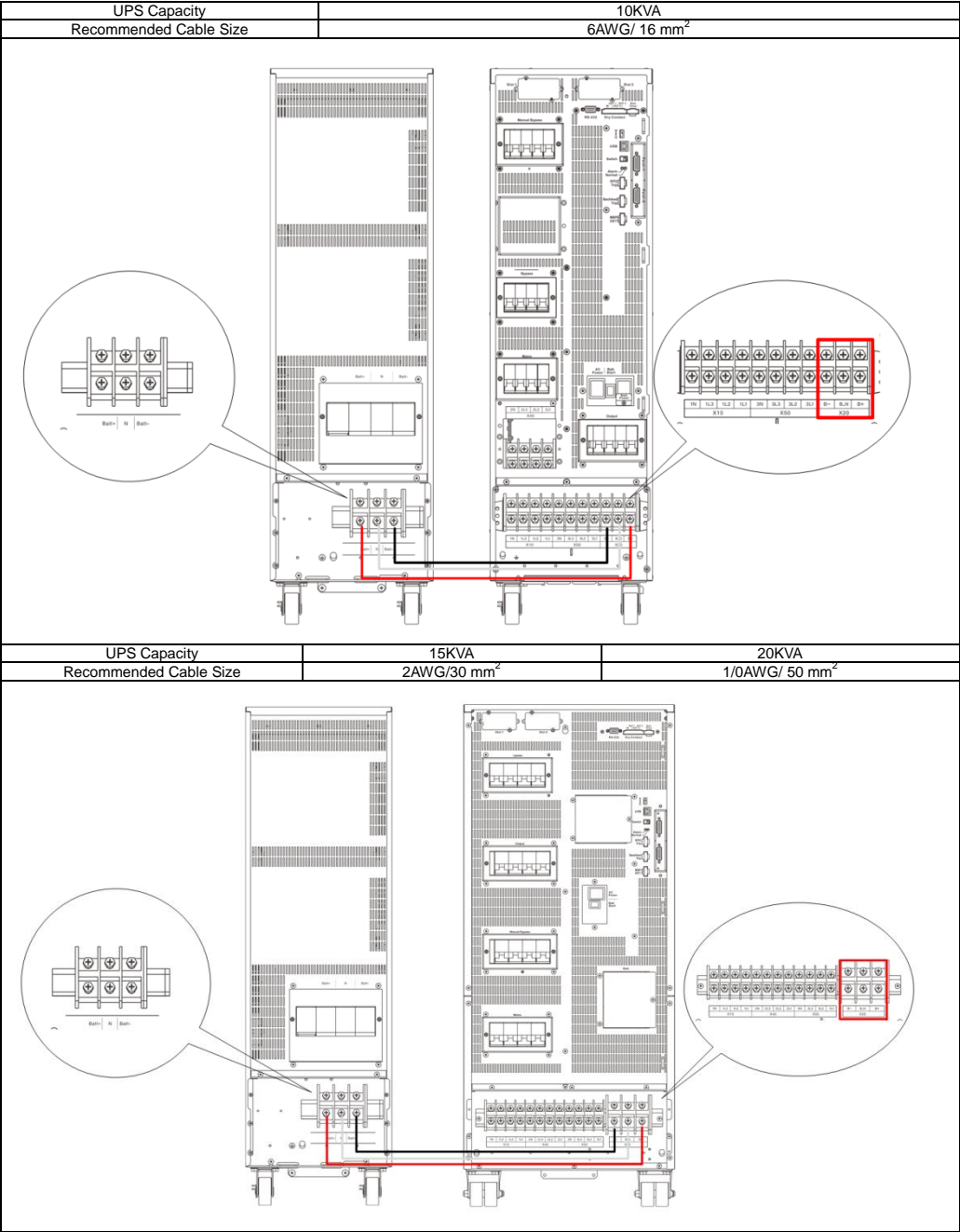


3.7 Battery Replacement

- STEP1 : Disconnect the fuse holder.
STEP2 : Remove the right/left side panel.
STEP3 : Disconnect Anderson terminal.
STEP4 : Remove the battery guardrail.
STEP5 : Disconnect battery cable and take the battery out of the battery bank.



3.8 Wiring of Vanguard UPS and Battery Bank



3.9 Storage Instructions

For extended storage in a moderate climate (-15 to +30 °C / +5 to +86 °F), the batteries should be charged for 12 hours every 6 months by connecting a DC charger rated for the correct DC voltage. Verify the VDC indicated on the rear of the battery bank. Repeat this every 3 months under high temperature (+30 to +45 °C / +86 to +113 °F) environment.

