

JB

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JB/T 11139-2011

**General requirements for lithium manganese oxide battery
modules**

锰酸锂蓄电池模块通用要求

(English Translation)

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1 Scope

This standard specifies the terms and definitions, classification and models, requirements, test methods, inspection rules, markings, packaging, transportation and storage of lithium-ion manganese oxide battery module, which is composed of lithium-ion manganese oxide batteries of greater than or equal to 6 A·h.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB 2893-2008 safety colors

GB 2894-2008 Safety signs and guideline for the use

GB 4208-2008 Degrees of protection provided by enclosure (IP code)

GB 4824-2004 Industrial, scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement

GB/T 5465.2-2008 Graphical symbols for use on electrical equipment - Part 2: Graphical symbols

GB/T 17626.2-2006 Electromagnetic compatibility (EMC) - Testing and measurement techniques - Electrostatic discharge immunity test

GB/T 17626.3-2006 Electromagnetic compatibility - Testing and measurement techniques - Radiated radio-frequency electromagnetic field immunity test

GB/T 17626.4-2008 Electromagnetic compatibility - Testing and measurement techniques - Electrical fast transient/burst immunity test

GB/T 17626.5-2008 Electromagnetic compatibility - Testing and The type code of the lithium-ion battery module consists of four characters: The first character (M): Identification code of battery module; The second character (M): Battery type, lithium-ion manganese oxide battery; The third character (B): Battery type, see 4.1.1;

The fourth character (C): Functional configuration of battery management system (BMS), see 4.1.2.

4.2.2 Electric energy

The rated electric energy is represented by three effective Arabic numerals; the unit is kilowatt·hour (kW·h).

When the electric energy is less than 10 kW·h, keep 2 decimal places, such as 9.85 kW·h;

When the electric energy is greater than or equal to 10 kW·h BUT less than 100 kW·h, keep one decimal place, such as 13.7 kW·h;

When the electric energy is greater than or equal to 100 kW·h, it is represented by a 3-digit integer, such as 143 kW·h.

4.2.3 Nominal voltage

The nominal voltage (U) of the formed lithium-ion battery module, in the unit of V.

4.2.4 Rated discharge current/peak discharge current multiple

The rated discharge current is the rated discharge current (I) of the lithium-ion battery module, in the unit of A.

The maximum discharge current is the product of the rated discharge current value multiplied by the peak discharge current multiple (K), in the unit of A.

4.2.5 Structure code of module box

The structure code of the lithium-ion battery module box shall comply with the requirements in JB/T 11141-2011.

1) The communication interface shall comply with the provisions of Chapter 4 in JB/T 11138-2011.

2) The communication protocol shall comply with the provisions of Chapter 5 in JB/T

11138-2011.

5.4.5.1 Compliance

The compliance requirements for the interface and communication protocol of the lithium-ion manganese oxide battery module are divided into:

a) Compliance requirements for circuit interface and interface protocol, including:

- 1) Compliance of WDT circuit interface and interface protocol;
- 2) Compliance of the interface of the charge and discharge control circuit AND the interface protocol;
- 3) Compliance of the I/O charge and discharge interface circuit and interface protocol.

The circuit interface and interface protocol shall comply with the provisions of 4.2.3, 4.3.2, 4.3.3, 4.4 in JB/T 11138-2011.

b) Compliance of communication interface and communication protocol:

When the CAN communication interface of the lithium-ion manganese oxide battery module is connected to the internal interface of the battery assembly, it is automatically set as the internal interface AND execute the communication protocol of internal interface. When connected to a charge equipment, it is automatically set as a charge and discharge interface, AND execute the communication protocol of the charge and discharge interface. For this reason, the communication interface and communication protocol of the lithium-ion manganese oxide battery module shall meet the following compliance requirements:

- 1) Compliance of internal communication interface and communication protocol;
- 2) Compliance of charge and discharge communication interface and communication protocol.

The communication interface and communication protocol of the lithium-ion battery assembly shall comply with the provisions of Chapter 5 and Chapter 6 in JB/T 11138-2011.
Range: 0 ~ 15;

Definition: The arrangement position of the battery modules in the assembly (the value range is 1 ~ 16). The module which is connected to the negative output terminal of the battery assembly is the module No.1 (the defined value is "0").

c) Number of batteries: Length: 4 bit; Range: 0 ~ 15;

Definition: The number of battery cells, which are connected in series, in the battery module (the value range is 1 ~ 16).

d) Initial address: Length: 8 bit; Range: 0 ~ 160;

Definition: The initial address of the sequence number of battery cell arrangement, which is