Drypower

LITHIUM IRON PHOSPHATE LiFePO4

RACK MOUNT LITHIUM

51.2V | 100Ah | $LiFePO_4$ | 5.12kWh

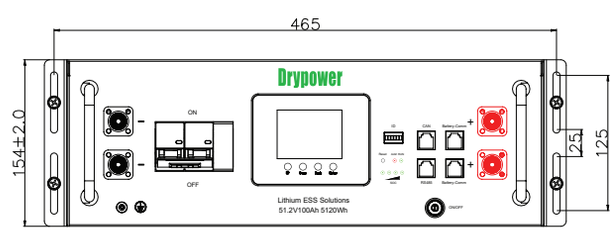
DP-51100-R

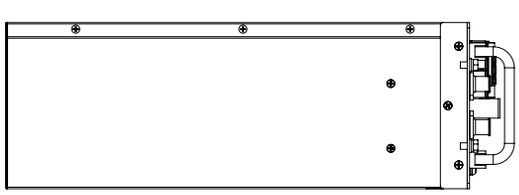
Rechargeable Lithium Iron Phosphate Battery

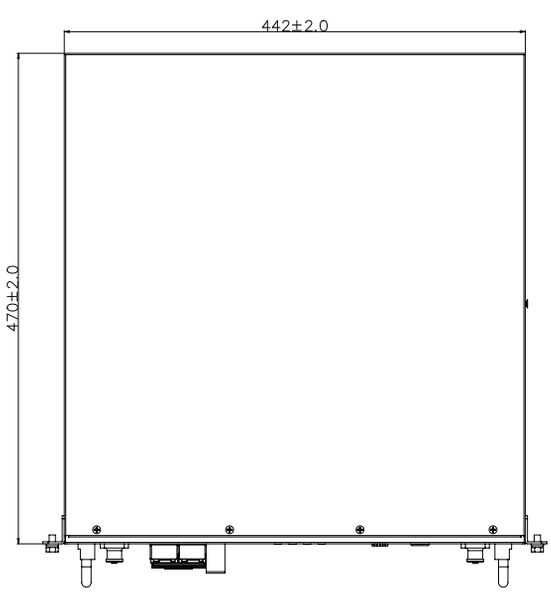
SPECIFICATIONS

Size	4RU
Nominal Voltage (25°C)	51.2V
Nominal Capacity (0.2C)	100Ah
Watt-hour	5.12kWh
Weight	45.0 kg
Internal Resistance (at 1KHz)	<17.5mΩ
Charge @25°C	
Recommended Charge Current	50A
Maximum Charge Current	100A
Recommended Charge Voltage	56.0V
Max Charge Voltage	57.0V
Discharge @25°C	
Standard Discharge Current	50A
Max. Continuous Discharge	100A
Cut-off Voltage	44.8V
Cell Used	LiFePO4 ETC 3.2V 100Ah
Assembly	16S1P
BMS	Voltage, current, temperature management & cell balance
Cycle Life (0.5C to 80% DoD)	>6000 cycles (25°C)
Operating Temperature	
Charge	0°C ~ +50°C
Discharge	–20°C ~ +55°C
Storage	–20°C ~ +55°C
Case Material	Powder coated steel
Fire Suppression	YES (In-Built)
Termination	Amphenol Surlok SLPHIR
Communications	CAN, RS485
Ingress Protection	IP20
Series Connection	No
Parallel Connection	Up to 64 units
Design Life	>15 years (25°C)
Barcode	9319632530795

DIMENSIONS (mm)







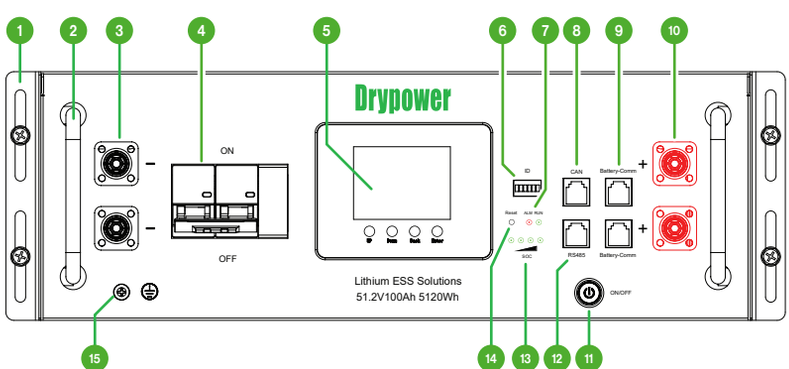
BATTERY MANAGEMENT SYSTEM (BMS)