3.10 Specifications

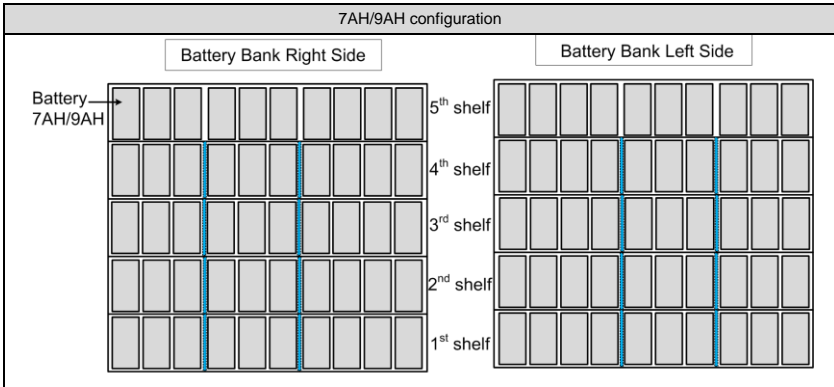
■ 7AH/9AH

Battery bank				
UPS Capacity		10kVA/ 15kVA/	10kVA/ 15kVA/ 20kVA/	10kVA/ 15kVA/ 20kVA/
Voltage Rating		±96V _{DC}	±108V _{DC}	±120V _{DC}
Battery Capacity		7AH 9AH	7AH 9AH	7AH 9AH
Battery Quantity (pcs)		80 (16x5)	90 (18x5)	100 (20x5)
Dimensions (WxHxD, mm/inch)		260x890x850 mm 10.24x35.04x33.46 inch		
Weight (kg/lb)	W/O	49.5 kg 109.12 lb		
	With 7AH 2.2 kg 4.85 lb	225.5 kg 497.12 lb	247.5 kg 545.6 lb	269.5 kg 594.12 lb
	With 9AH 2.4 kg 5.29 lb	236.7 kg 521.8 lb	251.1 kg 553.5 lb	265.5 kg 585.3 lb
Operation Environment		0~40°C / 32~104°F, 30-90%RH non-condensing		

4. Appendix

■ Battery Bank Descriptions

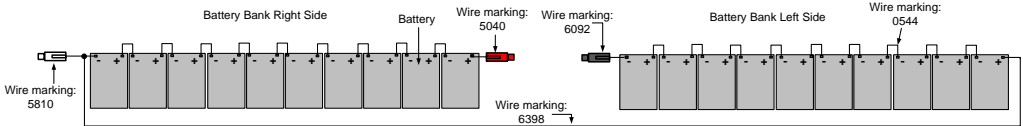
Battery bank has 5 shelves. For 7AH/9AH, 10 batteries can be placed in one shelf, as below:



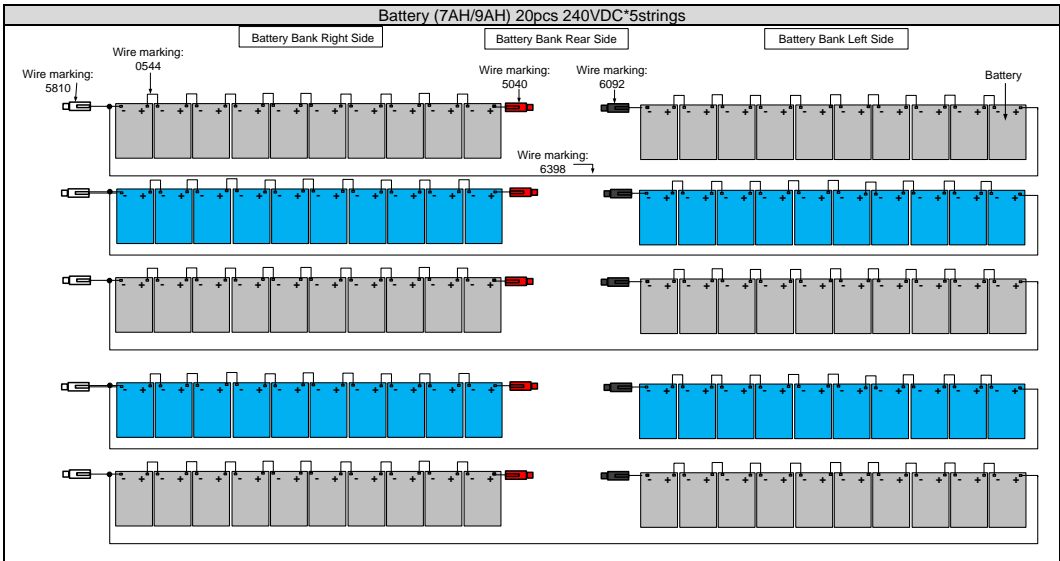
■ Connection Cable to Battery

The internal wiring diagram, as below:

