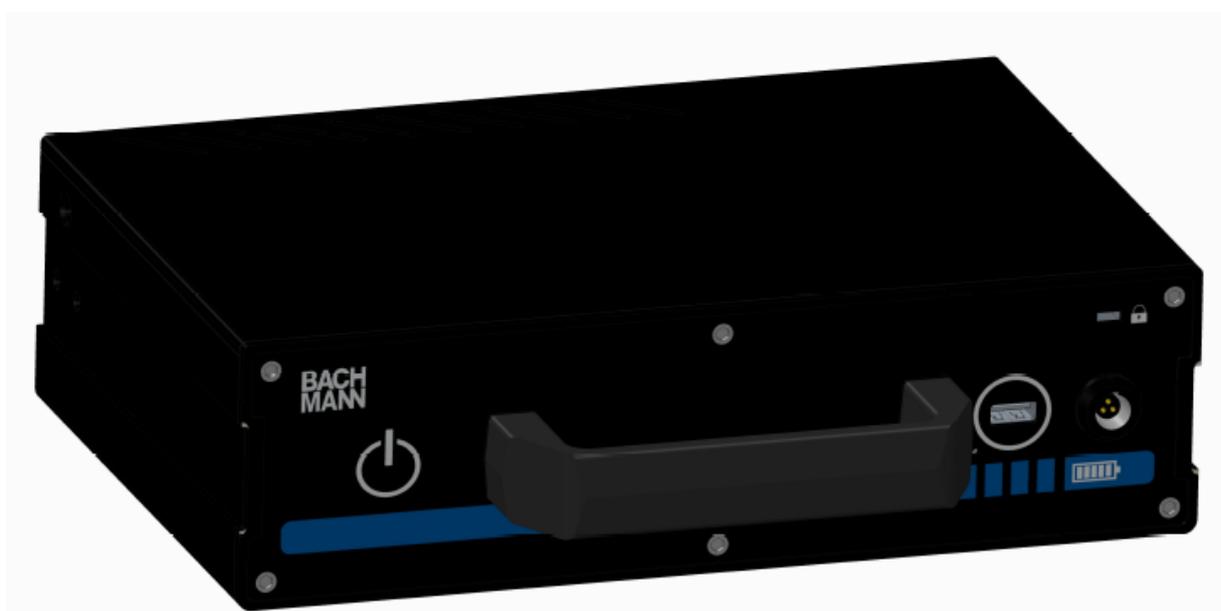


# LI1000

Manual



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# 1. General Safety Instructions

**WARNING!**



Failure to observe the following safety instructions may result in serious injury, damage to the device or property damage.

## 1.1 Intended Use

The battery LI1000 is only to be used with BACHMANN approved devices. Any other use is considered as improper use.

**WARNING!**



Components not approved by BACHMANN for the battery LI1000 can cause fires and explosions. Persons can be seriously injured or killed. Property damage can occur.

- Only connect electrical devices approved by BACHMANN
- Only electrical devices that are ready to plug in and can be connected to the docking station sockets within the specification may be mounted.
- The battery may only be used by trained personnel.

**WARNING!**



If the battery is not used for its intended purpose, persons may be seriously injured or killed. Property damage can occur.

- Use the battery according to the instructions in this manual.

## 1.2 User requirements

**WARNING!**



Users without instruction cannot recognize or estimate the dangers of the battery. The user or other persons can be seriously injured or killed.

- Read, understand and store the instructions carefully.
- If the battery is passed on to third parties, these instructions must also be provided.
- If anything is unclear: Contact BACHMANN Customer Service.
- The user has received instruction from a BACHMANN employee or expert before working with the battery for the first time.

## 1.3 Working area and environment

**WARNING!**



The battery is not protected against all environmental influences.

If the battery is exposed to certain environmental influences, the battery may burn or explode. Persons can be seriously injured or killed. Property damage can occur.

- Protect the battery from heat and fire.
- Protect the battery from direct sunlight.
- Use the battery only in a dry, closed environment.
- Do not expose the battery to dripping or splashing water.
- Store the battery only in a temperature range between 0 °C and 50 °C.
- Do not cover the battery with insulating objects during charging and discharging.
- Do not expose the battery to high pressure.
- Do not place the battery in the microwaves.
- Protect the battery from chemicals and salts.

## 1.4 Safety-conscious state

The LI1000 battery is in a safe condition if the following conditions are met:

- The battery is undamaged.
- The battery is clean and dry.
- The battery works and is unchanged.

**WARNING!**



The battery can no longer function safely in an unsafe condition. The battery may burn or explode. Persons can be seriously injured or killed. Property damage can occur.