Item		Parameters		Condition
Charge	Cell voltage protection	3.8V	Delay 1s	Recovery at 3.45V
	Module voltage protection	60.0V	Delay 1s	Recovery at 55.2V
	Over charging current 1	> 102A	Delay 20s	
	Over charging current 2	≥ 120A	Delay 3s	
	Temperature protection	< -5°C or >70°C	Delay 1s	Recover when >0°C or <60°C
Discharge	Cell end-off voltage	2.3V	Delay 1s	Recovery at 3.1V
	Module end-off voltage	44.8V	Delay 1s	Recovery at 48.0V
	Over discharging current 1	> 102A	Delay 30s	Recovery in 60s
	Over discharging current 2	> 150A	Delay 3s	Recovery in 60s
	Short circuit	> 300A	Delay 0.1mS	
	Temperature protection	< -20°C or >75°C	Delay 1s	Recover when >-10°C or <65°C
BMS	PCB Temp Protection	>105°C	Delay 1s	Recover when <80°C
	Cell Balance	120mA	Passive balance	Cell voltage difference > 40mV
	Temperature Accuracy	3%	Cycle measurement	Measuring range -40~100°C
	Voltage Accuracy	0.5%	Cycle measurement	For cells and module
	Current Accuracy	3%	Cycle measurement	Measuring range -200~+200
	SOC	5%		Integral calculation
	Power Consumption with Different Condition	<300uA	Switch-off mode	Storage & transportation
		<20mA	Operating mode	Charging & discharging
		CAN, RS485		Protocol can be customised
	Communication Ports	CAN, RS485		Protocol can be customised

The BMS provides complete management and protection for the battery.

- Voltage warning and protection for module and each single cell.
- Current warning and protection.
- Temperature warning and protection, 4 sensors for battery pack and 1 sensor for BMS.
- Battery module SOC calculation, display the accurate battery status.
- Communicate with inverter or PC monitor, report the battery data.
- Switch-off mode, sleep mode, and operating mode, different mode for different condition.

PANEL DESCRIPTION



Leave a space for an M5 screw here for electrical grounding.
The internal threads must be protected from baking/heat treatment.

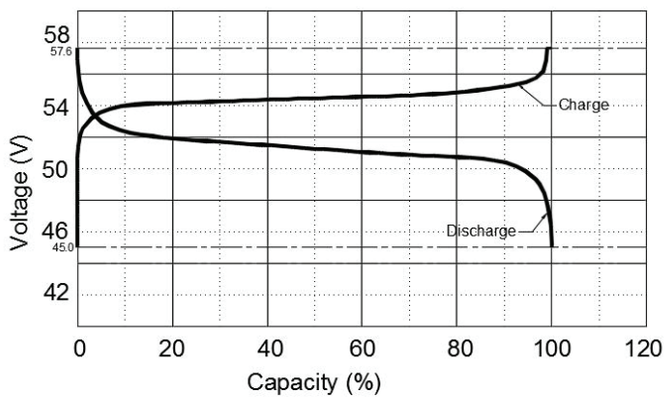
No.	Item	Parameters	Condition
1	Rack mount ear	For battery pack mounting	
2	Handle	Handle for carrier	
3	Battery -	SLPHIR	Negative
4	Circuit Breaker	Circuit Breaker for power supply	
5	HD LCD	HD touch LCD screen	
6	ID	Assign address of every model	
7	ALM / RUN	Alarm / Run LED display	
8	CAN	CAN Communication interface	
9	Battery-Comm	Connect inverter communication port	Parallel communication
10	Battery +	SLPHIR	Positive
11	ON/OFF switch	ON/OFF switch for BMS	
12	RS485	RS485 Communication interface	
13	SOC	Capacity remaining display	4 nos green LED
14	Reset	Emergency Reset	
15	GND	GND Connection for safety	

