

LiFePO4 Energy Storage Lithium Batter Basic Knowledge

Edited by www.kemapower.com, 202403

1. Lithium Battery Cell classify

1.1 Cell Material difference(positive):

Lithium titanate, lithium cobalt oxide, lithium manganate, lithium iron phosphate, nickel cobalt manganese and nickel cobalt aluminum

Energy Storages, usually select lithium iron phosphate (**LiFePo4**) and Ternary lithium battery

Home Solar power, lithium iron phosphate is more poplar.

1.2 Three Shape Cell Shell

any kind of material which can select the following any kind of shape shell



Square/Shell/
Max around 200Ah/cell



Round/Shell
Max around 6AH/Cell

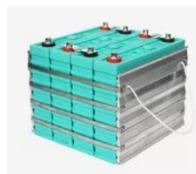


Soft package battery
Max around 20Ah/Cell

Energy Store: usually Square and Round Cell

1.3 Battery Pack construction

LifePo4 battery construction: Cell + BMS + Shell
inside Cell connection



BMS PCB



2. Battery Pack Shell

usually there are 5 Kinds of Shell battery Pack

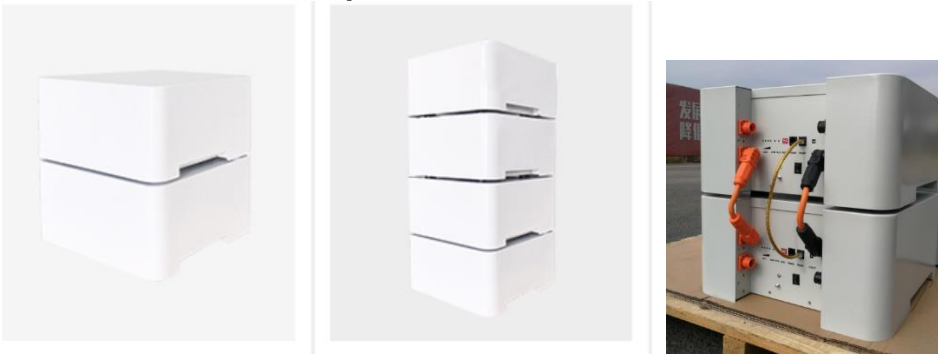
2.1 Rack module design

Module design, Expend bigger by parallel



Popular mode: 48/51.2VDC or 25.6VDC 50AH,100AH 200AH 300Ah per Module
Parallel is option

2.2: Module Tower shape



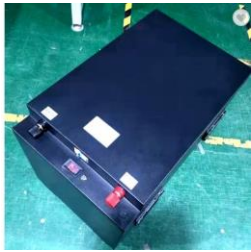
Iron or plastic cabinet, easy to parallel

2.3 Wall mounting Module design (Powerwall)



Popular mode: 48/51.2VDC or 25.6VDC 50AH,100AH 200AH 300Ah per Module
Parallel is option

2.2: iron one package design



48VDC or bigger VDC

Feature: Cheap, easy to arrange, Cheap/Easy to change For project



12V or 24VDC imitate AGM battery shape

2.4 AGM battery Shape/ ABS Plastic box, Lead-acid alternative



12VDC,24VDC different capacity, there are standard unit like as AGM battery
Max 48VDC 200AH

2.5 PVC one package design

12V,24V 48VDC within 100AH

Usually put into the other iron cabinet

Feature: Cheap, easy to ODM, One package design, cannot parallel



3. 6 Points Knowledge about How to Select Battery

- 3.1 the BMS use to protect battery will not Over **Charge/ discharge / Temp.** need to confirm the charge and discharge Current before select battery.
- 3.2 same VDC and AH battery pack, the BMS maybe not same for the Max Charge/discharge Current reason .so price maybe not same too
- 3.3 same mode battery pack do not advice series freely as Lead Acid Battery when you need series or parallel connection, pls study manual or check with supplier. because the different BAT has its own BMS. when different BAT VDC is capacity difference maybe bring problem.
- 3.4 When need series or parallel battery pack need to mention before order
- 3.5 Did not advice New Module and Old Module to parallel to use to expend the backup time
- 3.6 Same Capacity battery price will be difference for the Cycle life grade difference reason
- 3.7 this moment, LFP-ABS **Lead-acid alternative LiFepO4 Battery Max series to 48VDC**