PYLONTECH

LFP Lithium Ion Energy Storage System

PowerCube-M1-C Operation Manual

Information Version: AS0MPCM1C312

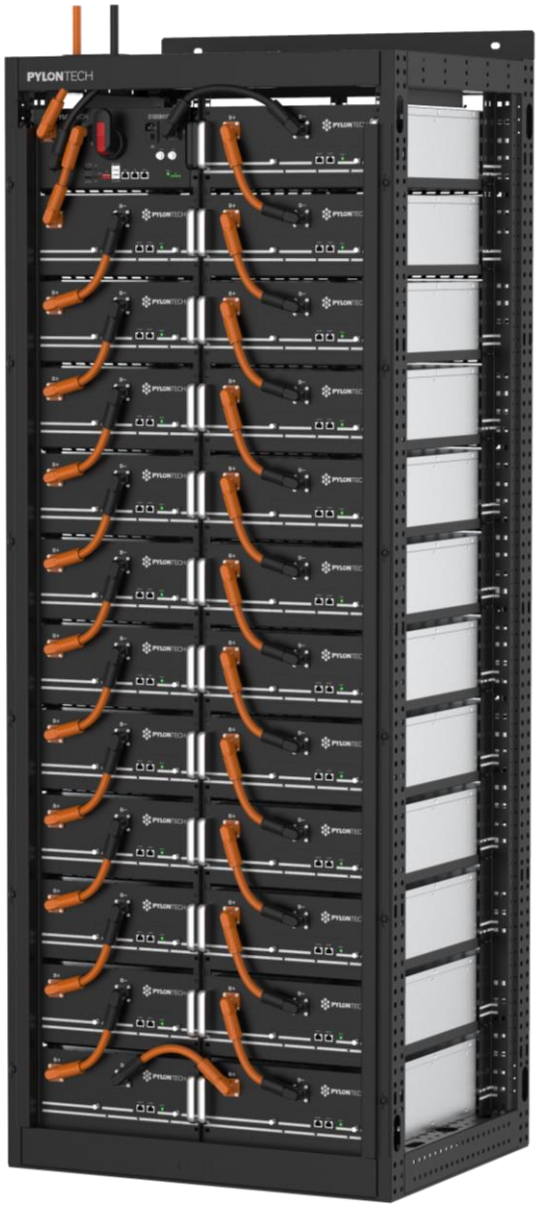
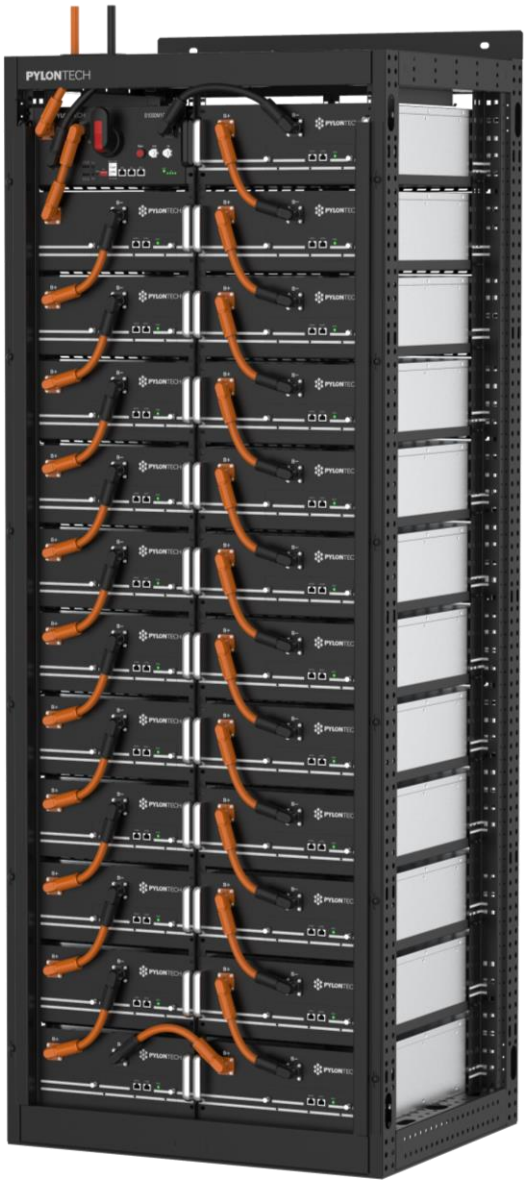
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2. System Introduce

