

USER MANUAL
BM-LFP-WALL-5KWh-51.2V
BM-LFP-WALL-10KWh-51.2V

WALL & FLOOR MOUNT BATTERY LFP BATTERY MODULE



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LIMITATION OF LIABILITY

The preparation of the site, wiring, installation, and operation of this product by the user or their technicians will not be the responsibility of the distributor or the manufacturer XMART-UPS.

The site will be prepared by the end user or their electrical contractor and must comply with the current local electrical regulations and the operating specifications of this product.

This manual describes the minimum conditions and technical requirements that the site and electrical installation associated with this battery must meet.

The requirements described are not intended to substitute the minimum conditions required by local regulations and standards. The installation and equipment related to this battery must comply with the technical requirements of the battery, but above all, they must also comply with the current local regulations and standards.

In some cases, local regulations and standards may be more stringent than the technical requirements of this product described in this manual. In such cases, more stringent regulations must be followed.

1. SAFETY INSTRUCTIONS AND WARNINGS

Strictly comply with all safety warnings and advice. This product must be installed and maintained only by qualified personnel. Keep this guide for future reference.



WARNING - RISK OF ELECTROCUTION, OVERHEATING, FIRE, AND/OR EXPLOSION:

This battery, due to its capacity to store energy, presents a real risk of electrocution. In the event of a short circuit or low impedance between its terminals, this battery can generate high discharge currents.

There is a risk of overheating, fire, and explosion if this battery is not installed, operated, and/or stored correctly.

The product is protected and sealed with screws or a seal. Do not attempt to access its interior.



WARNINGS:

WARNING: This product should only be installed by trained and experienced personnel.

It must be installed following the recommendations in this guide and complying with current electrical regulations.

Neither the manufacturer nor its distributors are responsible for personal or material damage that may arise from defective installations, incorrect use, or improper storage.

WARNING: In case of emergency, disconnect and/or turn off the battery and call technical service.

WARNING: The cables chosen to connect these batteries must have the appropriate gauge and must be firmly tightened. Otherwise, overheating and damage to the batteries and/or connected products may occur.

WARNING: Cables for connecting these batteries must be equipped with protection devices against disconnection and overcurrent.

WARNING: Technicians must use electrically insulated tools. Conductive elements must be prevented from falling onto the battery terminals. DO NOT short battery terminals.

WARNING: This product is designed to be used in well-ventilated indoor environments and protected from water, sunlight, and extreme temperatures. The environment must be free of dust and conductive contaminants.

It should not be used outdoors or near sources of moisture or heat. Avoid direct sunlight.

WARNING: Make sure compliance with the storage, recharge, and discharge temperatures of this product:

- Storage: from -40°C to +60°C
- Discharge: from -20°C to +55°C
- Recharge: from 0°C to +55°C

It is recommended to review the Charging and Discharging sections in this document

WARNING: Avoid drops, impacts, or collisions on the battery structure. Objects should not be placed on the battery.

WARNING: To remove this battery, make sure all devices are disconnected.

WARNING: DO NOT incinerate, crush, or disassemble this battery.

WARNING: DO NOT reverse cable polarity from charger to battery.

WARNING: DO NOT operate this battery beyond nominal voltage and current limits.

INFORMATION FOR THE PROTECTION OF ENVIRONMENT:

This product might use risky components for the environment. Take removed components to specialized collection and disposal centers.

NOTICE TO EUROPEAN UNION CUSTOMERS: DISPOSAL OF OLD APPLIANCES



This product has been supplied by an environmentally aware manufacturer that complies with Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/CE. The "crossed-out wheeled bin" symbol at left is placed on this product to encourage you to recycle wherever possible. Please be environmentally responsible and recycle this product through your recycling facility at its end of life. Do not dispose of this product as unsorted municipal waste. Follow local municipal waste electrical and electronic equipment (WEEE).

2. PRODUCT DESCRIPTION

- This battery belongs to the Lithium-Ion group, specifically the LiFePO4 type (Lithium Iron Phosphate, abbreviated as LFP). This is the safest type of Lithium battery, but all safety, storage, and operation regulations must be followed to avoid overheating, fire, and/or explosions.
- Nominal voltage: 51.2VDC. Max. discharge current: 100A (5120Wh) or 200A (10240Wh) according to the model.
- These batteries can be connected, as shared battery bank, to Xmart Solar Inverters installed in parallel. For this, it is mandatory to comply with all charge/discharge specifications explained in this manual.
- These are very high energy density batteries.
- This battery has an internal electronic management and protection system called BMS (Battery Management System).
- These batteries, as consumer products, require their own internal BMS due to the risk of flammability if the maximum charge and discharge parameters are exceeded.
- The BMS is necessary to ensure performance and SAFETY. Each type of Lithium battery has its own BMS.
- The BMS consists of a group of sensors and an intelligent device (Microcontroller + Firmware) capable of monitoring and making decisions, which can limit parameters in the battery and take emergency measures.
- The main functions of the BMS are the following:
 - Charge Control (voltage, currents, and temperatures)
 - Discharge Control (voltage, currents, and temperatures)
 - Battery Pack Management
 - Cell Balancing
 - Determination of SOC (State of Charge) & SOH (State of Health)

Key Features of LiFePO4 Batteries:

- The maximum discharge current is limited by the BMS. The battery should never be discharged beyond its capacity in AH. If a current higher than the maximum capacity is demanded, the BMS will activate the protection system and shut down the battery.
- The maximum discharge time at maximum current is 1 hour. To obtain more time, additional batteries can be added in parallel.
- They can provide thousands of charge/discharge cycles (>6000 at 90% DOD).
- They suffer from little memory effect.
- They must be charged and discharged within the allowed temperature range (see sections 5 and 6).
- Very flat discharge voltage throughout the discharge process: from 53.9VDC to 48VDC.

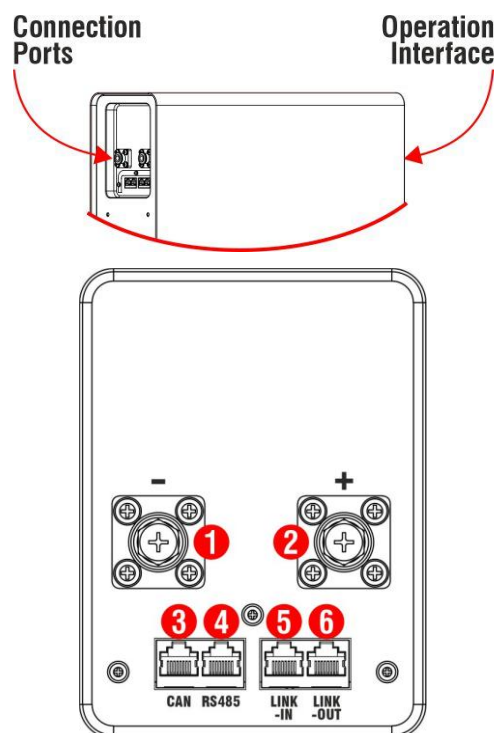
- Recommended shutdown voltage: 48VDC for all kinds of applications.

Parts Identification:

This battery includes Connection Ports on one side (for DC and Communication Cables) and an operation interface on the other, as shown by the image on the right.

