Power Lite-U(L051100-B) Product Specification

Ver 1.1

Revision History:

Date	Revision	Description	Owner
2021-08-26	V1.0	Initial Release	TangXX
2022-02-16	V1.1	SOC Transportation Range update to 50%	TangXX

Table of Contents

1. Scope

This document is a specification, as an input file for the design and development of the PACK, and as a standard for acceptance of battery system products.

2. Terminology and Basis for Writing

2.1 Definition of Terms

Battery Cell	The smallest energy storage unit, a basic electrochemical energy storage device, consisting of a positive electrode, a negative electrode, an electrolyte, a separator, and a casing, also called a cell.
Battery Module	Intermediate energy storage unit, a combination of several single-unit and circuit devices (monitoring and protection circuits, electrical and communication interfaces), also called modules, placed in a mechanical electrical unit.
Battery Pack	A power supply system consisting of a number of battery modules, circuit equipment (protection circuits, cell management systems, electrical and communication interfaces), and thermal management devices for powering electrical devices.
Nominal Voltage	Indicates or identifies an appropriate voltage approximation for the cell.
Capacity	The amount of electricity that can be supplied by a fully charged battery under specified conditions. Usually expressed in Ah.
Energy Capacity	The energy that can be supplied by a fully charged cell under specified conditions. Usually expressed in Wh or kWh.
Nominal Capacity	At the beginning of life (BOL), the minimum capacity that can be provided by a fully charged cell at a rate of 1 C (C-rate).
Unit	"V" (Volt) Volt (V), voltage unit "A" (Ampere) Ampere (A), current unit "Ah" (Ampere-Hour) Ampere-hour (Ah), charge unit “Wh” (Watt-Hour) Watt-hour (Wh), unit of electrical energy “Ω” (Ohm) ohm (Ω), resistance unit ℃ (degree Celsius) Celsius (℃), temperature unit "mm" (millimeter) mm (mm), length unit "s" (second) seconds (s), time unit "kg" (kilogram) kilograms (kg), weight unit "Hz" (Hertz) Hertz (Hz), frequency unit

2.2 Abbreviations

UZ	SHENZHEN UZ Energy Limited.
BMS	Battery Management System
BMU	Battery Management Unit
BOL	Begin of Life
Bus-bar	Battery pole connecting rod
CAN	Controller Area Network
C-CAN	BMU and CMC communication CAN
CMC	Cell Manager Circuit
EOL	End of Life
HV	High Voltage
LV	Low Voltage
OCV	Open Circuit Voltage
SOC	State of Charge

3. Technical Parameters

The key parameters of the battery system are as follows:

NO.	Key Item	Specification	Remarks
3.1	Battery Model	CATL_LFP100Ah	Cathode: Lithium iron Phosphate；Anode：Graphite.
3.2	Module Model	M051100-A 1P16S Module	
3.3	Nominal Capacity	100Ah	
3.4	Nominal Voltage	51.2V	Single cell voltage 3.2V
3.5	Operating Voltage Range	44.8V～57.6V	
3.6	Rated Energy	5.12kWh	
3.7	Usable Battery Capacity	100Ah	
3.8	Usable Battery Energy	5.12kWh	
3.9	Battery Depth of Discharge	100%	
3.10	Battery Max Charge/Discharge Power	2.56kw/5.12kw	
3.11	The short circuit current	210A	

3.12	Available SOC Range	0% ~ 100%	
3.13	SOC Transportation Range	50%	
3.14	Operating Temperature	Charging Temperature：0℃~55℃；DisCharge Temperature：-20℃～55℃	Detailed use conditions need to refer to the charge and discharge window
3.15	Storage Temperature	-20℃ ~ 50 ℃	Longer than three months 25 ° C storage
3.16	Working Humidity	20~80%RH	
3.17	Standard Charging Current	0.5C (50A)	
3.18	Maximum Charging Continuous Current	0.5C (50A)	
3.19	Standard Discharge Current	0.5C (50A)	
3.20	Max Discharge Continuous Current	0.5C (50A)	(0.5C，25℃±2℃)
3.21	Peak Current	100A	
3.22	Rated DC Power	2.56kw	
3.23	ΔVoltage	≤20mV	60 min after standing and stopped after charging and discharging
3.24	IP Rating	IP20	
3.25	Recommended Indoor/Outdoor Usage	Indoor	
3.26	Weight	~44.5Kg	Actual weight requires weighing confirmation
3.27	Dimensions	Length：440（±5）mm Width：530（±5）mm Height：132（±5）mm	
3.28	Communication	CAN/RS485/Wifi/Dry Contact	
3.29	Certificate (Battery, Power Lite Inside)	UN38.3/UL1973/ UL9540A (Pending)	
3.30	Calendar Life2	10 Years	

4. Battery System Structure

4.1 Dimensions and External Surface Requirements

The appearance of the power lite-U battery system is shown below. The battery system consists of 16pcs of 100Ah cells connected in serial.