2.1 Product Introduce

PowerCube-M1-C is a high voltage battery storage system based on lithium iron phosphate battery, is one of new energy storage products developed and produced by Pylontech, it can be used to support reliable power for various types of equipment and systems. PowerCube-M1-C is especially suitable for application scene of high power, limited installation space, restricted load-bearing and long cycle life.

2.2 Specifications

External power supply battery system	**Internal power supply** battery system
	

2.2.1 The parameter of system

Product Type	**PowerCube-M1-C**
System Voltage (Vdc)	＜1000
Controller Type	SC1000-200L-C (External Power Supply Version) SC1000-200J-C (Internal Power Supply Version)
Battery Module Type	H32148-C
Nominal Voltage (Vdc)	32 × n (where n = 1~25)
Rated Capacity(Ah)	148
Total Storage Energy(kWh)	4.736 × n (where n = 1~25)
Charge Upper Voltage (Vdc)	36 × n (where n = 1~25)
Discharge Lower Voltage (Vdc)	27 × n (wh ere n = 1~25)
Nominal Current(Amps)	74
Max. Continuous Current(Amps)	**148**
Peak Current(Amps)	**220@15sec**
OverCurrent/Duration(Amps/ms)	8000/2
IP Rating/Protection Class	IP20/I
Operation temp. range(℃)	10 ~ 40
Communication type	CANBUS/Modbus RTU/TCP/IP
Storage temp. range(℃)	-20 ~ 60
Humidity（%）	5 – 95 (without condensing)
Round-trip efficiency（%，@1C-rate）	95
Depth of Discharge（%）	95
Dimension	815mm(W)*659mm(D)*2130mm(H)(rack for 1~23pcs) 815mm(W)*659mm(D)*2300mm(H)(rack for 1~25pcs)
Weight	114+ 43×n (where n = 1~25) kg
Operation cycle life	>5,000
Operation Life(Years)	15+
IP rating	IP20
Cooling type	Natural cooling

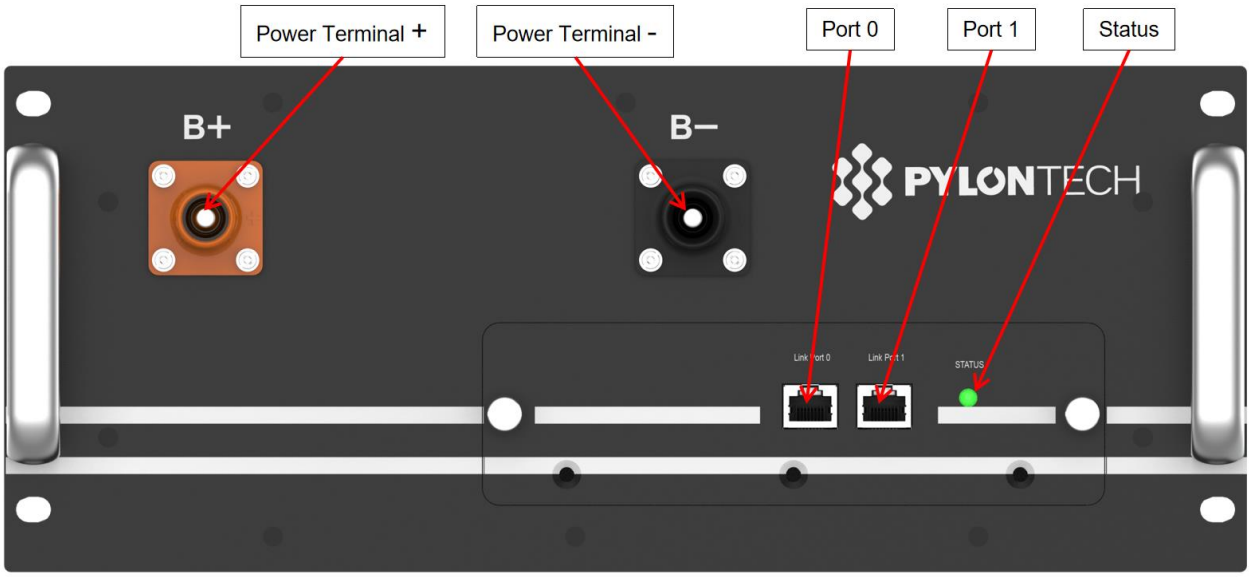
Altitude [m]	<4,000
Certification	UL1973, UL9540A, IEC62477-1, IEC62040-1, IEC62619, IEC63056，UKCA，CE LVD, CE EMC, UN38.3， VDE-AR-E 2510-50