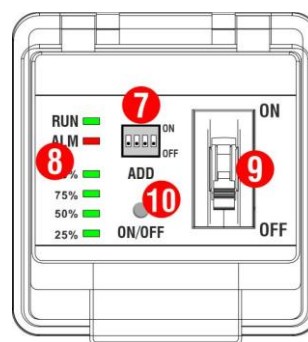
Connection Ports (Left View):

1. Port for **BATT-** Cable
2. Port for **BATT+** Cable
3. CAN Port (Reserved)
4. RS-485 Port (For communication with Xmart Inverters)
5. Link-In Port (For batteries in parallel)
6. Link-Out Port (For batteries in parallel)



Operation Interface (Right View):

7. Address Dip Switch (ADD)
8. Indicator LEDs
9. DC Breaker
10. ON/OFF Button



COMM. PORT	PIN OUT	DESCRIPTION
RS485 PORT PIN MAP Communication with Xmart Inverters	 8 7 6 5 4 3 2 1	- 1: RS485_B - 2: RS485_A - 3, 4, 5, 6, 7, 8: NC
LINK-IN/LINK-OUT PORTS PIN MAP Batter to Battery Communication		- 1, 2, 3, 4, 5, 6: NC - 7: RS485-2_A - 8: RS485-2_B

Operation Interface

Operation Interface of this battery consists of ON/OFF switch, DC Breaker, Address Dip Switch, and LEDs designed to display the state of charge (SOC), battery operation status (RUN), and alarms (ALM)

ON/OFF Button

The ON/OFF switch allows the battery to be turned on and off.

If the battery is not used for 24 hours (No Charge, no discharge, and no communication), it will enter Sleep Mode to save energy. If the battery detects any charging process or communication, it will automatically activate (wake up).

The battery can also be manually activated or turned off using the ON/OFF Button.

LEDS: ALARM, RUN & SOC

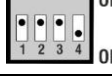
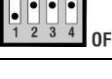
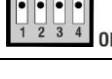
BATTERY STATUS	PROTECTIONS	LEDS						DESCRIPTION
		RUN	ALARM	SOC 100%	SOC 75%	SOC 50%	SOC 25%	
Shutdown	Inactive	OFF	OFF	OFF	OFF	OFF	OFF	Battery Off
Standby	Normal	Flash 1	OFF	According to Charge Level				Standby
	Alarm !!	Flash 1	Flash 2	According to Charge Level				Low Voltage
Charging	Normal	ON	OFF	According to Charge Level				---
	Alarm !!	ON	Flash 2	According to Charge Level				---
	Trip by Overcharge (Protection)	ON	OFF	ON	ON	ON	ON	LED pass to standby if no power supply is detected.
	Trip by Temperature or Overcurrent (Protection)	OFF	ON	OFF	OFF	OFF	OFF	Charging stops
Discharging	Normal	Flash 2	OFF	According to Charge Level				---
	Alarm !!	Flash 2	Flash 2	According to Charge Level				---
	Trip by Low Voltage (Protection)	OFF	OFF	OFF	OFF	OFF	OFF	Discharging stops
	Trip by Temperature, Overcurrent, Short Circuit (Protection)	OFF	ON	OFF	OFF	OFF	OFF	Discharging stops
Failure		OFF	ON	OFF	OFF	OFF	OFF	Charging or discharging processes stop

Flash 1: 0.25s ON / 3.75s OFF

Flash 2: 0.5s ON / 1.5s OFF

ADDRESS DIP SWITCH (ADD):

When connecting batteries in parallel, each battery must have a unique address defined by ADD Dip Switch, according to the following table:

ADD Setting	ID	ADD Setting	ID	ADD Setting	ID
 ON OFF	1	 ON OFF	2	 ON OFF	3
 ON OFF	4	 ON OFF	5	 ON OFF	6
 ON OFF	7	 ON OFF	8	 ON OFF	9
 ON OFF	10	 ON OFF	11	 ON OFF	12
 ON OFF	13	 ON OFF	14	 ON OFF	15

NOTES:

- Battery Module with ADD Setting=1 is the Master Battery Module, capable of communicating with the inverter.
- When installing one single battery, set ADD Switch to 1.

Terms Related to LiFePO4 Batteries
DOD (Depth of Discharge)

Defines the depth of discharge between 0% and 100%. Examples:

- 100AH Battery: discharges at 50A for 60 min. $DOD = [(60/60) \cdot 50] / 100 = 50\%$
- 100AH Battery: discharges at 100A for 60 min. $DOD = [(60/60) \cdot 100] / 100 = 100\%$
- 200AH Battery: discharges at 100A for 60 min. $DOD = [(60/60) \cdot 100] / 200 = 50\%$
- 200AH Battery: discharges at 200A for 60 min. $DOD = [(60/60) \cdot 200] / 200 = 100\%$

SOC (State of Charge)

Defines the charge level. Charge level between 0% and 100%

SOH (State of Health)

Defines the health or capacity of the battery compared to a new battery.

It is measured as a percentage: $SOH = Cc / Ci \times 100\%$

- Cc: Current Discharge Capacity of the current battery
- Ci: Current Discharge Capacity of a new battery

EOL (End of Life)

Defines the lifespan of the battery. A battery is considered to reach its end of life when its energy storage capacity significantly deviates from that of a similar new battery.

- Cc: Current Discharge Capacity of the current battery
- Ci: Current Discharge Capacity of a new battery.

NOTE: "EOL" DOES NOT MEAN THAT THE BATTERY CAN NO LONGER OPERATE, BUT THAT ITS PERFORMANCE DEVIATES FROM WHAT WAS EXPECTED WHEN IT WAS NEW.

3. STORAGE & TRANSPORTATION

- This kind of batteries should be stored in an environment with temperatures between -40°C and +60°C. However, the recommended temperature range is between 0°C and +40°C.
- Never store these batteries at temperatures above 60°C.
- Relative humidity should be kept between 10% and 90% (non-condensing).
- Keep this battery away from heat sources, such as heating systems.

LiFEPO4 51.2V/5.1KWh & 10.2KWh Batteries

- To maintain the batteries' state of charge at an optimal level, they should be recharged periodically:
 - Storage at 25°C: Recharge once every 6 months.
 - Storage at 40°C: Recharge once every 3 months.
- This product passes the certifications of the UN38.3 and belongs to class 9 dangerous goods.
- When shipped from the factory, SOC for this product is 50% due to transportation regulations for Lithium batteries. Fully charge the battery before first use.
- This battery can be delivered to the site directly and transported by land and water.
- The packing must be secured for transportation, compliant with related national standards, and printed with marks such as anti-collision and moisture prevention. Dispose of waste ESMs in strict accordance with local laws and regulations.
- Protect the packaged product from the following situations:
 - Being dampened by rain, snow, or falling into water
 - Falling or mechanical impact
 - Being upside-down or tilted

4. CONNECTION INSTRUCTIONS**WARNING:**

Strictly follow all the instructions in this section.

- NEVER CONNECT BATTERIES FROM DIFFERENT BATCHES. DO NOT MIX NEW AND OLD BATTERIES.
- ALL BATTERIES IN THE ARRAY MUST BE FULLY CHARGED (SOC 100%) BEFORE BEING CONNECTED.
- IF ANY OF THE BATTERIES IS NOT AT 100% SOC, IT MAY NOT RECHARGE PROPERLY AFTER BEING CONNECTED WITH THE REST OF THE BATTERIES.

These batteries can be connected in parallel, never in series. The maximum number of batteries that can be connected in parallel is 15 sets. Do not exceed this number, otherwise this will cause permanent damage to the batteries not covered by the warranty.