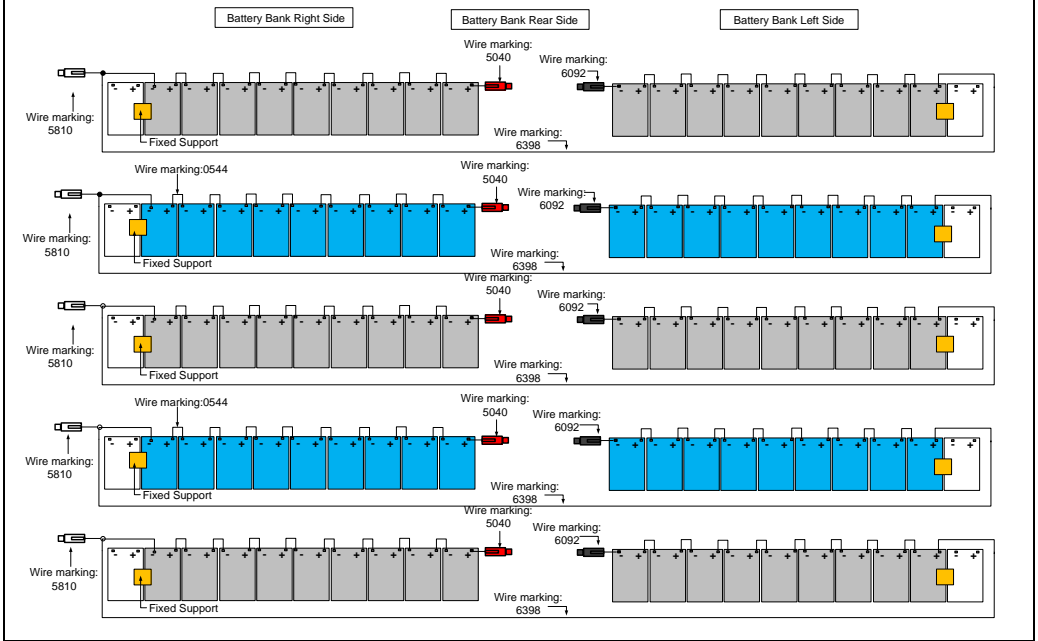
Cable#	Description
5040	Positive battery cable
6092	Negative battery cable
5810	Neutral battery cable
0544	Battery connection cable
6398	Neutral battery connection cable



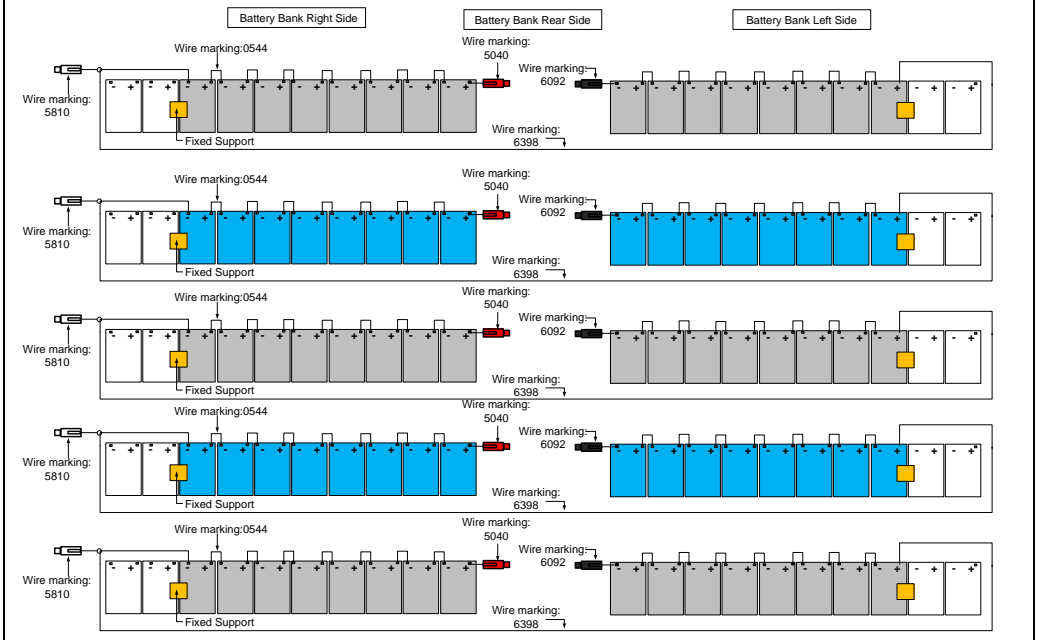
■ Battery (7AH/9AH) internal wiring diagram



Battery (7AH/9AH) 18pcs 216V*5strings



Battery (7AH/9AH) 16pcs 192V*5strings



* UL 20D is not recommended.

