User Manual

Residential Energy Storage Battery

Type: BLF-12100N2/12200N2/24100N2/12280N2









BLF-12100R21001/ BLF-12200R21001/ BLF-24100R21001/ BLF-12280R21001

BLF series Battery

BLF-12100N2/12200N2/24100N2/12280N2



1. Important Safety Instructions

1.1 Work and storage precautions:

(1) Ensure the battery is stored in a cool, dry environment, shielded from corrosive substances, explosives, insulating gases, and conductive debris. Additionally, keep it distant from heat sources, open flames, or high voltage equipment. Avoid submerging the battery in water and ensure it is securely kept away from children's reach. Prevent exposure to static electricity, as it may impair the battery's protective circuit and lead to damage.

(2) Ensure the battery is securely fastened in a suitable environment and establish a reliable connection with the connector to prevent arcs or sparks resulting from improper contact or friction.

(3) Handle the battery with care to prevent vibrations, impacts, and pressure shocks, as these can lead to short circuits, which may result in overheating and potential fire hazards.

(4) Avoid battery short circuits and refrain from disassembling the battery to prevent any hazardous situations.

(5) Maintain the battery at a midpoint charge level, ideally between



40% and 80% State of Charge (SOC). Ensure the battery is wrapped in non-conductive materials to prevent direct metal contact, which could potentially harm the battery.

(6) Safely dispose of used batteries, ensuring they are neither placed in fire nor exposed to liquids.

1.2 Hazard warning:

⚠ WARNING

(1) Take precautions to prevent skin or eye contact with leaked electrolyte. Should contact occur, promptly rinse affected areas thoroughly with water and seek medical attention immediately. It is strictly prohibited for any person or animal to ingest any component of the battery or its contents.

⚠ DANGER

(2) In the event of severe battery deformation or electrolyte leakage, the battery should, if possible, be placed in an explosion-proof container or a well-ventilated open area. All personnel should promptly evacuate the vicinity.

NOTICE

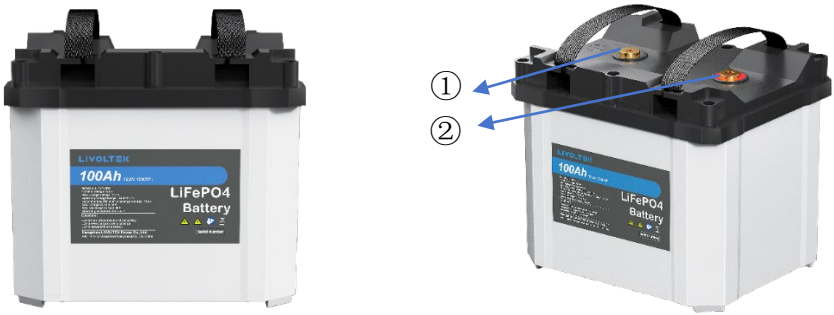
(3) In the unlikely event of a battery fire during usage or storage,

utilize a high-pressure water jet to extinguish the flames, always prioritizing personal safety.

(4) Should a battery ignite during charging, immediately disconnect the charger from its power source before proceeding with fire extinguishing measures.

2. Appearance

BLF series battery appearance is shown below：



BLF-12100N2

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BLF-12200N2





BLF-24100N2

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BLF-12280N2

① **Lithium battery negative terminal**

② **Lithium battery positive terminal**

Note: The picture only shows the positions of the positive and negative poles. The actual appearance shall prevail.



3. Charging Operation

3.1 General Checking.

(1) Conduct a comprehensive inspection of all cables to ensure they are free from damage.

(2) Verify that the mains power supply meets both the charger's and the battery's specified requirements.

3.2 Turn off the charger and connect it to the battery

⚠ WARNING

Prior to connecting to the charger, carefully verify the battery's polarity.

Reverse connection of the battery is strictly prohibited.

Standard charge:

E.g., BLF-12100N2: First, charge the battery to 14.4V with a constant current of 50A (0.5C), and then charge to 0.05C with a constant voltage of 14.4V (i.e. 0.05C means 0.05 x battery capacity. If the battery capacity is 120Ah, the cut-off current is 120A*0.05).

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Model	Step1	Step2	Note
BLF-12100N2	0.5C	14.4V 0.05C	
BLF-12200N2	0.5C	14.4V 0.05C	
BLF-24100N2	0.5C	28.8V 0.05C	
BLF-12280N2	0.5C	14.4V 0.05C	

Note: All tests stated in this document shall be performed at 25±2℃.

It is recommended to charge the battery in an environment above 15 ℃, charge at 0.2C below 15 ℃, and prohibit charging below 0 ℃.

4. Discharging Operation

4.1 Prior to initiating discharge, confirm that the load and associated equipment are switched off.

4.2 Ensure the battery is properly connected to the load and equipment.

⚠ WARNING

Prior to connecting the battery to the load and equipment,



meticulously confirm the polarity. Reverse polarity connection is strictly forbidden.

