PURE LITHIUM | POWER BRIC™

GENERAL OVERVIEW

Chemistry of the Cells	Lithium Iron Phosphate (LFP)	**Nominal Voltage of Pack**	12.8 V
Capacity of the Pack	1 KWh	**Maximum Voltage of Pack**	14.6 V
Number of Modules in the Pack	1 Module	**Minimum Voltage of Pack**	10.4 V
Number of Cells in Each Module	48 Cells	**Rack Charging Profile**	NA
Total number of cells in series	4 Cells	**Continuous Charging Current**	20 Amps
Total number of cells in parallel	12 Cells	**Continuous Discharging Current**	35 Amps
Balancing type in the module BMS	Active balancing	**Weight of Battery (~)**	10 Kgs
Balancing Current	80 ± 10 mA	**Weight Per KWH (~)**	10 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	3.65 V	1-2 Sec	• Discharge current • The voltage drop to 3.5V
Over Charge Voltage Protection Level 1 (cell)	3.7 V	1-2 Sec	• Discharge current • The voltage drops to 3.5V and the module single cell differential voltage within limits
Over Charge Voltage Protection Level 2 (cell)	3.75 V	1 Sec	• BMS Circuit breaker trips, and need to reset manually
Over Charge Voltage Protection (Battery)	14.6 V	1-2 Sec	• Discharge current • The voltage drop to 14 V
Over charge voltage protection level 1 (Battery)	14.8 V	1-2 Sec	• Discharge current
Over charge voltage protection level 2 (Battery)	15 V	10 sec	• BMS Circuit breaker trips, and need to reset manually
Charge Over Current Protection Level 1	24 Amp	1-2 Sec	• Discharge current
Charge Over Current Protection Level 2	26 Amp	1-2 Sec	• 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	• All cell voltage rise to 2.8 V
Over Discharge Protection Voltage level 1 (Cell)	2.45 V	1-2 Sec	• All cell voltage rise to 2.8 V • Charge the current
Over Discharge Protection Voltage level 2 (Cell)	2.4 V	1-2 Sec	• BMS Circuit breaker trips, and need to reset manually
Discharge Over Current Protection (Battery)	38.5 Amp	1-2 Sec	• Reduce discharge current to less than the normal value
Discharging Over Current Protection level 1	42 Amp	10 Sec	• 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	45.5 Amp	3 Sec	• BMS Circuit breaker trips, and need to reset manually
Short Current Protection	112 Amp	10 mS Tripping	• BMS Circuit breaker trips, and need to reset manually

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CHARGING TEMPERATURE PROTECTION

Parameter	Protection Values	Delayed	Protection and Relief Condition
Charging high temperature alarm	> 45 ^{0}C	1 - 2 Sec	• All temperature are below 45 ^{0}C
Charging high temperature protection	> 50 ^{0}C	1 - 2 Sec	• All temperature are below 50 ^{0}C
High temperature charging level 2 protection	> 60 ^{0}C	10 Sec	• Circuit breaker trips, and need to reset manually
Charging low temperature alarm	< 0 ^{0}C	1 - 2 Sec	• All temperature are above 0 ^{0}C
Charging low temperature protection level 1	< -3 ^{0}C	1 - 2 Sec	• All temperature are above 0 0C
Charging low temperature protection level 2	< -5 ^{0}C	10 Sec	• Circuit breaker trips, and need to reset manually

DISCHARGE TEMPERATURE PROTECTION

Parameter	Protection	Delayed	Protection and Relief Condition
Discharge High Temperature	> 55 ^{0}C	1 - 2 Sec	
Discharge High Temperature Protection Level 1	> 60 ^{0}C	1 - 2 Sec	
Discharge High Temperature Protection Level 2	> 65 ^{0}C	10 Sec	
Discharge Low Temperature	< -5 ^{0}C	1 - 2 Sec	
Discharge Low Temperature Protection Level 1	< -10 ^{0}C	1 - 2 Sec	
Discharge Low Temperature Protection Level 2	< -15 ^{0}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

Operative Environment Requirements (Recommended)

Parameter	Protection Values
Charging operative temperature	0 ~ + 35 ^{0}C
Discharging operative temperature	0 ~ + 45 ^{0}C
Operating humidity range	<90 (40 ^{0}C ± 2 ^{0}C) %RH
Storage temperature range	0 ~ +35 ^{0}C
Storage humidity range	<95 (40 ^{0}C ± 2 ^{0}C) %RH

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