

# Power Pack Manual

Important!

This product left our plant in good order and condition. To ensure this condition and risk-free operation, the observance of safety guidelines, warnings and user instructions contained in this manual is mandatory.

## Manual Information

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## 1. General Product Information

The Battery Pack MC164 is a portable power supply, and consists of 7pcs standard 3.6V(18650 ) rechargeable Li-batteries to control PCB. it was developed for use in upholstered furniture for an “off the Power-Grid” operation of electrically adjustable beds and chairs. This device should only be used with the linear drives made by **limoss** and its representatives. The use of battery packs as a power supply for other motors or loads, as well as the installation in other applications, is NOT recommended and will require **limoss**'s written approval for continuation of warranty. The units may be installed and commissioned only by skilled and correspondingly qualified personnel.

## 2. Safety Instructions

Please carefully read and follow the instructions to ensure the safe use of the battery pack. Nonobservance of the safety instructions may cause considerable damage.

### KEEP OPERATING INSTRUCTIONS IN A SAFE PLACE.

- Read these operating instructions carefully prior to using the unit.
- Ensure that every person involved in the use, connection or installation of the operating of the
- device has been sufficiently instructed and always has access to these operating instructions.
- When passing on the battery pack to third parties please ensure to include this documentation.
- During the operation, watch out for unusual noises and uneven functioning. Deactivate the system in the case of unusual occurrences.
- To prevent the accidents from a short-circuiting, it is not allowed to put any metal objects to the contact of the battery terminals
- Do not expose the battery pack to mechanical shock.
- Do not charge the battery overnight, the battery need to be charged under monitor.
- The battery is fully charged when its been delivered to our customer, it can be stored for two years, charging the battery pack every 50-60 days with limoss SMPS is recommended or the battery pack might be damaged.
- We do not recommend the use of batteries with a production date over 5 years, its better FiFo storage to avoid storage aging.

- If the battery falls and is damaged, we do not recommend that you continue to use it.
- Dipping the battery pack into water or other fluids must be avoided at all times. Battery packs without corresponding protection category should always be protected against high levels of humidity and splashing water.
- Storing or operating the battery pack in areas subjected to explosion hazards is prohibited.
- The battery pack must be kept away and protected from fire.
- Opening as well as any modification and remodelling of the battery pack are prohibited and may only be performed by trained specialists.
- Great care must be taken to ensure the correct polarity.
- Never short-circuit the battery pack. It may overheat and cause burns due to excessive current flow.
- Always operate the battery pack exclusively in accordance with this documentation and these specifications.
- Protect the battery pack against severe power surges or mechanical loads. Do not operate the battery pack in the case of visible damage to the housing or cable.
- Children should not use the battery pack. Both during storage and operation ensure that the battery pack is not accessible to children.
- Damaged cables or devices may be replaced or repaired only by the manufacturer, its customer service or other qualified persons.
- If you want to clean the device, you must interrupt the electrical supply. The device may be cleaned only with a dry to slightly moist cloth.
- The battery pack may only be loaded and / or operated with spare parts made by *limoss*, which meet the battery pack's input specification. The use of other power pack is prohibited and may result in personal injury or property damage.
- Operating the battery pack with other than recommended auxiliary devices might cause fire, electric shock and personal injury.
- Storing the main adapter and the battery pack in locations in which the temperature may rise to  $\geq 70$  °C is prohibited (e. g., vehicle interior at high outside temperatures, etc.). Noncompliance will result in impaired performance.
- The battery pack may be charged only at an ambient temperature ranging from 0 °C to 40 °C.
- The charging cable from the battery pack and the power pack may not be excessively overloaded and must be kept away from heat and sharp edges. It is prohibited to carry devices by the cable.
- The battery pack may be charged only in a well-ventilated location.
- It is prohibited to cover the battery pack and power packs with a cloth or similar item during the charging process.
- It is prohibited to dispose of the battery pack as general domestic waste. The device must be disposed of through government-specified locations. The separate disposal and collection of old battery packs serves to prevent environmental health hazards. For detailed information on the disposal of old battery packs, please contact your community or waste disposal service.

### **3. Initial Commissioning**

Please charge your battery pack completely before its initial use. This is vitally important in order to achieve maximum charging capacity. Only then you will be able to use the battery pack at its maximum.

Unit: mm

#### **Caution!**

At first connect the power pack to the battery when charging the power pack. Only then the power pack can be connected to the mains. Noncompliance may damage the unit.

After charging, first disconnect the power pack from the mains and only afterwards from the battery pack.

Replace the battery, if it still has not been fully charged after 24 hours. Continue using the load while charging. In the case of excessive loads, the charging process is interrupted and a temporary shutoff occurs. A suitable power pack must be used if operation is desired while charging. Please contact our Technical Support for details.

#### **4. Maintenance**

Do the following at regular intervals for the housing, cables, and connector of the battery pack:

- Remove dust and dirt with slightly damp cloth
- Make visual inspection by checking for mechanical damage and wear. With regular use, the battery pack's maintenance intervals should not exceed six months
- Check for correct connection and operation

Except as expressly recommended by the manufacturer, the unit's inner parts require no maintenance.