Figure 1、Schematic Diagram of the power lite-U Battery System

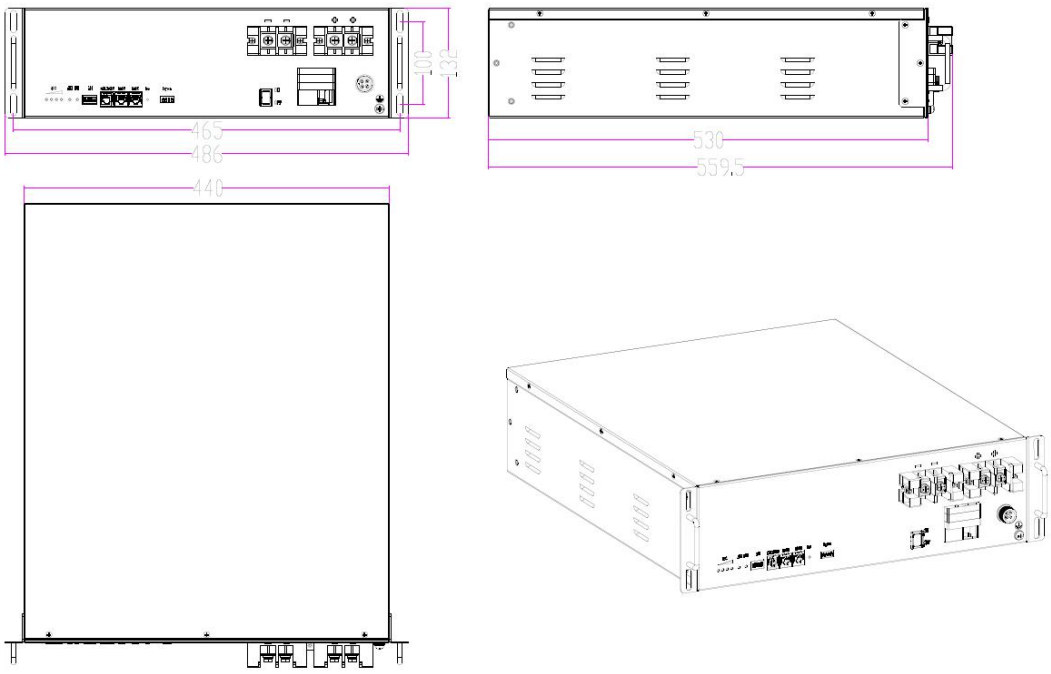


Figure 2、Power lite-U Battery System Size Chart

Appearance requirements: The appearance of the assembly has no obvious processing or bumping flaws, no crack on the surface, and no burrs on the weld.

