

MBCL0028Ah-0048R0SHZ LITHIUM TITANATE MODULE



MODEL	48V28Ah Lithium Titanate Module
PART NUMBER	MBCL0028Ah-0048R0SHZ

Rev	Date	Valid from	Revision of historical records
V2021-01	2021-03-10		1st version

FEATURES
Over 20,000 duty cycles
Low ESR & Ultra-high energy density
Wide operating temperature

APPLICATIONS
Automotive
Energy storage system
UPS power supply system
AGV/RGV

SPECIFICATION

ELECTRICAL

Rated capacity (1C discharge to 30V)	28Ah
Rated Voltage (V DC)	48V
Surge Voltage (V DC)	54V
Maximum discharge termination voltage	30V
AC ESR (Max. at room temperature)	≤25mΩ
Maximum charging current (Continuous / Pulse)	140A/15C
Maximum discharging current (Continuous / Pulse)	140A/20C

TEMPERATURE

Charging temperature Range	-40°C to +60°C
Discharging temperature Range	-40°C to +60°C
Storage temperature (Battery in half-full state)	-40°C to +60°C

PHYSICAL

Weight	25 kg
Power Terminals	M11/M11
Recommended Torque - Terminal	Nm
Environmental Protection	IP

MONITORING / CELL VOLTAGE MANAGEMENT

Cell Voltage Monitoring	Overvoltage Alarm
Temperature Monitoring	NTC Thermistor

SPECIFICATION

Discharge capacity at different temperatures (1C at room temperature Charged to 54V)

Test conditions (discharge to 30V) available capacity	1C discharge at -40°C ≥85%
Test conditions (discharge to 30V) available capacity	1C discharge at -20°C ≥90%
Test conditions (discharge to 30V) available capacity	1C discharge at 55°C ≥95%

Discharge at different currents (1C at room temperature Charged to 54V)

Test conditions available capacity	3C discharge 98%
Test conditions available capacity	6C discharge 95%

Charge at different currents (1C at room temperature Discharged to 30V)

Test conditions available capacity	2C charge 95%
Test conditions available capacity	6C charge 85%

STORAGE PERFORMANCE

Capacity remaining after storage Percentage remaining capacity(Storage temperature 25C, storage time 28 days, charged storage state 100%)	≥92%
Restore capacity after storage Percentage remaining capacity(Storage temperature 55C, storage time 7 days, charged storage state 100%)	≥98%

SPECIFICATION

DC LIFE (30V~54V)

Cycle life (1C Cycle)

Percent capacity after cycle life test
Cycle life

25°C

≥80%

20000 duty cycles

Cycle life (3C Cycle)

Percent capacity after cycle life test
Cycle life

25°C

≥80%

10000 duty cycles

SAFETY (Single cell based safety test program)

Overcharge (GB/T 31485-2015)

No fire, no explosion

Overdischarge (GB/T 31485-2015)

No fire, no explosion, no liquid leakage

Heating (GB/T 31485-2015)

No fire, no explosion

Short Circuit (GB/T 31485-2015)

No fire, no explosion

Squeezing (GB/T 31485-2015)

No fire, no explosion

Falling (GB/T 31485-2015)

No fire, no explosion, no liquid leakage

Needle pricking (GB/T 31485-2015)

No fire, no explosion

Seawater immersion (GB/T 31485-2015)

No fire, no explosion

Temperature cycling (GB/T 31485-2015)

No fire, no explosion, no liquid leakage

Low pressure test (GB/T 31485-2015)

No fire, no explosion, no liquid leakage

CAUTIONS

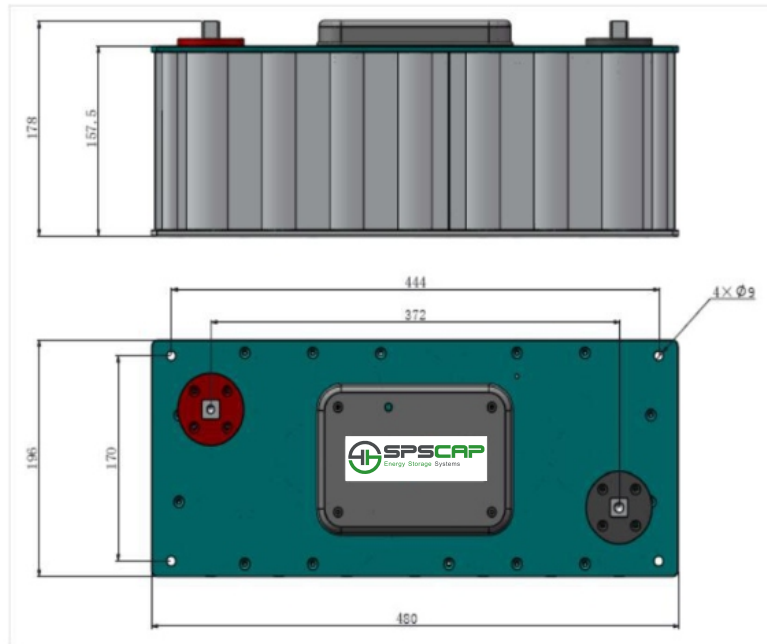
Charging - Overcharging is strictly prohibited, charging voltage is not higher than 54V, reverse charging is strictly prohibited

Discharge - Short-circuiting is strictly prohibited, and the discharge voltage should not be lower than 30 V

Safety - Do not place the battery in fire or water

Storage - The battery should be stored in a clean, dry and ventilated room with an ambient temperature of -40°C ~ +60°C and a relative humidity of not more than 75%, avoid contact with corrosive substances, and keep away from fire and heat sources

DIMENSIONS



PART NUMBER	DIMENSION(MM)		
	L (Max)	W (± 1mm)	H (± 1mm)
MBCL0028Ah-0048R0SHZ	480	196	178

PIN DEFINITION

PIN NUMBER	WIRE COLOR	DEFINITION	THRESHOLDS	SIGNAL STATUS
1	Black	GRND	CELL ≥ 2.95V ± 50mV	Normal closing
2	White	VMC Active	CELL ≥ 2.95V ± 50mV	Abnormal disconnection
3	Red	Temp	≥ 65°C	Normal closing
4	Green	Temp	≥ 65°C	Abnormal disconnection

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