PARALLEL CONNECTION:

- BATTERIES CAN BE CONNECTED IN PARALLEL TO STORE AND PROVIDE MORE ENERGY.
- THE PURPOSE OF CONNECTING BATTERIES IN PARALLEL IS TO INCREASE BACKUP TIME.
- AS MORE PARALLEL CONNECTIONS ARE ADDED, THE POSSIBILITY OF IMBALANCES BETWEEN BATTERIES INCREASES. THESE IMBALANCES CAN RESULT IN SOME BATTERIES NOT DELIVERING 100% OF THE EXPECTED CURRENT. THEREFORE, IF THE MAXIMUM NOMINAL CURRENT IS DEMANDED FROM EACH PARALLEL UNIT, SOME UNITS MAY BE FORCED TO GENERATE HIGHER CURRENTS TO COMPENSATE FOR THE DEFICIT OF OTHER UNITS. THIS COULD TRIGGER THE BMS PROTECTION SYSTEM IN SOME BATTERIES.
- TO AVOID THE ABOVE SITUATION, IT IS RECOMMENDED TO REDUCE THE DISCHARGE CURRENT OF EACH BATTERY IN PARALLEL, AND THEREFORE THE TOTAL CURRENT, AS MORE PARALLEL BATTERIES ARE ADDED.
- BEFORE CONNECTING THE UNITS, MAKE SURE THAT VOLTAGES OF EACH INDIVIDUAL BATTERY ARE SIMILAR TO THE REST OF THE BATTERIES. THIS IS TO AVOID CURRENT SPIKES AT THE TIME OF CONNECTION. THE MAXIMUM VOLTAGE DIFFERENCE BETWEEN BATTERIES SHOULD BE LESS THAN 0.5VDC.

LiFePO4 51.2V/5.1KWh & 10.2KWh Batteries

AVAILABLE PARALLEL ARRANGEMENT AND MAX. DISCHARGE CURRENT.

MODEL	NOMINAL VOLTAGE OF THE ARRAY	NUMBER OF BATTERIES IN PARALLEL	MAX. DISCHARGE CURRENT OF THE ARRAY (AH)	AVERAGE CURRENT PER BATTERY (AH)
LIFEPO4 51.2V – 5KWh/100AH	51.2 V	1	100	100
		2	160	80
		3	240	80
		4	300	75
		5	350	70
		6	360	60
		7	385	55
		8	400	50
		9	450	50
		10	500	50
		11	550	50
		12	600	50
		13	650	50
		14	700	50
		15	750	50

MODEL	NOMINAL VOLTAGE OF THE ARRAY	NUMBER OF BATTERIES IN PARALLEL	MAX. DISCHARGE CURRENT OF THE ARRAY (AH)	AVERAGE CURRENT PER BATTERY (AH)
LIFEPO4 51.2V – 10KWh/200AH	51.2 V	1	200	200
		2	320	160
		3	480	160
		4	600	150
		5	700	140
		6	720	120
		7	770	110
		8	800	100
		9	900	100
		10	1000	100
		11	1100	100
		12	1200	100
		13	1300	100
		14	1400	100
		15	1500	100

IMPORTANT:

If the maximum total discharge current indicated in technical specifications is exceeded, the BMS protection system will be triggered, causing a total shutdown.

Batteries must communicate with BMS port of the inverter they power to guarantee a safe and balanced operation. When installed in parallel, it is mandatory that the Master battery communicates with the inverter and communication from battery to battery is obligatory,

It is important to calculate the total power consumption connected to the parallel battery array to ensure that the values provided by technical specifications are NEVER exceeded.

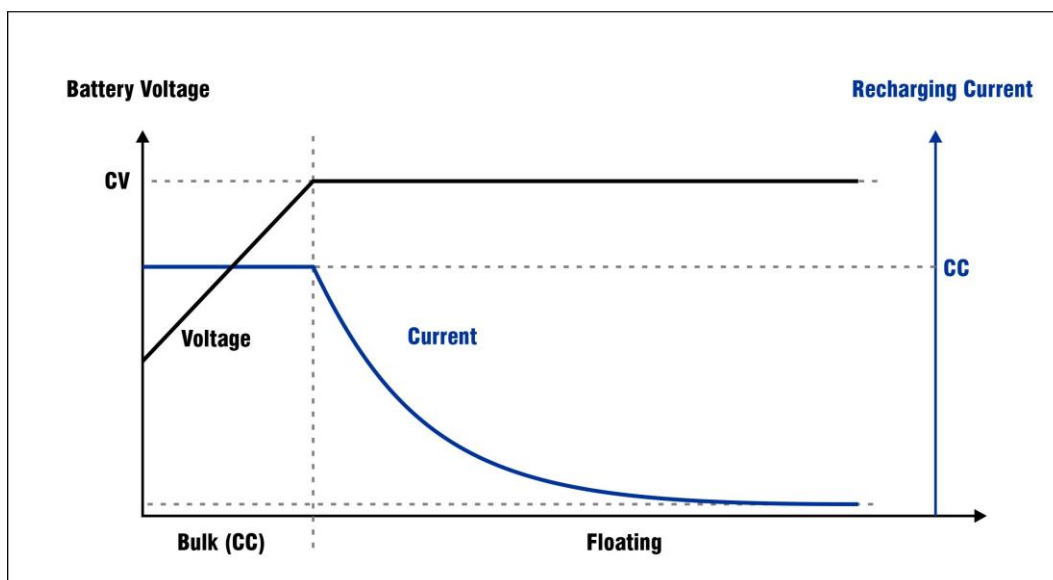
5. BATTERY RECHARGE

This kind of battery is designed to replace VRLA batteries, but it is mandatory that the chargers used to recharge these batteries have the appropriate technology (constant current chargers in the "bulk" phase) and must be configurable to adjust their charging parameters (voltages and currents) for this type of lithium battery.

Chargers for these batteries must have the following characteristics:

Constant voltage chargers are not recommended because they can generate peak currents due to the low impedance of the cells, interrupting the recharging process by triggering peak current or short circuit alarms. If this happens, a reset of the charger should be performed, and the process should be attempted again. Modern constant current chargers, of 2-phase type, are recommended:

- **Initial Stage (Bulk):**
Also known as Constant Current Stage. The charger holds a constant current output while the battery progressively increases its voltage until reaching the Max. recharge voltage and enters phase 2.
- **Final Stage: Maintenance (Floating)**
In this phase, the batteries are considered fully recharged. Charger holds a constant "Float" voltage, while charging current progressively tappers down to almost zero.



If there is communication between Battery and Inverter, the BMS will send Charge and Discharge parameters to inverter. If there is no communication between Battery and Inverter, Charge and Discharge parameters must be set on inverter. However, we strongly recommend communicating your battery with the inverter's BMS port (using the cable included in the package) so the battery operation can be as safe, stable, and reliable as possible.

RECHARGE VOLTAGES FOR XSMART LIFEPO4 51.2V2V – 5.1KWh/100AH & 10.2KWh/200AH BATTERIES

We strongly recommend communicating your battery with Inverter's BMS port, however if there is no communication with inverter, it is important to adjust the recharging voltages (Bulk and Floating) and the minimum discharge voltage in the inverter, as indicated below:

	SETTING VOLTAGE
Maximum Recharge Voltage (Bulk & Floating)	54.4Vdc
End of Discharge Voltage (Cut-Off)	48.0Vdc

Notes: Before installing batteries in parallel, it is mandatory to charge each one individually to 100% to assure integrity and prevent potential imbalances during recharging. Skipping this initial charge will cause imbalances that, over time, will move the batteries away from their optimal operating conditions.

Connecting batteries in parallel does not affect the charging voltages listed in the previous table, so the voltages must be configured in the inverter regardless of the number of batteries connected in parallel.

LiFePO4 51.2V/5.1KWh & 10.2KWh Batteries

CHARGING CURRENT FOR XSMART LIFEPO4 51.2V – 5.1KWh/100AH & 10.2KWh/200AH BATTERIES

The maximum charging current depends on the environment temperature. It is important to adjust the charger's maximum current depending on the site temperature. When in doubt or in environments with variable temperatures, it is recommended to be conservative and use the lower current.