2.2.2 Battery Module (H32148-C)



Product Type	**H32148-C**
Cell Technology	Li-ion (LFP)
Battery Module Capacity (kWh)	4.736
Battery Module Voltage (Vdc)	32
Battery Module Capacity (AH)	148
Dimension (W*D*H, mm)	330×628×150.5
Protection Class	IP20
Weight (kg)	43
Operation Cycle Life	5,000
Operation Temperature(℃)	0~50
Storage Temperature(℃)	-20~60
Transportation Certificate	UN38.3

Battery Module (H32148-C) Front Interface



Power Terminal +/-

To connect battery series power cables.

Status

Status light: to show the battery module's status (Normal ●, Abnormal ●).

Link Port 0, 1

Link Port 0, 1 Communication Terminal: (RJ45 port), CAN communication, between multiple serial battery modules and control module.

Power Terminals

Power cable terminals: there are two pair of terminals with same function, one connect to equipment, the other one paralleling to other battery module for capacity expanding. For each single module, each terminal can achieve charging and discharging function.
For power cables uses water-proofed connectors. It must keep pressing this Lock Button during pulling out the power plug.



2.2.3 Control Module

PowerCube-M1-C's Control Module has two versions, **external** power supply or internal power supply.



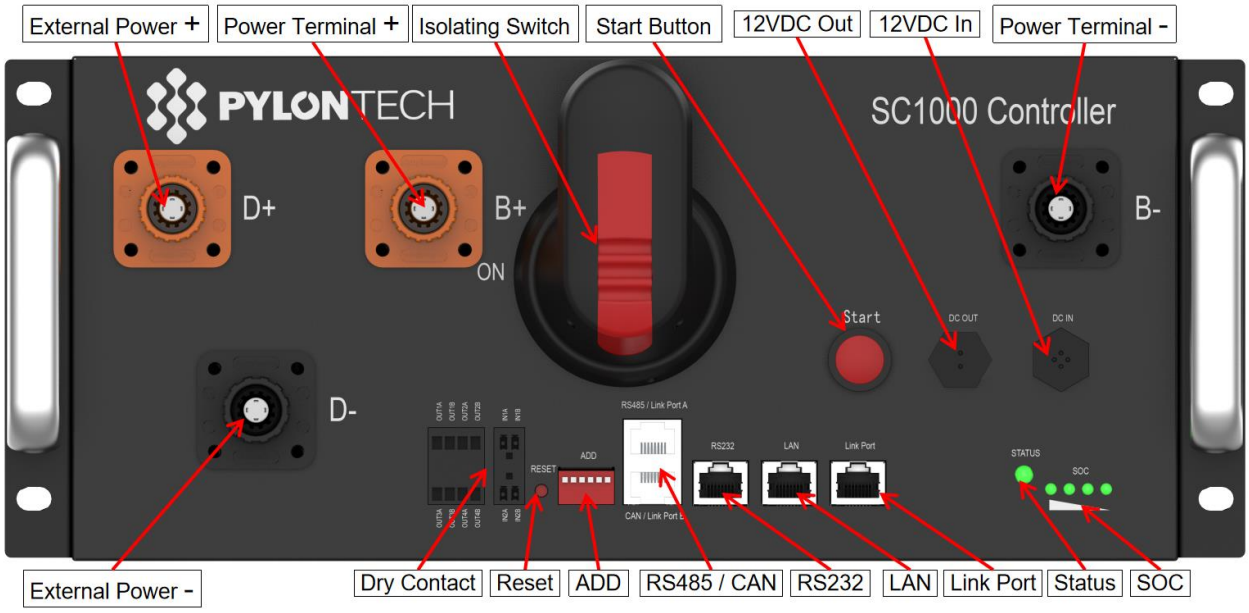
SC1000-200L-C



SC1000-200J-C

Product Type	SC1000-200L-C	SC1000-200J-C
Related Product	M1-C	M1-C
AC Supply for BMS	230Vac/50Hz/1.3A	N/A
System Operation Voltage (Vdc)	0~1000	0~1000
Operation Current (Max.) (A)	148	148
Self-consumption Power-Relay Off (W)	12	6
Self-consumption Power-Relay On(W)	19	15
Dimension (W*D*H, mm)	330×628×150.5	330×628×150.5
Communication	MODBUS RTU\CAN\LAN	MODBUS RTU\CAN\LAN
Protection Class	IP20	IP20
Weight(kg)	13	13
Operation Life (Years)	15+	15+
Operation Temperature(℃)	-20~65	-20~65
Storage Temperature(℃)	-40~80	-40~80

2.2.3.2Control Module (SC1000-200J-C Internal power supply) Front Interface



External Power Terminal D+/D-