CAUTIONS

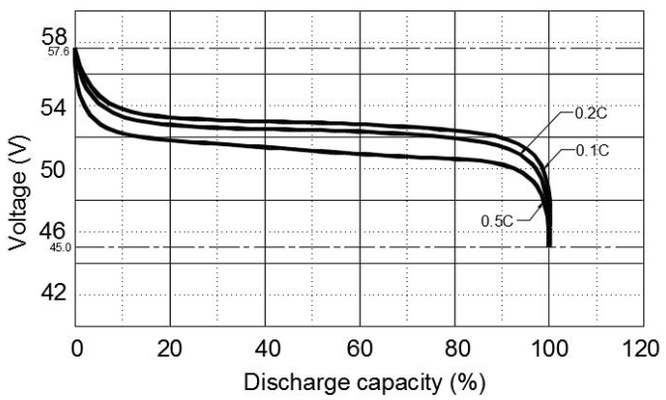
- Do not throw the battery into water. Store batteries in a cool, dry environment.
- Do not expose the battery to fire or heat to avoid explosion or other hazards.
- When charging the battery, use only specialised charging equipment and follow the correct procedures. Do not use unqualified chargers.
- Do not reverse the positive and negative terminals, connect the battery directly to AC power, or short-circuit the battery.
- Do not mix batteries from different manufacturers, different types, or old and new batteries.
- Do not puncture the battery with sharp objects. Avoid dropping, stamping on, impacting, or hitting the battery.
- Do not open or attempt to repair a defective battery. Warranty will be void if the battery is disassembled or repaired.
- Do not use the battery if it is hot, bulging, or emits abnormal odours. Report any issues to the after-sales department immediately.
- For long-term storage, charge and discharge the battery every three months to maintain optimal performance. The ideal storage charge level is 50–60%.
- Batteries are shipped at approximately 50% state of charge. Charge the battery before first use.

BATTERY MODULE PERFORMANCE CURVES

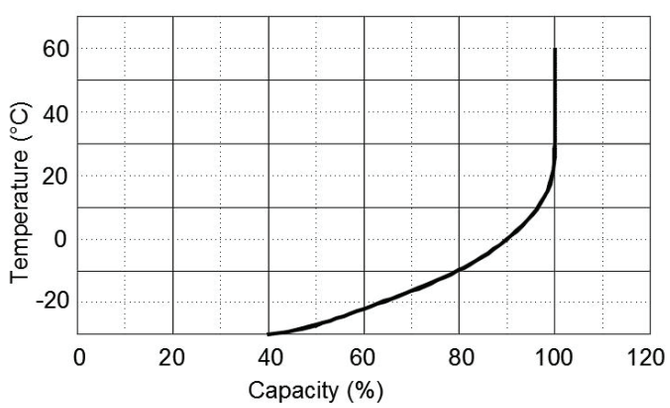
Charge & Discharge curve with 0.5C @ 25°C



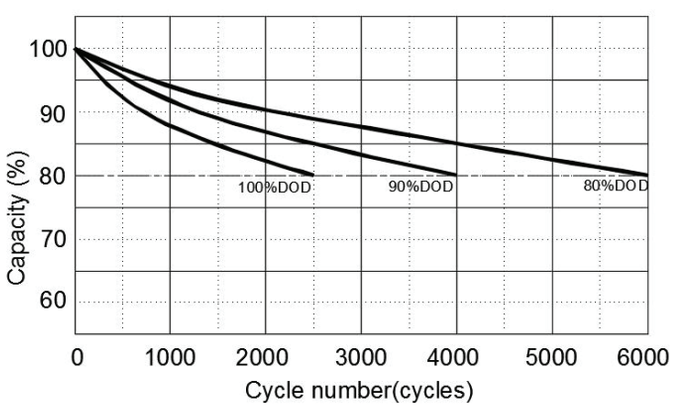
Discharge perfomance with different rate @ 25°C



Discharge capacity with different temperature @ 0.5C



Cycle life with DOD @ 0.5C，25°C



Self-discharge @ different temperature