Environmental Temperature (where the battery is located)	Max. Charging Current for each Battery in parallel	5KWh – 100A	10KWh – 200A
Between -20°C & 0°C	Charging NOT allowed	NOT Allowed	NOT Allowed
Between 0°C & 10°C	0.10C	10A	20A
Between 10°C & 15°C	0.20C	20A	40A
Between 15°C & 20°C	0.50C	50A	100A
Between 20°C & 25°C	0.75C	75A	150A
Between 25°C & 35°C	0.50C	50A	100A
Between 35°C & 55°C	0.20C	20A	40A
Over 55°C	Charging NOT allowed	NOT Allowed	NOT Allowed

Note: Charging current MUST NEVER exceed the discharge current. It is essential to follow this limitation to avoid recharging imbalances when batteries are connected in parallel. If the recommended charging current for the site's temperature is higher than the discharge current, the charger must be adjusted according to the values in the Discharge Current Table.

6. BATTERY DISCHARGE

For 5.1KWh/100AH model, the maximum discharge current is 100A.

For 10.2KWh/200AH model, the maximum discharge current is 200A.

The recommended minimum end-of-discharge voltage is 48 VDC.

This battery should never be discharged outside the allowed temperature range: -20°C to +55°C, although it is suggested to do so within the recommended operating range: 0°C to +55°C.

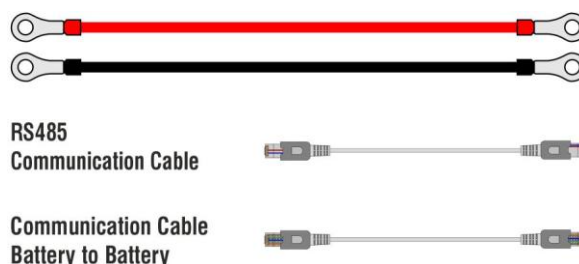
7. INSTALLATION

Unpack the battery and make sure it suffered no damage during transportation and that all installations accessories are included in the package. The following list shows all accessories.

LIFEPO4 51.2V – 5KWh/100AH - ACCESSORIES

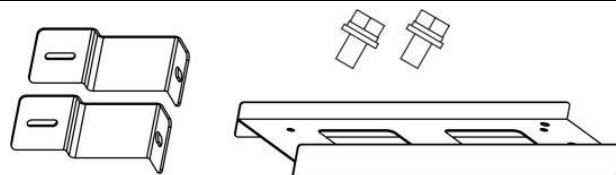
Cables

- 2 pcs power cable (**Black & Red**) **100A**, 25 mm2 flexible wire, SC25-M6 & SC25-M8, L=1.5m
- 1 RJ45 communication cable identified as: “**RS485 Comm. Cable. XSMART Inverter to LFP-WALL-51.2V**”
- 1 RJ45 communication cable identified as: “**Communication Cable Battery to Battery (Link In – Link Out)**”



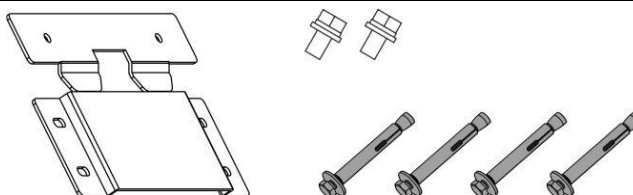
Accessories for Floor Mounting

- 1 Floor mounting Base
- 2 Floor Mount Bracket
- 2 pcs outer hexagon inner cross combination bolt M6X16mm screws



Accessories for Wall Mounting

- Wall mounting Bracket
- 4 pcs stainless steel expansion screws M8*100mm
- 2 pcs outer hexagon inner cross combination bolt M8X16mm screws



LiFEPO4 51.2V/5.1KWh & 10.2KWh Batteries

LIFEPO4 51.2V – 10KWh/200AH - ACCESSORIES

Cables

- 2 pcs power cable (**Black & Red**) **200A**, 50 mm² flexible wire, SC50-M8 & SC50-M8, L=1.5m
- 1 RJ45 communication cable identified as: **“RS485 Comm. Cable. XMART Inverter to LFP-WALL-51.2V”**
- 1 RJ45 communication cable identified as: **“Communication Cable Battery to Battery (Link In – Link Out)”**



RS485
Communication Cable

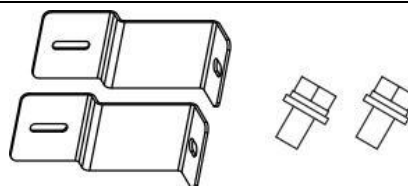


Communication Cable
Battery to Battery



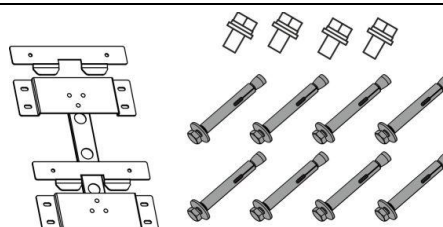
Accessories for Floor Mounting

- 2 Floor Mounting Bracket
- 2 pcs outer hexagon inner cross combination bolt M6X16mm screws



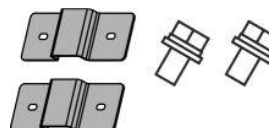
Accessories for Wall Mounting

- Wall mounting Bracket
- 4 pcs outer hexagon inner cross combination bolt M8X16mm screws
- 8 pcs stainless steel expansion screws M8*100mm



ADDITIONAL ACCESSORIES (PARALLEL INSTALLATION, ALL UNITS)

- 2 PCS Parallel Floor Mounting Bracket
- 2 pcs outer hexagon inner cross combination bolt M6X16mm screws

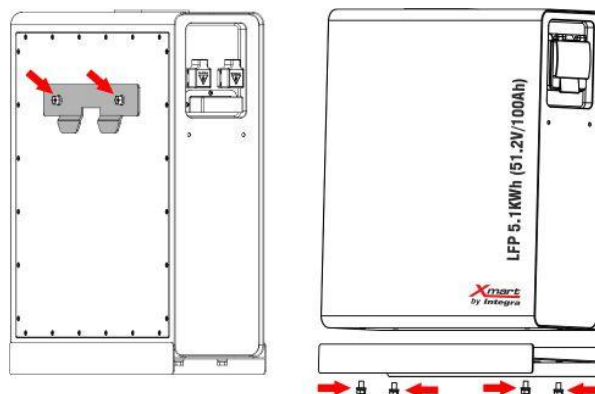


Installation Procedure:

1. Press ON/OFF button to turn on the battery, SOC and RUN indicators will light-up.
2. Turn on the DC Breaker to measure the output voltage by multimeter. For parallel application, make sure the voltage difference between all units is less than 500mV.
3. Press ON/OFF button to shut down the battery, the indicators will turn off.
4. Install the battery according to your requirements, using the following procedures:

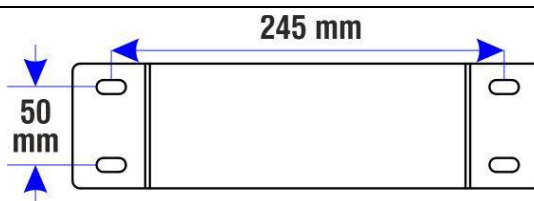
5KWh – Wall Mounting

- Fix the bracket to the battery using 2 M8X16mm bolts included with the battery.
- Remove the floor mounting base from the bottom of the battery.
- Look at the images on the right for reference. Red arrows point to screws.