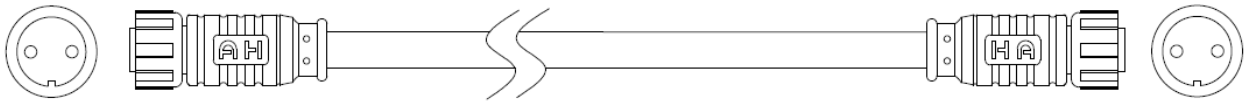
Connect battery system with Inverter.

Power Terminal B+/B-

To connect battery power cables in series.

12VDC Out

OUT: Power supply for MBMS, to connect with MBMS' 12VDC IN.



12VDC In

In: Back-up 12VDC power supply port.

Isolating Switch

To control the BMS power supply and high voltage DC power output

Start Button

Start function: press more than 5sec until the buzzer rings, to turn on controller.

Power on:Press and hold≥**5sec** till the buzzer rings
Mise sous tension: Appuyez et maintenez ≥**5sec**
jusqu'à ce que le buzzer sonne

Black start function: If long press(>10sec) the start button 30s **AFTER** controller power on. The "STATUS" lamp will become green which means black start function is enabled. and relay will close and output for 10 min.

Dry Contact Terminal

Dry Contact Terminal: provided 2 input and 4 output dry contact signal.

Reset

Reset Button: Long press this button to restart the battery system.

ADD

ADD: 6 bit dial switches to manually distribute the communication address of the battery system. Nether position is OFF, means "0". Upper position is ON, means "1". 1st bit to 5th bit is for address, and the 6th bit dial switch support a 120Ω resistance.

CAN / RS485

CAN Communication Terminal: (RJ45 port) follow CAN protocol, for communication between battery system and inverter.

RS485 Communication Terminal: (RJ45 port) follow Modbus RTU/TCP/IP protocol, for communication between battery system and inverter.

RS232 Terminal

Console Communication Terminal: (RJ45 port) follow RS232 protocol, for manufacturer or professional engineer to debug or service.

LAN Terminal

Console Communication Terminal: (RJ45 port) follow Modbus protocol, used for communication between MBMS, switches or upper controller.

Link Port

Link Port Communication Terminal: (RJ45 port) follow RS485 protocol, for communication between multiple serial battery modules and control module.