Standard discharge:

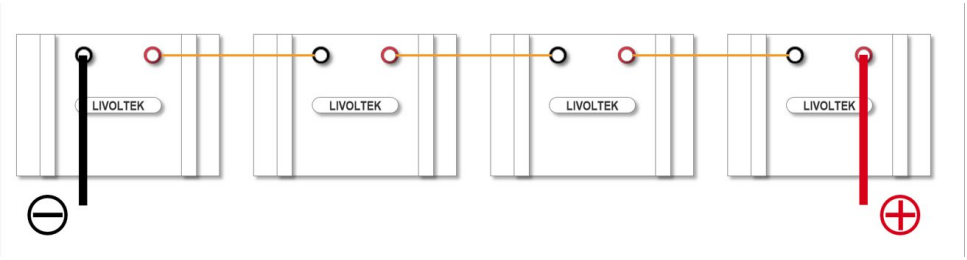
After the battery is standard charged, discharging the battery with a constant current below 0.5C till the battery voltage drops to 10V. (BLF-24100N2: 20V)

Model	BLF-12100N2	BLF-12200N2	BLF-24100N2	BLF-12280N2
Maximum Continuous Discharge Current(A)	80	160	80	224

Note: All tests stated in this document shall be performed at 25±2℃. The rate of discharge can be not limited, but the low temperature may cause the problem of short discharge time and low discharge capacity.

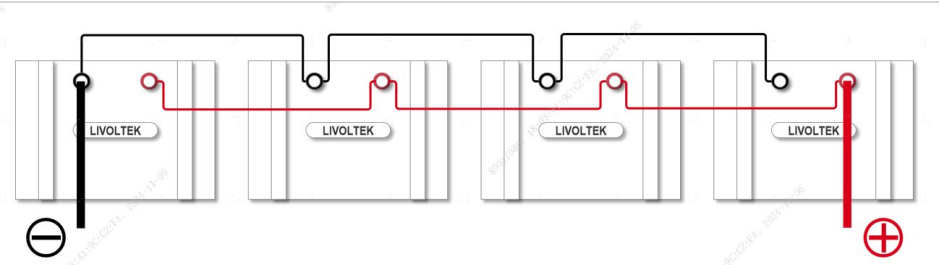
5. Connect in Series/Parallel

5.1 Connect in series (at most 4 pcs)



Note:The picture only shows the positions of the positive and negative poles. The actual appearance shall prevail.

5.2 Connect in parallel (at most 4 pcs)



Note:The picture only shows the positions of the positive and



negative poles. The actual appearance shall prevail.

⚠ WARNING

When connecting batteries in series or parallel, use a multimeter to measure the voltage of each battery. Ensure voltages are consistent, with a difference of no more than 0.4V between any two batteries (minor sparking during parallel connection setup is commonplace and not a concern). Do not proceed with series or parallel connections if the voltage discrepancy exceeds this threshold.



6. Disclaimers

6.1 Ensure the use of Lithium Iron Phosphate (LFP) batteries adheres strictly to product specifications. Deviating from these guidelines may result in battery fires or unwanted expansion.

6.2 Performance and safety of the batteries cannot be guaranteed unless they are operated strictly within the specified product parameters.

6.3 Damage to battery performance due to incorrect usage or storage practices is not included in the warranty coverage.

6.4 Premature expiration of the battery may occur when its cycle life reaches the end of the specified limit outlined in the product specification.

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7. Specifications

Model	BLF-12100 N2	BLF-12200 N2	BLF-24100 N2	BLF-12280 N2
Nominal Voltage(V)	12.8 V	12.8 V	25.6 V	12.8 V
Operating Voltage Range(V)	10.0~14.4	10.0~14.4	20.0~28.8	10.0~14.4
Rate Capacity(Ah)	100 Ah	200 Ah	100 Ah	280 Ah
Total Energy(KWh)	1.28 KWh	2.56 KWh	2.56 KWh	3.58 KWh
Rated Continuous Charge/Discharge Current(A)	50/50	100/100	50/50	140/140
Maximum Continuous Charge/Discharge Current(A)	50/80	100/160	50/80	140/224
Series/parallel system	4 series/4 parallel	4 series/4 parallel	2series/4 parallel	4 series/4 parallel
Depth of Discharge	100%			
Operating Temperature (℃)	Charge: 0~55℃ ; Discharge: -20~55℃			
Storage Temperature (℃)	Short Term (within 3 Months): -20~45℃ ; Long Term (within 6 Months): 15~35℃			
Operating Humidity	5%~95%, No condensation			

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Operating Altitude	< 4000m			
Cooling Type	Natural			
Protection Rating	IP 54			
Terminal	M8 * 14			
Communication	None			
Cycle Life	6000 Cycles(25℃,0.2C@90% DOD， 70%SOH)			
Warranty	3 Years			
Dimensions(mm) （**±1mm**）	246*203* 215	364*253* 265	364*253* 265	364*253* 265
Weight(kg)	9.5±1	18.5±1	18.5±1	25.9±1

Any changes without prior notice!

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