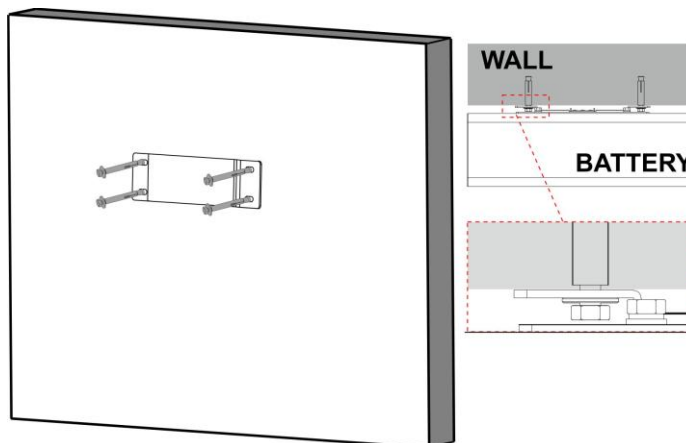


LiFEPO4 51.2V/5.1KWh & 10.2KWh Batteries

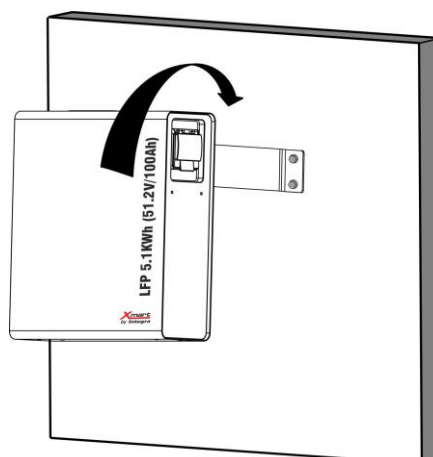
- Drill 4 $\phi 10$ *110mm holes on the wall
- The image on the right shows the details and dimensions of the bracket.



- Fix wall mounting bracket to the wall and fasten the screw head of the expansion bolts
- Use a proper hammer to fit the expansion bolt into the holes. The screw head protuberance could interfere with the battery cabinet.
- The image on the right shows details about fixing the bracket.

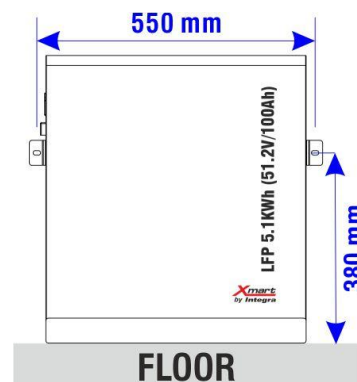


- After fixing the Bracket to the wall without head protuberance, use the bracket on the Battery Module to hang it to the Bracket on the wall.
- The image on the right shows the details about this action.

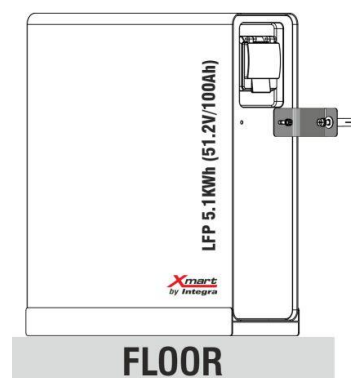


5KWh – Floor Mounting

- Fix the floor mounting brackets to the battery using 2 M6X16mm bolts included with the battery.
- Drill two holes on the wall according to the dimensions shown in the imagen on the right.

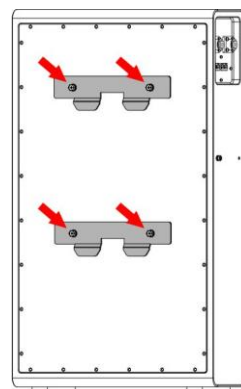


- Use 2 screws and raw plugs (not included) to fix the battery to the wall, to avoid it tilting.
- Look at the images on the right for reference.

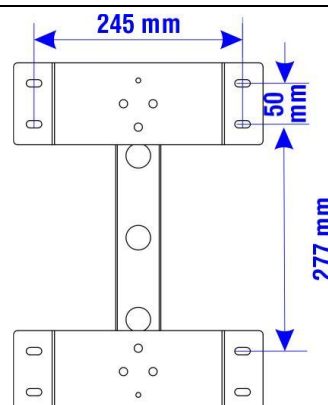


10KWh – Wall Mounting

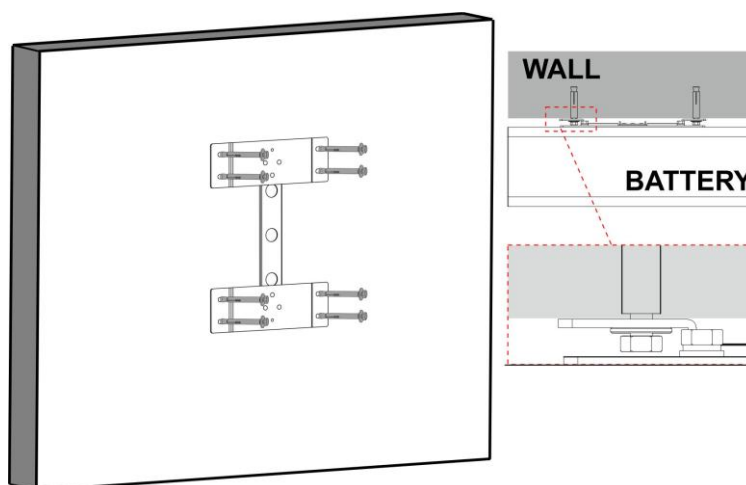
- Fix the bracket to the battery using 4 M8X16mm bolts included with the battery.
- Look at the image on the right for reference. Red arrows point to screws.



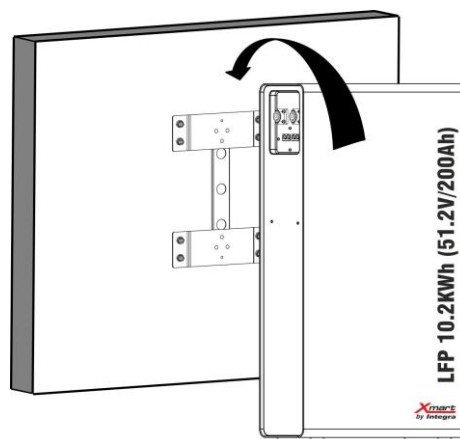
- Drill 8 pcs $\Phi 10 \times 110$ mm holes on the wall, according to dimensions in the image on the right.



- Fix wall mounting bracket to the wall and fasten the screw head of the expansion bolts.
- Use a proper hammer to fit the expansion bolt into the holes. The screw head protuberance could interfere with the battery cabinet.
- The image on the right shows details about fixing the bracket.

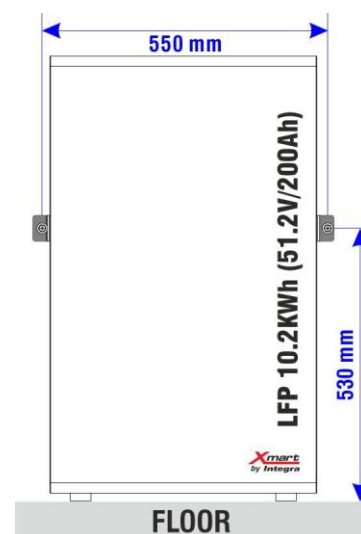


- After fixing the Bracket to the wall without head protuberance, use the brackets on the Battery Module to hang it to the Bracket on the wall.
- This battery is heavy (96Kg) be careful doing this operation.
- The image on the right shows the details about this action.

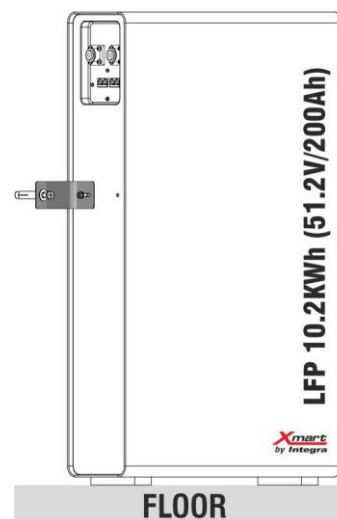


10KWh – Floor Mounting

- Fix the floor mounting brackets to the battery using 2 M8X16mm bolts included with the battery.
- Drill two holes on the wall according to the dimensions shown in the imagen on the right.