The battery pack contains lithium-Ion rechargeable batteries that must never be deep-discharged. For this reason, the battery pack, when unused, should always remain connected to the power pack to ensure full capacity during the next use of the battery charger. Integrated electronics prevent overcharging of the batteries and switching to 'compensation charge'.

- The batteries must be fully loaded every 3 months in order to prevent deep discharging. A deep discharge can destroy the battery.
- An integrated beeper signals the low charge state during operation. The battery pack should be recharged immediately

#### **Caution!**

In the case of a function error the battery pack must be replaced!

When no current discharges from the battery, e. g. during storage, an acoustic signal sounds in the case of a low charge state! The low charge state is signalled only during operation and / or current drain. Should an acoustic signal still be audible, even though there is no current drain, it is absolutely necessary to replace the battery pack.

Observing the safety instructions in the instruction manual is mandatory!

#### **5. Technical Documentation**

Generally, the battery pack may be operated only in connection to the application designated for *limos* systems. Please consult the nameplate on the power pack housing for mains connecting data. Please consult our technical team, if components of other manufacturers are used.

#### **Caution!**

The battery pack is designed for indoor applications. The following ambient conditions must be maintained.

Charging: 0 °C (32 °F) to 40 °C (104 °F)

Operation: 0 °C (32 °F) to 25 °C (122 °F)

Storage: 0 °C (32 °F) to 55 °C (131 °F)

Air humidity: 20 – 85 %

Devices with special types of protection are appropriately identified in the nameplate.

#### **5.1. Technical Data**

##### **Item Description**

Output voltage @load 3A 16.6V~29V

Rated output current 3.0A

Max output current @ T\_on:2min, T\_off:18min 5.0A

Standard nominal Voltage 25.2V

Standard nominal capacity @load 0.45A 2200mAh

Max charge voltage 29.5V  $\pm$ 0.3V  
(note1)Max Charge current 1 400mA  $\pm$  100mA  
(note2)Max Charge current 2 2A  $\pm$ 0.2A  
Full of Charge output Voltage @ 5mA 27.8V-28.6V  
Charging Time 8hours  
Max output current (continuous work) 0-3A  
Cut off time @5A @25°C Power pack must be stored 24h@ 25°C before test 2-8min  
Max output peak current 21A>Ipeak>15A  
Holding time (@14A, 25°C) >500ms  
Alarm start voltage @ load 3A 21.6V-22.6V  
Cut off voltage @ load 3A 16.60V-21.0V  
Charging & discharging cycle 300times  
Connector  
DC INPUT: NISPT-1 0.1M 18AWG ,Male 01 Pin Connector  
DC OUTPUT: NISPT-1 0.1M 18AWG, Female 01 Pin Connector  
Color Silver/Black  
Certification CE / cTUVus / TUV  
Protection  
Over current (15A-21A)  
Over discharge Voltage@ load 3A(16.6V-21.0V)  
Over charge  
Short circuit protection  
Note1: Max charge current 1 is for the charging through external charger with 4\*1.7 DC-IN jack.  
Note2: Max charge current 2 is for the charging through external battery desktop charger.

## **6. Special Equipment**

### **6.1. By Pass**

SMPS will drive motor first because the voltage of SMPS is higher than accupack, No withdraw any current from the accu pack during charging. Once u disconnect , accu is in use.(when ACCU pack is connecting between SMPS and motor, but the ACCU pack will not break off the connection between SMPS and ACCU pack, then SMPS will drive motor when it is connected to AC power, the ACCU pack can replace SMPS to drive motor when the SMPS disconnect to the power. )

### **6.2. Acoustic Warning**

The acoustic warning signal warns the user that the charge state is very low and the battery pack must be charged.(21.6V-22.6V)

### **6.3. Charging/Capacity LED Display on the Battery Pack**

When charging there are 4 LED will flash in turn, they are indicating 25%50%75%100% capacity, 4 LED light all is on but no flashing means fully charged; How to check the capacity when is not in charging status: Press the button above the 4 LED:

- 1 LED on:25%capacity left
- 2 LED on:50%capacity left
- 3 LED on:75%capacity left
- 4 LED on:100%capacity

### **6.4. LED display on the Shell**

When the external power supply connected to the shell via bypass connector, the LED on the Shell will indicate blue light, if not via bypass connector, the LED will not on.

## **7. Accessories**

### **7.1. SMPS**

The SMPS serves as a power supply for charging the battery pack. Depending on the area of application (country-related variant) a large number of power packs has varying primary voltages that must be ordered accordingly. Observing the input specification is mandatory.

### **7.2. Adapter Cable**

The adapter cable is required for most *limoss* systems, in order to connect the actuator set to the battery pack.

## **8. Repairs**

During the warranty period, products should be sent in for repair, since the warranty is void if the device has been opened. In order to avoid hazards in the further use of the system, all repairs must be performed by authorised service centres. In the case of un-authorized repair procedures and / or modifications, there is the risk of consequential damage. Upon consultation with our service department, replacement components may be shipped in case of need. Please specify the product number and the nameplate.

## **9. Guarantee**

-> General guarantee and conditions apply

## **10. Decommissioning and Disposal**

This product may not be disposed of in household waste! Upon discontinued use, this product must be disposed of as electronic waste in accordance with the disposal regulation of your district / country / state. Storage batteries that have become unusable may not be disposed of in household waste.