



General Overview

- **Chemistry of the Cells**
Lithium Iron Phosphate (LFP)
- **Capacity of the Pack**
1 KWh
- **No. of Modules in the Pack 1**
1 Module
- **No. of Cells in Each Module**
48 Cells
- **Total no. of cells in series**
4 Cells
- **Total no. of cells in parallel**
12 cells
- **Balancing type in the module BMS**
Active balancing
- **Balancing Current**
80 ± 10 mA
- **SOC protection level**
≤ 10%
- **Cell Voltage Rating**
3.2 V 6300 mAh
- **Nominal Voltage of Pack**
12.8 V
- **Minimum Voltage of Pack**
14.4 V
- **Maximum Voltage**
10.4 V
- **Rack Charging Profile**
NA
- **Continuous Charging Current 2**
20 Amps
- **Continuous Discharging Current**
35 Amps
- **Weight of Battery (~)**
10 Kgs
- **Weight Per KWH (~)**
10 Kgs
- **Volume**
As per casing (in Cubic Feet)
- **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	<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 and the module single cell differential voltage within
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)	14.6 V	1-2 Sec	<ul style="list-style-type: none"> Discharge current The voltage drop to 14 V
Over Charge voltage protection level 1 (Battery)	14.8 V	1-2 Sec	<ul style="list-style-type: none"> Discharge current
Over Charge voltage protection level 2 (Battery)	15 V	10 Sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Charge Over Current Protection Level 1	24 Amp	1-2 Sec	<ul style="list-style-type: none"> Discharge current
Charge Over Current Protection Level 2	26 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	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	1-2 Sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Discharge Over Current Protection (Battery)	38.5 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	42 Amp	10 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	45.5 Amp	3 Sec	<ul style="list-style-type: none"> BMS Circuit breaker trips, and need to reset manually
Short Current Protection	112 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 Alarm	> 45 °C	1-2 Sec	<ul style="list-style-type: none">All temperature are below 45°C
Charging High Temperature Protection	> 50 °C	1-2 Sec	<ul style="list-style-type: none">All temperature are below 50°C
High Temperature Charging Level 2 Protection	> 60 °C	10 Sec	<ul style="list-style-type: none">Circuit breaker trips, and need to reset manually
Charging Low Temperature Alarm	> 0 °C	1-2 Sec	<ul style="list-style-type: none">All temperature are above 0°C
Charging Low Temperature Protection level 1	> -3 °C	1-2 Sec	<ul style="list-style-type: none">All temperature are above 0°C
Charging Low Temperature Protection level 2	> -5 °C	10 Sec	<ul style="list-style-type: none">Circuit breaker trips, & need to reset manually

Discharge Temperature Protection

Parameter	Protection Values	Delayed	Protection and Relief Condition
Discharge High Temperature Protection	> 55 °C	1-2 Sec	
Discharge High Temperature Protection Level 1	> 60 °C	1-2 Sec	
Discharge High Temperature Protection Level 2	> 65 °C	10 Sec	
Discharge Low Temperature Protection	> -5 °C	1-2 Sec	
Discharge Low Temperature Protection Level 1	> -10 °C	1-2 Sec	
Discharge Low Temperature Protection Level 2	> -15 °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 Environmental Requirements (Recommended)

Parameter	Protection and Relief Condition
Charging operative temperature	0 ~ + 35°C
Discharging operative temperature	0 ~ + 45°C
Operating humidity range	<90 (40° C ± 2° C) %RH
Storage temperature range	0 ~ + 35°C
Storage humidity range	<90 (40° C ± 2° C) %RH



Born out of Innovation at IIT Hyderabad, PURE is committed to drive the future of e-mobility and ESS. We design and manufacture EV 2W and Lithium Batteries.

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