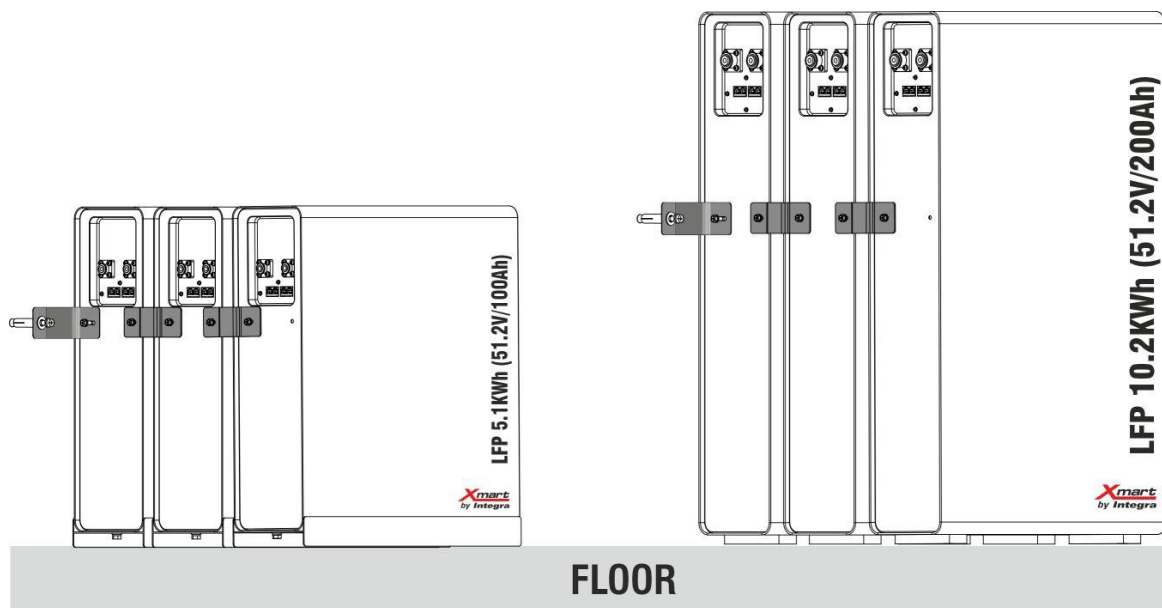
- Use 2 screws and raw plugs (not included) to fix the battery to the wall, to avoid it tilting.
- Look at the images on the right for reference.



Parallel Mounting

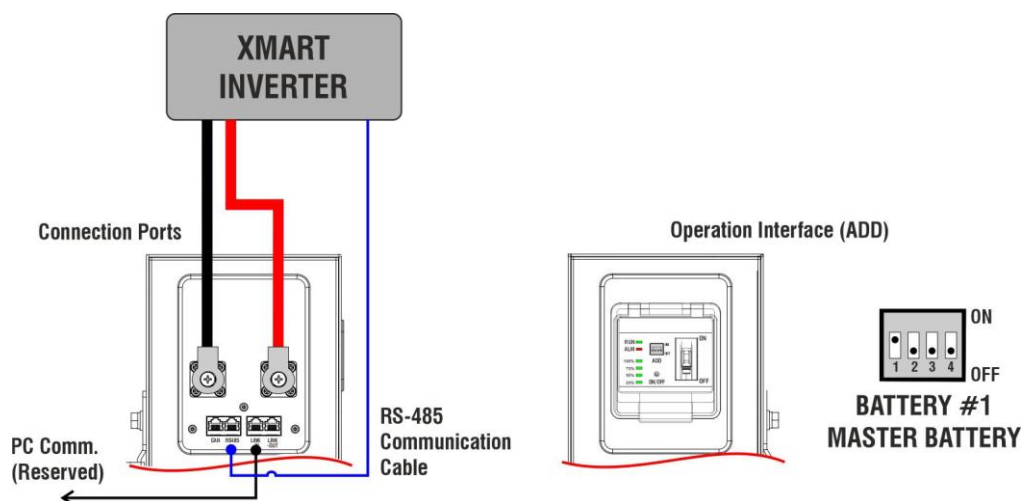
For Floor Mounting Parallel Connection, after fixing the first battery to the wall, fix all other batteries to the previous one using the Parallel Mounting Brackets, as shown in the next image.

LiFEPO4 51.2V/5.1KWh & 10.2KWh Batteries



Wiring – Single Inverter & Single Battery

The following procedure explains how to connect the battery and an Xmart inverter. For details about the inverter installation, refer to its User Manual.



- Make sure the battery breaker is in off condition.
- Make sure the inverter is correctly installed according to its own User Manual.
- Connect DC power cables from the batteries (**BAT+ & BAT-**) to inverter. Make sure the screws are tight.
- Set the battery module ID on ADD Dip Switch to 1. **This battery can communicate with the inverter.**
- Press the battery's ON/OFF button to activate the battery BMS.
- To establish communication between the Main Battery and the inverter, follow these steps:
 - o Locate the RJ45 cable labeled **"RS485 Comm. Cable. XSMART Inverter to LFP-WALL-51.2V."**
 - o Connect the RJ45 end labeled **"Battery"** to the RS485 port on the battery, identified as number 4 in the "Parts Identification" section of this manual.
 - o Connect the RJ45 end labeled **"Inverter"** to the BMS port on the inverter.
 - o Refer to **Annex 1** for detailed connection diagrams.
- Turn on the battery breaker, and the inverter will power on. Configure the Xmart inverter settings according to its User Manual. Ensure that the **Battery Type** selected on the Xmart inverter is set to **LIB**.
- If communication between the BMS and the Xmart inverter is successful, the **Li-Ion** icon should appear on the inverter's LCD. See **Annex 1** for more details about this icon.

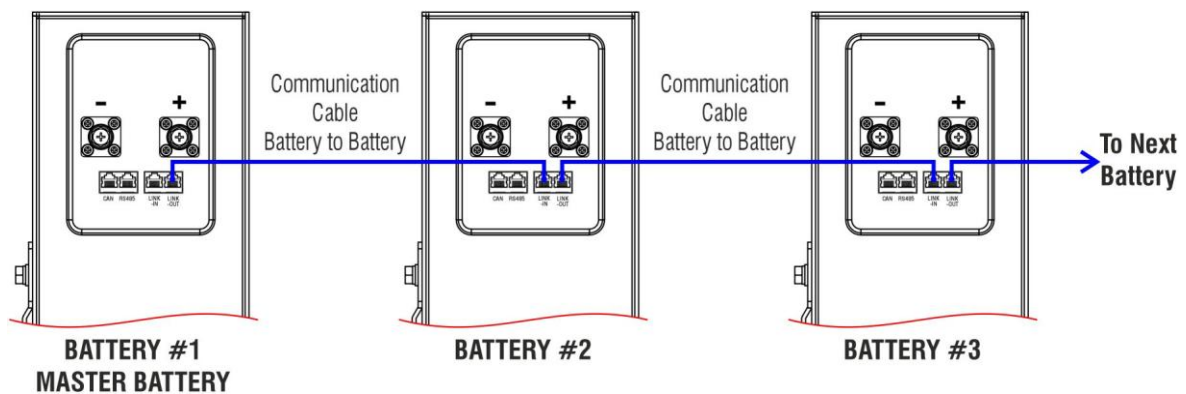
NOTES:

- **Charge the batteries fully on first use.**
- **For 5KWH batteries, M6 terminal of DC cables connects to the battery terminal, and the M8 terminal connects to the inverter.**
- **For 5KWH battery, Inverter's Capacity should not exceed 5KVA and the load power consumption should not exceed 5KW.**
- **For 10KWH battery, Inverter's Capacity should not exceed 10KVA and the load power consumption should not exceed 8KW.**
- **Make sure all cables are properly sized.**

