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| 12LSM-100DC | <i>Solar, RV, Deep Cycle LifePO4 Battery</i> |
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RECHARGEABLE LITHIUM IRON PHOSPHATE BATTERY SPECIFICATION

Model No. 12LSM-100DC (12.8V/100Ah)

1. Scope

This specification is for the LiFePO4 12.8V/100Ah battery pack 12LSM-100DC.

2. SPECIFICATION

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| Model No. | 12LSM-100DC |
| Nominal Voltage | 12.8V |
| Nominal Capacity @ 0.2C | 100Ah |
| Watt-Hour | 1280Wh |

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| Dimensions Length Width Height | 329mm 172mm 223mm |
| Weight | Approx. 14.5Kg |
| Internal Resistance | ≤40mΩ @ 50% SOC |
| Recommended Charge Current | 20A |
| BMS Maximum Charge Current | 100A |
| Charge Cut-off Voltage | 14.6V |
| BMS Maximum Continuous Discharge Current | 100A |
| Peak Discharge Current | 300A (2S) |
| Discharge Cut-off Voltage | 10.0V |
| Expected Cycle Life | Residual capacity is more than 80% of initial capacity after 2,000 cycles at 25°C, 1C |
| Self Discharge | <3% per month |
| Cell Type | Cylindrical 32700, 4S17P |

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|---|---|
| Operating Temperature Charge Discharge Storage | 0 - +55 °C -20 - +60 °C -5 - +35 °C |
| Humidity | RH≤85% |
| Housing Material | ABS |
| Enclosure Protection | IP56 |
| Terminal Type | Threaded insert |
| Terminal size | 8mm |

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3. Performance And Test Conditions

3.1 Standard Test Conditions

Test should be conducted with new batteries within one week after shipment from our factory and the batteries shall not be cycled more than five times before the test. Unless otherwise specified, test and measurement shall be done under temperature of $20\pm 5^{\circ}\text{C}$ and relative humidity of 45~85%. If it is judged that the test results are not affected by such conditions, the tests may be conducted at temperature 15~30°C and humidity 25~85%RH.

3.2 Measuring Instrument or Apparatus

3.2.1 Dimension Measuring Instrument

The dimension measurement shall be implemented by instruments with equal or more precision scale of 0.01mm.

3.2.2 Voltmeter

Standard class specified in the national standard or more sensitive class having inner impedance more than $10\text{k}\Omega/\text{V}$

3.2.3 Ammeter

Standard class specified in the national standard or more sensitive class. Total external resistance including ammeter and wire is less than 0.01Ω .

3.2.4 Impedance Meter

Impedance shall be measured by a sinusoidal alternating current method (1kHz LCR meter).

3.3 Standard Charge/Discharge

3.3.1 Standard Charge : 0.2C

Charging shall consist of charging at a 0.2C constant current rate until the battery reaches 14.6V. The battery shall then be charged at constant voltage of 14.6 volts while tapering the charge current. Charging shall be terminated when the charging current has tapered to 0.05CA. Charge time: Approx 7.0h, The battery shall demonstrate no permanent degradation when charged between 0 °C and 45 °C.

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3.3.2 Standard Discharge : 0.2C

Battery shall be discharged at a constant current of 0.2C to 10V @ 20° ± 5C

3.3.3 If not otherwise specified, the rest time between charging and discharging is 30min.

3.4 Appearance

There shall be no such defect as crack, rust, leakage, which may adversely affect commercial value of battery.

4. Handling of battery

4.1 Please read and follow the handling instructions before use. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery. Warranty is not given for accidents caused by usage without following handling instructions:

Warning

Battery must be installed away from heat source, high voltage, and not continuously exposed to sun;

Never throw the battery into water or fire;

Never reverse positive and negative terminals of the battery;

Never connect the positive and negative terminals of battery with metal;

Never knock, throw or trample the battery;

Never disassemble the battery without manufacturer's permission and guidance;

Never mix the battery of different manufacturers, types or models.

Tips

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Protect the battery against high temperature, which will cause battery heating, resulting in loss of function, reduced life or fire;

When the battery is discharged, please charge it within 15 days;

Please use the original or recommended charger for this battery

If the battery leaks and gets into the eyes or skin, do not wipe, instead, rinse it with clean water and see doctor immediately;

Do not use the battery when there exist abnormal conditions such as odour, discoloration, noise, leakage, serious deformation, etc.

Keep away from children or pets.

5. Period of Warranty

The period of warranty is 24 months from the date of shipment. In the case of a battery with defects proven due to manufacturing process instead of the customer abuse and misuse, a replacement will be given, there is no compensation for loss of use or other incidental damage.

6. Storing the Batteries

The batteries should be stored at room temperature, charged between 30% to 50% of capacity.

We recommend that batteries be charged about once per three months to prevent over-discharge.

