



# **Instructions**

Batteries of the company

RKB electronic AG

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# General information

## About this guide

Read this manual carefully.

It contains important information on the installation and operation of the battery system. Pay particular attention to the instructions on safe use. RKB electronic AG shall not be liable for damage caused by failure to observe these instructions. This manual is part of the product. It applies exclusively to the battery system of RKB electronic AG. Keep the guidelines in a safe place and pass them on to the successor when the operator changes.

The installation technician and operator must always have access to this manual. The installation technician must be familiar with these instructions and follow the instructions.

## Package contents

	Package contents	Available as an option
Energy storage system (battery)	<b>X</b>	
Energy display		<b>X</b>
Charger		<b>X</b>
Operating instructions	<b>X</b>	
Safety warning sheet	<b>X</b>	

Elements which are not included in the standard package can be supplied separately.

## Intended Use

The built-in Lithium-Ion phosphate battery may only be recharged via a suitable charger and only operated within the limits specified on the batteries.

The user must ensure that the unit is protected from humidity and moisture.

Any use other than described above can lead to damage to this product and may involve other risks, such as a short circuit, fire, electric shock, etc.

The entire product must not be modified or adapted.

Each modification or change of the battery will result in a loss of warranty and non-liability on the part of RKB electronic AG.

**The user must observe all safety instructions in this manual!**

## Requirements for the operating environment

The room temperature while operating	0°C to 50°C
The room temperature during charging	0°C to 40°C
Optimum room temperature during operation	15°C to 30°C
Relative humidity while operating	25% to 95%
Room temperature at storage	0°C to 50°C
Relative humidity during storage	25% to 95%

Mechanical limited spaces of cells – related to ageing approx. 2-2,5mm per cell.

# Safety

## General safety instructions for the battery pack



**Non-observance of the safety instructions in this section can result in serious personal injury or property damage.**

- Observe the following safety instructions:

- **Risk of explosion**

- The battery pack must not be exposed to violent impact.
- Do not squeeze or pierce the battery pack.
- Do not expose the battery pack to fire.

- **Fire hazard**

- Do not expose the battery pack to temperatures above 50°C.
- Do not place the battery pack next to a source of heat, such as near a fireplace.
- Do not expose the battery pack to direct sunlight.
- Make sure that the battery connectors do not come in contact with conductive objects such as wires.

- **Risk of electric shock**

- Do not disassemble the battery pack.
- Do not touch the battery pack with wet hands.
- Do not expose the battery pack to moisture or fluids.
- Keep the battery pack out of the reach of children and animals.

- **Risk of damage to the battery pack**

- Make sure that the battery pack does not come into contact with liquids.
- The battery pack must not be exposed to strong pressure.
- Do not place objects onto the battery pack.

## Installation



**The battery system must be installed by a trained electrician (according to DIN VDE 1000-10 or BGV A3 accident prevention regulations), which is responsible for compliance with the applicable standards and regulations.**

Make sure that the installation site meets the following conditions:

- The area is absolutely protected against water.
- The floor is even and level.
- There are no flammable or explosive materials.
- The ambient temperature is in the range of 15°C to 30°C.
- Temperature and humidity remain constant.
- The area is free from dust and dirt.

### **CAUTION**

If the ambient temperature is outside the operating range, the battery pack will shut down to protect itself. The optimum temperature for operating the battery pack is in the range of 15°C to 30°C. It may affect the performance and life of the battery pack, if it is frequently exposed to extreme temperatures.

## Charging

Comply with the provisions of DIN 2259 while charging a battery.

Use only the supplied or approved accessory charger to charge the RKB battery pack. Charge the battery completely before using it for the first time.

Ensure adequate ventilation during charging. The optimum temperature range for charging is from 15°C to 30°C. Do not charge the RKB battery near an ignition source or an open fire. There is a risk of explosion!

Ignoring of the mentioned above loading condition will result in a loss of warranty and non-liability on the part of RKB electronic AG.

### **Charging time of the battery:**

Charge the battery completely before using it for the first time. Charging time may vary depending on the charger. For a charging current of 0.2C, the charging time is approximately 8 hours.



# Maintenance and care instructions

## Maintenance

1. The first charging process is crucial! Charge the battery completely before first use. Charge the battery pack only with the provided charger. Do not charge under circumstances which aren't written in the instruction.
2. Lithium-Ion batteries prefer partial discharges; therefore the battery does not have to be unloaded to a 10% charge state to be used as optimally as possible. Each battery has a limited number of charging cycles, but these are related to full cycles. This means that if you only discharge the battery to 50% and recharge it, it counts as half a charge cycle.
3. If the battery is discharged below its rated voltage, this can lead to processes that damage or destroy the battery. The RKB batteries, therefore, have an electronic system which warns the user and switches off the device before such a deep discharge occurs.
4. Frequent overcharging can also permanently damage the battery. Therefore, the charger will automatically stop charging when the battery is fully charged. Do not charge the battery pack by connecting it repeatedly in order to get a supposed higher charging level.
5. Charging should normally only take place at room temperature (about 15°C -25°C). Avoid charging a cold battery, which damages the cells, especially in cold outside temperatures in

the winter. The battery should always be kept at room temperature to be recharged in optimal conditions.