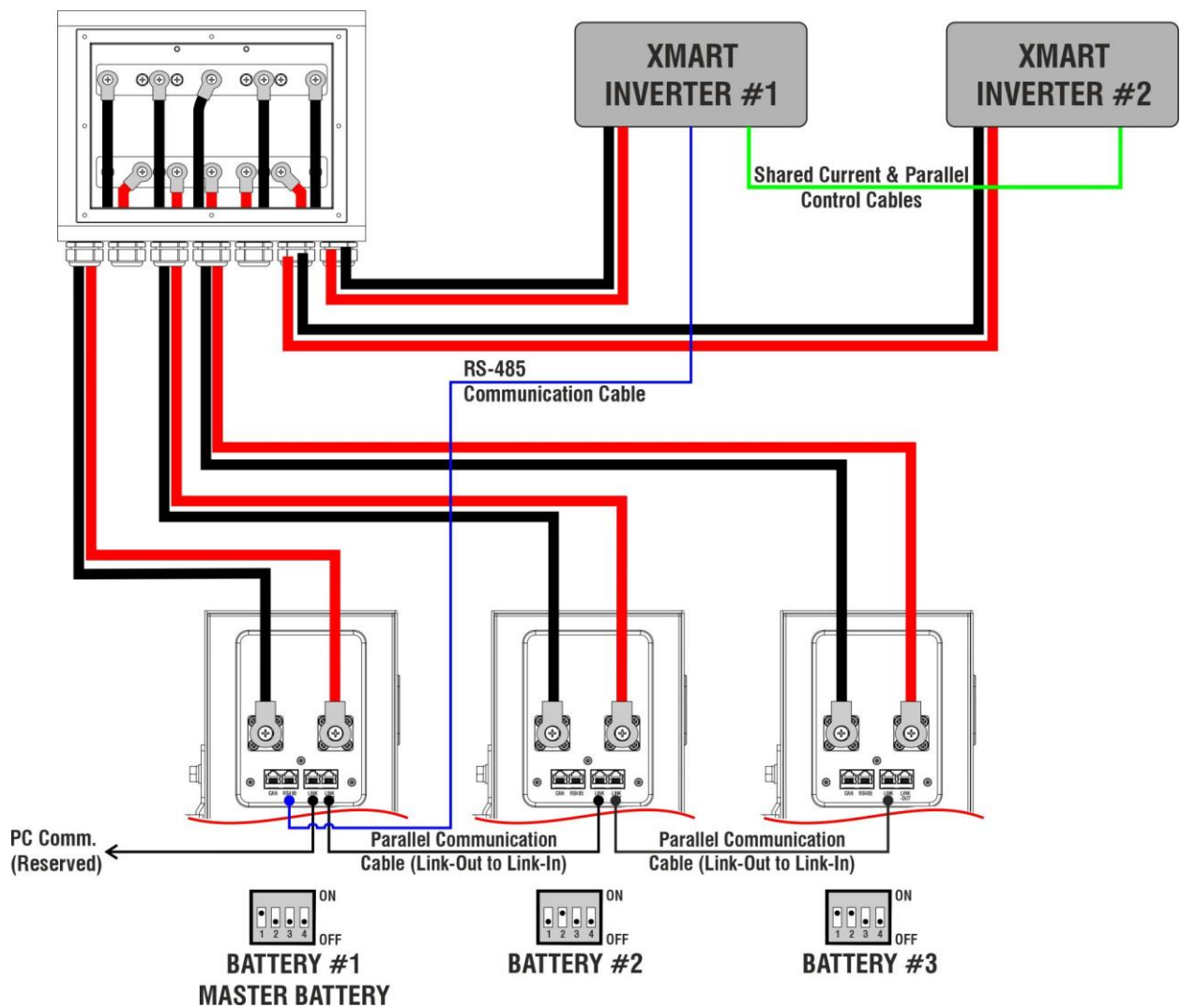
Wiring – Multiple Inverters in parallel & Multiple Batteries in Parallel

The following procedure explains how to connect a Parallel Array of batteries to a Parallel Array of Xmart inverters. For details about the installation of the inverters, refer to the inverters User Manual.

- Before connecting DC Power Cables from batteries to the Distribution Box, set their DC Breaker to On, measure their voltages and make sure there are no differences over 0.5Vdc between them.
- Make sure Xmart inverters are correctly installed, according to their own User Manual.
- Set all battery DC Breakers to off condition.
- Connect DC power cables from the batteries (**BAT+** & **BAT-**) to a Distribution Box.
- Connect **BAT+** and **BAT-** from the Distribution Box to the inverter. Make sure the screws are tight.
- Set a different ID to each battery module on ADD Dip Switch. Make sure any ID Core is repeated.
- **Only Battery Module with ID Code=1 can communicate with the inverter. This is the Master Battery.**
- Press the ON/OFF button on all battery modules to activate their BMS.
- Using the RJ45 cables labeled “**Communication Cable Battery to Battery (Link In – Link Out)**” included with each battery, connect the **Link-Out** port of the Main Battery (ID=1) to the **Link-In** port of the battery with ID=2. Then, connect the **Link-Out** port of that battery to the **Link-In** port of the battery with ID=3, and so on, until all batteries are connected. Refer to the image below for guidance.



- To establish communication between the Main Battery (**Master**, ID=1) and the Xmart inverter:
 - o Locate the RJ45 cable labeled “**RS485 Comm. Cable. XMART Inverter to LFP-WALL-51.2V**”
 - o Connect the RJ45 Terminal labeled “**Battery**” to the RS485 port on the battery, identified as number 4 in the “**Parts Identification**” section of this manual.
 - o Connect the RJ45 Terminal labeled “**Inverter**” to the BMS port on the inverter.
 - o Check all details in **Annex 1**.
- Turn on the circuit breakers of all batteries; the inverters will power on. Configure the inverter parameters according to their User Manual. Make sure the **Battery Type** set on the inverter is **LIB**.
- If communication between the Main Battery’s BMS and the Xmart Inverter is successful, the **Li-Ion** icon should appear on the inverter’s LCD. Refer to **Annex 1** for all details.
- The following image shows the details of all DC and communication cable connections in the installation.



NOTES:

- Although Distribution Box is optional, we strongly recommend using it.
- We also strongly recommend installing Breakers in DC Lines between the Distribution Box and the Inverters installed in parallel.
- For 5KWH batteries, M6 terminal of the DC cables connects to the battery terminal, and M8 terminal connects to the Distribution Box.
- Charge the batteries fully on first use.
- Make sure all cables are properly sized.
- The length of all cables between Battery Modules and Distribution Box should be the same. Also cables from Distribution Box to Inverters should be the same.

