

GENERAL OVERVIEW

Chemistry of the Cells	Lithium Iron Phosphate (LFP)	Nominal Voltage of Pack	48 V
Capacity of the Pack	5 KWh	Minimum Voltage of Pack	37.5 V
Number of Modules in the Pack	1 Module	Maximum Voltage	54.75 V
Number of Cells in Each Module	240 Cells	Rack Charging Profile	NA
Total number of cells in series	15 Cells	Continuous Charging Current	19.2 Amps
Total number of cells in parallel	16 cells	Continuous Discharging Current	48 Amps
Balancing type in the module BMS	Active balancing	Weight of Battery (~)	57 Kgs
Balancing Current	80 ± 10 mA	Weight Per KWH (~)	12 Kgs
SOC protection level	<= 10%	Volume	As per casing (in Cubic Feet)
Cell Voltage Rating	3.2 V 6300 mAh	Form Factor and Dimensions	As per casing

CHARGER

Parameter	Protection Values	Delayed	Protection and Relief Condition
Over Charge Voltage Protection	3.67 V	1-2 Sec	<ul style="list-style-type: none"> Discharge current The voltage drop to 3.5V
Over Charge Voltage Protection Level 1 (cell)	3.7 V	1-2 Sec	<ul style="list-style-type: none"> Discharge current The voltage drops to 3.5V
Over Charge Voltage Protection Level 2 (cell)	3.75 V	1 Sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Over Charge Voltage Protection (Battery Pack)	55.05 V	1-2 Sec	<ul style="list-style-type: none"> Discharge current The voltage drop to 52.5 V
Over charge voltage protection level 1 (Battery Pack)	55.5 V	1-2 Sec	<ul style="list-style-type: none"> Discharge current
Over charge voltage protection level 2 (Battery Pack)	56.25 V	1 sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Charge Over Current Protection Level 1	28.8 Amp	1-2 Sec	<ul style="list-style-type: none"> Discharge current
Charge Over Current Protection Level 2	33.6 Amp	1-2 Sec	<ul style="list-style-type: none"> Discharge current Reclose after 30 Sec delay. Over current after 3 consecutive times, report the fault and take it off-line

DISCHARGE

Parameter	Protection Values	Delayed	Protection and Relief Condition
Over Discharge Voltage Protection (Cell)	2.5 V	1-2 Sec	<ul style="list-style-type: none"> All cell voltage rise to 2.8 V
Over Discharge Protection Voltage level 1 (Cell)	2.45 V	1-2 Sec	<ul style="list-style-type: none"> All cell voltage rise to 2.8 V Charge the current
Over Discharge Protection Voltage level 2 (Cell)	2.4 V	1 Sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Discharge Over Current Protection (Battery)	72 Amp	1-2 Sec	<ul style="list-style-type: none"> Reduce discharge current to less than the normal value
Discharging Over Current Protection level 1	84 Amp	1 Sec	<ul style="list-style-type: none"> Reclose after 30 Sec delay. Over current after 3 consecutive times, report the fault and take it off-line
Discharging Over Current Protection level 2 protection	96 Amp	3 Sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Short Current Protection	153.6 Amp	10 mS Tripping	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually

CHARGING TEMPERATURE PROTECTION

Parameter	Protection Values	Delayed	Protection and Relief Condition
Charging High Temperature Protection	> 40 °C	1 - 2 Sec	• All temperature are below 40 °C
Charging High Temperature Protection Level 1	> 45 °C	1 - 2 Sec	• All temperature are below 45 °C
Charging High Temperature Protection Level 2	> 50 °C	10 Sec	• Circuit breaker trips, and need to reset manually
Charging Low Temperature Protection	< 10 °C	1 - 2 Sec	• All temperature are above 10 °C
Charging Low Temperature Protection level 1	< 7 °C	1 - 2 Sec	• All temperature are above 10 °C
Charging Low Temperature Protection level 2	< 5 °C	10 Sec	• Circuit breaker trips, and need to reset manually

DISCHARGE TEMPERATURE PROTECTION

Parameter	Protection Values	Delayed	Protection and Relief Condition
Discharge High Temperature Protection	> 50 °C	1 - 2 Sec	
Discharge High Temperature Protection Level 1	> 45 °C	1 - 2 Sec	
Discharge High Temperature Protection Level 2	> 50 °C	1 Sec	
Discharge Low Temperature Protection	< 0 °C	1 - 2 Sec	
Discharge Low Temperature Protection Level 1	< -5 °C	1 - 2 Sec	
Discharge Low Temperature Protection Level 2	< -10 °C	10 Sec	

CELL BALANCING

The maximum cell voltage > 3.5V and the voltage difference > 40mV

The cell voltage > 3.65V

Voltage difference <= 20 mV



Li-ion



Operative Environment Requirements (Recommended)

Parameter	Protection Values
Charging operative temperature	15 ~ + 35 °C
Discharging operative temperature	10 ~ + 45 °C
Operating humidity range	<90 (40 °C ± 2 °C) %RH
Storage temperature range	10 ~ + 25 °C
Storage humidity range	<95 (40 °C ± 2 °C) %RH

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