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Photo for reference

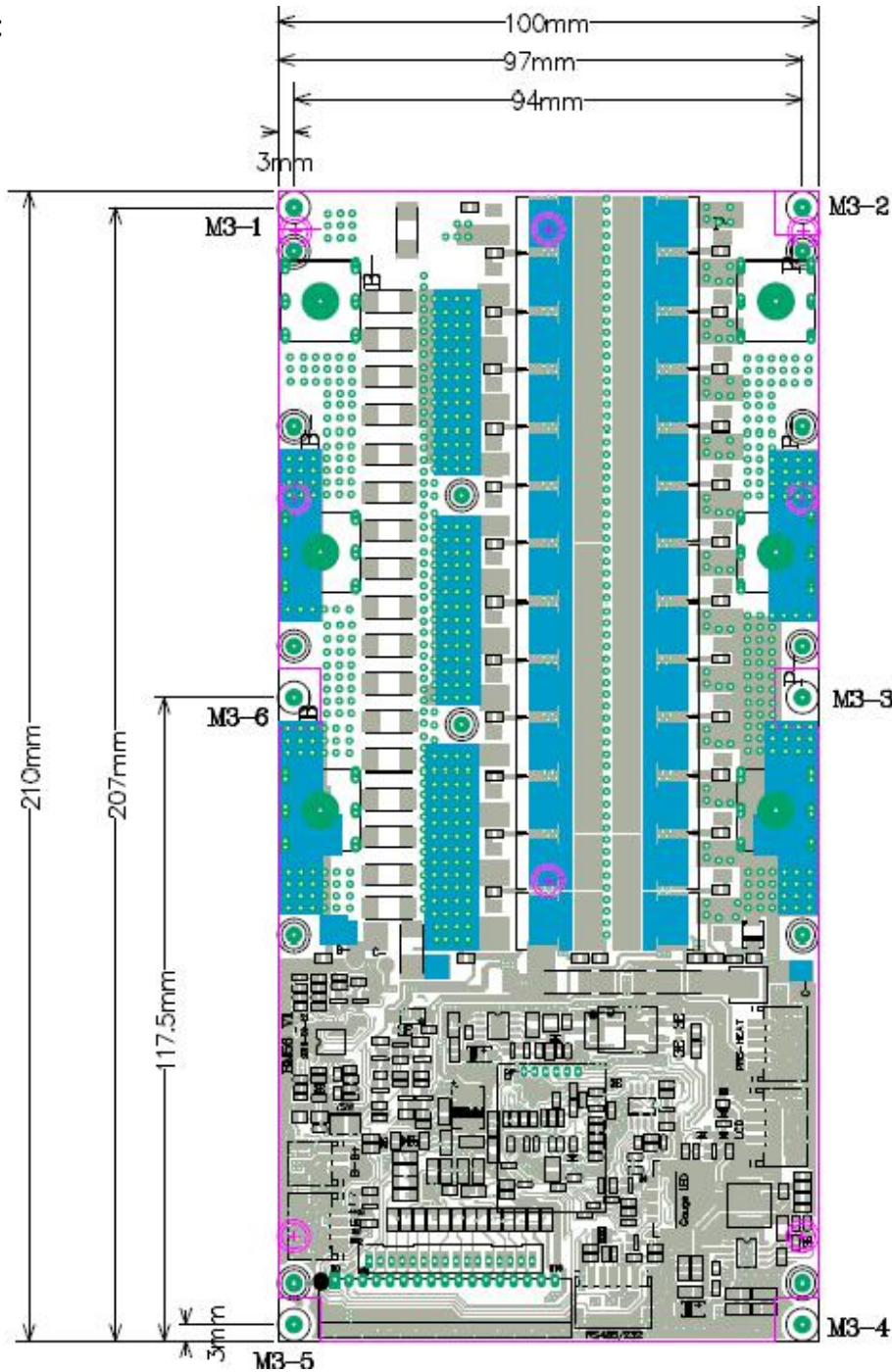


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Battery Management System

Size:



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Electrical characteristics

| Item | Content | Standard |
|------------------------------------|--|---------------------------|
| Over charge Protection | Over charge detection voltage | 3.65 V |
| | Over charge detection delay time | 2 S |
| | Over charge release voltage | 3.55V |
| Over discharge protection | Over discharge detection voltage | 2.5V |
| | Over discharge detection delay time | 3 S |
| | Over discharge release voltage | 2.9 V |
| Charge Over current protection | Charge Over current detection current | 120 A |
| | Charge Over current detection delay time | 1 S |
| Discharge Over current Protection1 | Discharge Over current detection current1 | 120 A |
| | Discharge Over current detection delay time1 | 9 S |
| Discharge Over current Protection2 | Discharge Over current detection current2 | 300 A |
| | Discharge Over current detection delay time2 | 2 S |
| Short protection | Short protection detection delay time | 150 u S |
| | Detection condition | The battery short circuit |
| | Short release condition | REMOVE LOAD |
| Interior resistance | Main loop electrify resistance | 2.2mOhm |
| Current consumption | Current consume in normal operation | 2.5mA Type |
| Current consumption | Current consume in sleep operation | 20 uA Type |

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| charge high temperature protection | | 65°C |
| charge high temperature protection recovery | | 55°C |
| Charge low temperature protection | | -2 °C (This setting value matches the heating module) |
| Charge low temperature protection Recovery | | 2 °C (This setting value matches the heating module) |
| Discharge high temperature protection | | 65°C |
| Discharge high temperature protection recovery | | 55°C |
| Discharge low temperature protection | | -40°C |
| Discharge low temperature protection Recovery | | -35 °C |
| Balanced open voltage | | 3.45V |
| Balance current | | 20mA Expandable external balance plate up to 3A |
| Rated discharge current | | 100A |