LiFePO4 51.2V/5.1KWh & 10.2KWh Batteries

8. TECHNICAL SPECIFICATIONS

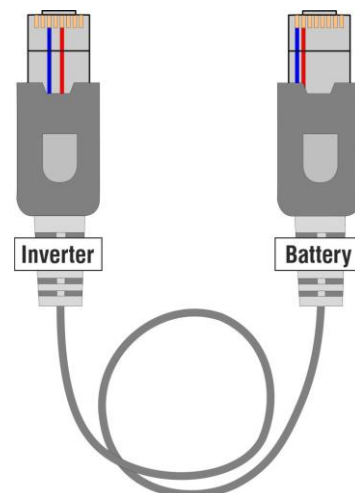
BATTERY MODULES LFP 51.2V	BM-LFP-WALL-5KWH-51.2V	BM-LFP-WALL-10KWH-51.2V
Mounting Type / Tipo de Montaje	Wall & Floor / Pared y Suelo	
Battery Cables / Cables de Batería	2 (Black & Red) 25 mm2, L=1500mm. Terminals: SC25-M6 (Batt) & SC25-M8 (Inverter)	2 (Black & Red) 50 mm2, L=1500mm. Terminals: SC50-M8 (Batt) & SC25-M8 (Inverter)
Battery Type / Tipo de Batería	LiFePO4	
ELECTRICAL SPECIFICATIONS / ESPECIFICACIONES ELÉCTRICAS		
Nominal Voltage / Voltaje Nominal (VDC)	51.20	
Charging Voltage / Tensión de Recarga (VDC)	56.00	
End of Discharge Voltage / Tensión de Fin de Descarga (VDC)	48.00 (Any App / Cualquier Aplicación)	
Overvoltage Protection / Protección Sobrevoltajes (VDC)	58.40	
Overvoltage Return / Desactivación de Sobrevoltajes (VDC)	54.08	
Undervoltage Protection / Protección Contra Subtensión (VDC)	44.80	
Undervoltage Return / Desactivación de Subtensiones (VDC)	46.40	
Nominal Current / Corriente Nominal (Ah)	100	200
Total Energy / Energía Total (Wh)	5120	10240
Max Charging Current / Corriente Max de Recarga (A)	100	200
Recommended Charging / Recarga Recomendada (A)	50	100
Max Discharging Current / Corriente Max de Descarga (A)	100	200
Peak Current / Corriente Pico Max. (A)	110 (10 min.) 120 (10S)	210 (10 min.) 220 (10S)
DIMENSION & WEIGHT / DIMENSIONES Y PESO		
Dimensions / Dimensiones (mm)	520*165*566	520*165*865
Weight / Peso (Kg)	50	96
OPERATION SPECIFICATIONS / CONDICIONES OPERATIVAS		
Humidity / Humedad Relativa (%)	Operation: 0 - 95, Non condensing / Operación: 0 - 95, No Condensante Storage: 10 - 90, Non condensing / Almacenamiento: 10 - 90, No Condensante	
Operating Temperature / Temperatura de Operación (°C)	Charge: 0 to +55 / Carga: 0 a +55 Discharge: -20 to +55 / Descarga -20 a +55 Storage: -40 to +60 / Almacenamiento: -40 a +60	
Life in Cycles / Tiempo de vida en ciclos de Carga/Descarga	> 6000 (N)	
Life in Years / Tiempo de vida en años	10	
SAFETY & STANDARDS / NORMATIVAS Y ESTANDARES		
Safety Certification / Certificación de Seguridad	CE, MSDS, ROHS, UN38.3	
IP Class / Clasificación IP	IP 54	IP 65
COMMUNICATION & CONNECTIONS / COMUNICACIÓN Y CONEXIONES		
Communication / Comunicación	Inverters / Inversores: RS485, CAN Battery to Battery / Batería con Batería: Link-In · Link Out Ports	
Parallel / Conexiones Paralelas	Up to 15 sets / Hasta 15 baterías	
Series / Conexiones en Serie	Not allowed / No soportadas	
Protections / Protecciones (BMS)	Over and Under Voltage, Over Current, Over and Under Temperature / Altos y Bajos Voltajes, Altas y Bajas temperaturas, Sobrecorrientes	
Technical specifications can be modified to comply to special requirements / Las especificaciones pueden adaptarse a proyectos especiales, bajo requerimiento		
Technical specifications may change without further notice / Por motivos comerciales o técnicos las especificaciones pueden cambiar sin previo aviso.		
(*N): 90% DOD & 70% EOL. @25°C. Discharge: 0.5C / Recharging: 0.5C		

ANNEX 1. COMMUNICATION WITH INVERTERS

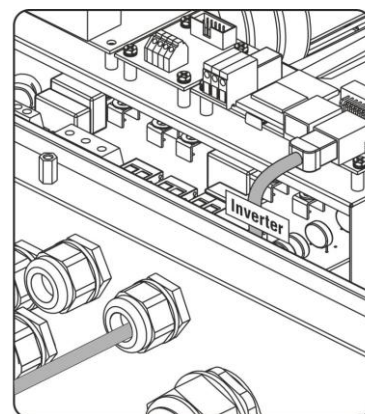
The RJ45 cable included with your battery and labeled “**RS485 Comm. Cable. XMART Inverter to LFP-WALL-51.2V**” is designed to establish communication with the BMS port of Xmart solar inverters, enabling safe and intelligent operation.

To the right is the **RS485 Comm. Cable. XMART Inverter to LFP-WALL-51.2V**.

As shown, one of the RJ45 connectors is labeled “**Inverter**”, this terminal must be connected to the BMS port on the Xmart inverter. The other connector, labeled “**Battery**”, must be connected to the RS485 port on the battery. If the connection is not made in this order, communication will fail, and the inverter will not be able to coordinate operation with the battery’s smart BMS.

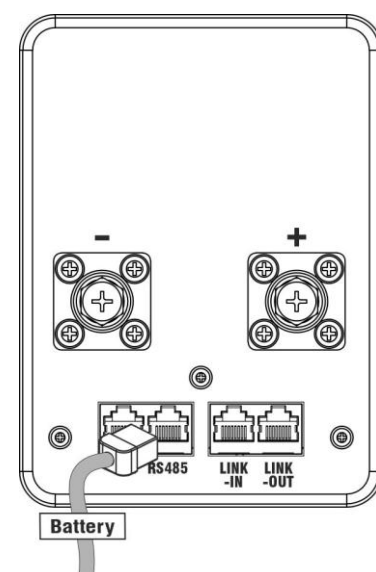


As a reference, the image on the right shows the “**Inverter**” connector of the communication cable plugged into the **BMS** port of Xmart inverters model **XSI-2PLV-6K/10K**.

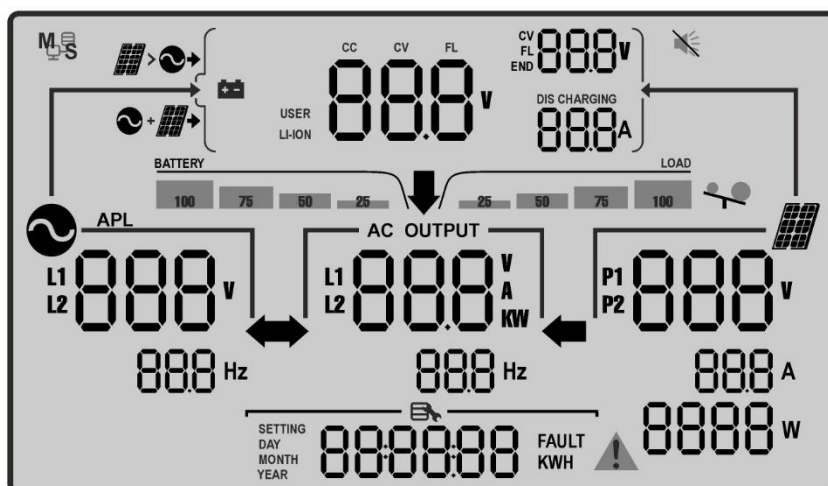


The “**Battery**” connector must be connected to the RS485 port on the battery, as shown in the image on the right.

This port is located on the left panel of the battery, as described in the **PARTS IDENTIFICATION** section, under **Connection Ports**, where it is labeled as item #4.



For XSI-2PLV-6K/10K inverters, once successful communication is established with the battery’s BMS, icon **LI-ION** will light up on the screen to indicate it. The image below shows the location of this icon on the LCD:

LiFEPO4 51.2V/5.1KWh & 10.2KWh Batteries

If communication with the battery's BMS is interrupted, two things will happen:

- The **LI-ION** icon on the inverter's LCD would turn off.
- Alarm 61 would be displayed. Details can be found in the inverter manual, under **ANNEX 8: ALARM CODES, ERRORS, AND KNOWN ISSUES**.

NOTES:

If there are inverters operating in parallel, it is essential to consult the inverter manual to ensure that the communication cable is connected to the proper inverter.

Communication between these batteries and the inverter is always necessary and highly recommended to ensure safe and reliable battery operation, as well as to achieve optimal service life. However, in systems with batteries operating in parallel, communication is essential to prevent imbalances and to ensure the above-mentioned benefits.