6. High temperatures will also damage the battery. Never leave the battery in the car or in the sun on hot days. At temperatures above + 50° C, the Li-Ion battery loses its capacity and performance.
  
7. If this Lithium-Ion battery is to be stored for an extended period of time, it should have a charging level of 50-75%. The optimum storage is not below 0° C at low temperatures. Storage at 5° C to 10 ° C is optimal. Stored battery packs should be checked every 3 months. Recharge if necessary.
  
8. You should store an unused battery in cool but not cold conditions. Even in the unused state, batteries lose energy. For a Li-Ion battery, the energy loss is about 3% to 5% per month.

## Cleaning

Use a dry cotton cloth for exterior cleaning.

### **NOTE**

**Do not clean the battery with water or chemicals**

## Maintenance

Maintenance of the system is not necessary. The system is maintenance-free.

In the case of malfunctions, please contact our service hotline:

**+49 (0) 7237-486340**

## Disposal

The battery system must not be disposed of with household waste.

Modules, packaging and replacement parts must be disposed of in accordance with the regulations of the country where the equipment was installed.

For more information, see:

<http://www.rkb-ag.de/richtlinien/batterie-entsorgung>

## Emergency situations

In case of emergency, inform the fire brigade and the rescue teams. Battery packs from the RKB electronic AG company usually contain several battery cells. The battery packs are technically designed in such a way that no dangers can arise expect in case of mechanical damage or no proper and approved use.

### Battery leakage

If electrolyte leaks or evaporates from a battery pack, avoid physical contact with the leaking liquid or gas. If a person has come into contact with the leaked substance, immediately follow the steps described below.

#### **Inhalation:**

Evacuate the contaminated area and contact a doctor.

#### **Eye contact:**

Flush eyes with running water for 15 minutes.

Contact a doctor.

#### **Skin contact:**

Wash affected area thoroughly with water. Contact a doctor.

#### **Ingestion:**

Contact a doctor.

<http://www.giftzentrale-bonn.de>

## Fire

Inform the fire brigade and the rescue teams.

To protect yourself from the risk of fire, ensure that the following equipment is located near the battery pack.

- SCBA (self-contained breathing apparatus) and protective equipment complying with the Ordinance on Personal Protective Equipment 89/686 / EEC.
- Novec 1230, FM-200 or carbon dioxide fire extinguishers.

### **NOTE**

**ABC fire extinguishers have no effect when the battery pack is in flames.**

Batteries can explode when heated above 150° C. If possible, place the battery pack in a safe area away from any heat source.

## Moisture or water

If the battery pack is wet or immersed in water, do not allow anyone near it. Contact RKB electronic AG or an authorised dealer for technical support.

## Mechanical and electrical damage

Mechanical damage can be caused by drops, vibrations, squeezing or similar actions. Damaged battery packs are dangerous and must be handled with great care, even if the damage appears to be harmless. Electrical damage can consist of broken cables, damaged insulation, faulty or not fully functional protective electronics and the like. They are no longer suitable for use and can pose a risk to people, property and equipment. In the event of any damage or malfunction, the rechargeable battery pack must be stored outside a building in a fire-proof, weather-protected location, which is inaccessible to unauthorized persons. Subsequently, RKB must be immediately informed in order to coordinate the next steps (Tel. +49 (0)7237 486340). Infringement will result in a loss of warranty and non-liability on the part of RKB electronic AG.

### **NOTE**

**Electrolyte and flammable gases can leak out of damaged batteries. If this occurs, please contact RKB immediately:**

**+49 (0) 7237-486340**

**You will get the correct information for further approach. If you dispatch a battery pack, please take care about the legal guidelines of the transport of dangerous goods.**

# Warranty

## Warranty coverage

RKB electronic AG provides a guarantee for this product if it is installed and operated as described in this manual and in the intended use. The warranty on this product expires immediately if the product is installed differently or otherwise operated as intended. Each reconstruction or change of the battery pack will result in a loss of warranty and non-liability on the part of RKB electronic AG.

## Disclaimer of liability

RKB electronic AG assumes no guarantee and is not liable for direct damage, indirect damage or errors caused by the following causes:

- Transport or storage
- Incorrect installation
- Operation of the product in an unsuitable environment
- Incorrect or improper operation
- Insufficient cooling
- Violation of safety warnings or safety instructions
- Repairs or modifications made by unauthorized personnel
- Fault or overload by terminal/load
- Events of force majeure
- External influences such as unusual physical or electrical stress
- Use of a terminal/consumer which does not comply with the currently applicable regulations
- Use of a charger which isn't enabled for the type of battery of RKB

## Imprint

Subject to technical changes. We accept no liability for printing errors.

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