4.2 Electrical Schematic

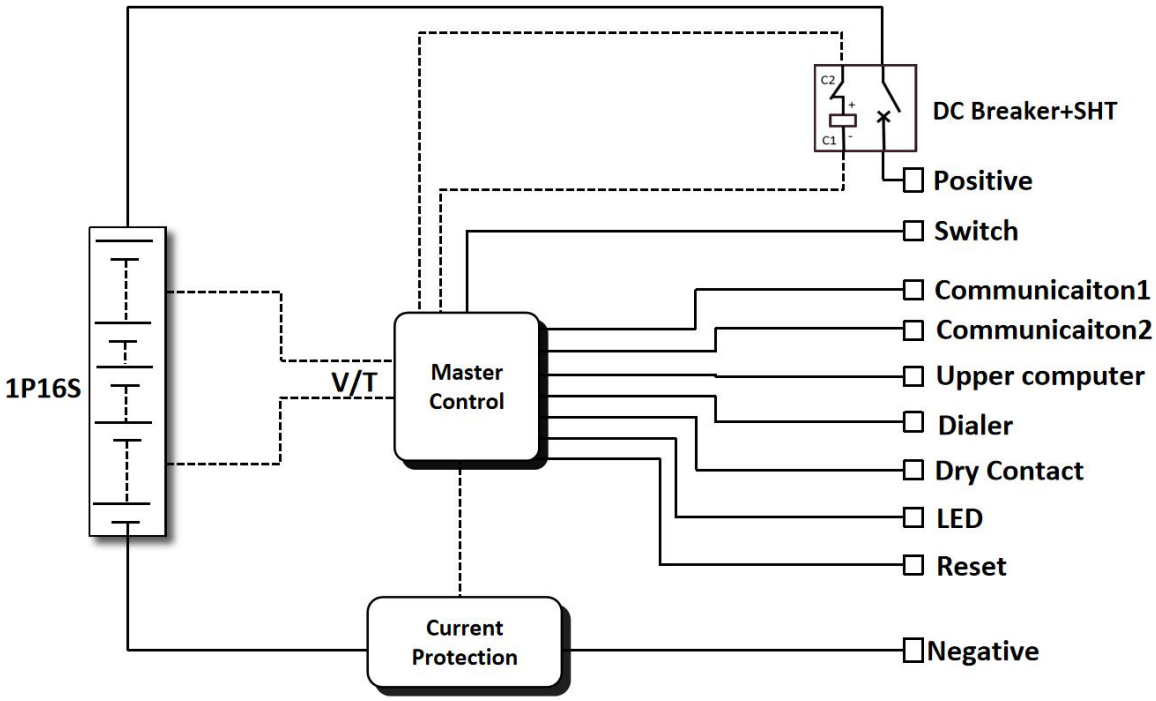


Figure 3, Electrical Schematic

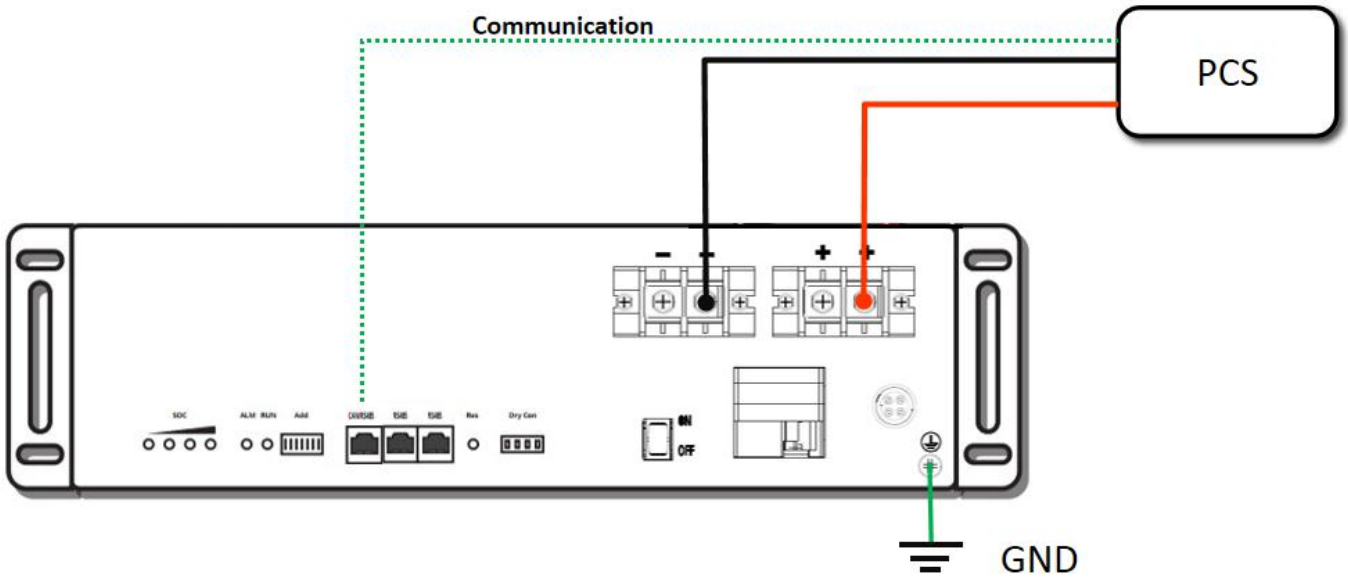
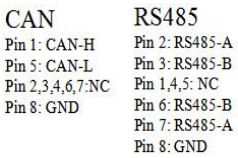


Figure 4, System wiring Schematic
（DC Breaker Technical Parameters: 125A/2P/DC125V ）

4.3 Battery System Panel Connector

Connector	Connector socket model	Connector plug type	Definition	Remark
Positive 1	DSTB38-02-TWIN-N	RED	Red power Cable	25mm^2
Positive 2	DSTB38-02-TWIN-N	RED	Red power Cable	25mm^2
Negative 1	DSTB38-02-TWIN-N	BLACK	Black power Cable	25mm^2
Negative 2	DSTB38-02-TWIN-N	BLACK	Black power Cable	25mm^2
Communication Port x1	RJ45 	Pin 1: CAN-H Pin 2: RS485-A Pin 3: RS485-B Pin 4: NC Pin 5: CAN-L Pin 6: RS485-B Pin 7: RS485-A Pin 8: GND	CAN/RS485	
Communication Port x2	RJ45 	Pin 1,4,5,8 :NC Pin 2: RS485-A Pin 3: RS485-B Pin 6: RS485-B Pin 7: RS485-A Pin 8: GND	RS485	Internal connection,communicate to BMS upper computer
Wifi Socket	Magpie wifi Stick V190603-R			Function(Option)