- Only work with an undamaged and functioning battery.
- Do not open, disassemble, repair or modify the battery.
- Do not charge or discharge the battery if it has a fault or damage. Please contact customer service.
- If the battery is dirty: Clean the battery.
- Do not touch or short-circuit the battery contacts with metallic objects.
- Do not place any objects on the device.

**WARNING!**



A damaged or defective battery can smell unusually, smoke or burn. Persons can be seriously injured or killed. Property damage can occur.

- In case the battery smells unusually or smokes: Do not use the battery, keep it away from flammable materials and contact BACHMANN customer service.
- If the battery is on fire: Try to extinguish the battery with a fire extinguisher. Contact the fire brigade in an emergency

## 1.5 Transporting

**WARNING!**



The battery is not protected against all environmental influences.

If the battery is exposed to certain environmental influences, the battery may be damaged. Persons can be seriously injured or killed. Property damage can occur.

- Do not transport a damaged battery
- Transport the battery in an electrically non-conductive package.
- If the battery is damaged, contact BACHMANN customer service.

**WARNING!**



The battery may tip over or move during transport. Persons can be injured and damage to property can occur.

- Pack the battery in its packaging so that it cannot move.
- Secure the packaging so that it cannot move.

## 1.6 Storage

**WARNING!**



The battery is not protected against all environmental influences.

If the battery is exposed to certain environmental influences, the battery may be damaged.

- Keep the battery clean and dry.
- Store the battery in a closed room.
- Keep the battery separate from the Mediacaddy.
- Store the battery in an electrically non-conductive package.
- Store the battery in a temperature range between 0°C and + 50 °C.

## 1.7 Cleaning, maintenance and repair

### WARNING!



Sharp cleaning agents, high-pressure cleaners or sharp objects can damage the battery. If the battery is not cleaned properly, components may not function properly and safety devices may be overridden. Persons can be seriously injured.

- Clean the battery as described in this manual.

### WARNING!



If the battery is not serviced or repaired correctly, components may no longer function properly and safety devices may be overridden. Persons can be seriously injured or killed.

- Do not service or repair the battery yourself.
- If the battery needs servicing or repair: Contact BACHMANN Customer Service.

## 2. Other applicable documents

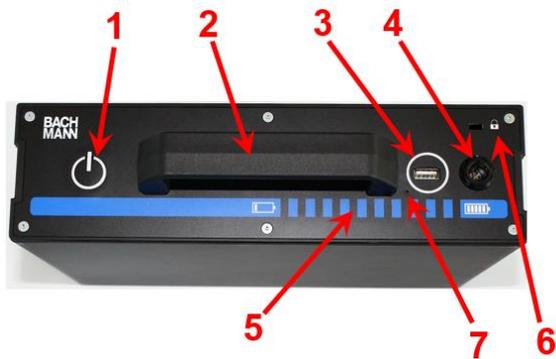
In addition to this manual, read, understand and store the following documents:

- Manual Nova-150SR Charger
- Shipping Lithium Ion Batteries for Cordless Power Tools and Electric Garden Equipment: Implementation of Dangerous Goods Transport Regulations

Manuals and safety information on BACHMANN's independent systems can be found on the Internet at:

<https://www.bachmann.com/en/downloads/technical-documents/>

### 3. Technical overview



- 1) Push button**  
Switches the battery on and off and indicates whether an error has occurred.  
Button lights up "white" → Battery is on.  
The button does not light up → the battery is off.  
Button lights up "red" → There is an error with the battery, see Chapter - Error Handling.
- 2) Handle**  
The handle is used to carry and guide the battery.
- 3) USB bootloader**  
The USB socket is used to update the battery.
- 4) Charging socket**  
The charging socket is used to charge the battery.
- 5) LED bar graph display**  
The LED bar display shows the battery charge status and faults.
- 6) Kensington Lock**  
The Kensington Lock is used to back up the battery.
- 7) Reset-Button**  
The reset button is used to reset the battery electronics.

### 4. Technical data

#### LI1000

##### Electrical parameters

<b>Charging voltage</b>	<b>29,4 VDC</b>
<b>Battery capacity</b>	950 Wh
<b>Battery cell type</b>	Li-Ion

##### Power output

<b>Output 1:</b>	
Unregulated output voltage	20-29 VDC
Output current	12 A
<b>Output 2:</b>	
Regulated output voltage	24 VDC
Output voltage tolerance	+/- 2,5 %
Output current	7,5 A

##### Further product attributes

##### Material

Housing:  
ABS plastic, black similar RAL 9005

##### Scope of delivery

1x Battery  
1x Safety information

**Weight Battery** 4,8 kg

**Product dimensions (B x H x T)** 237x77  
x220

**In carton**

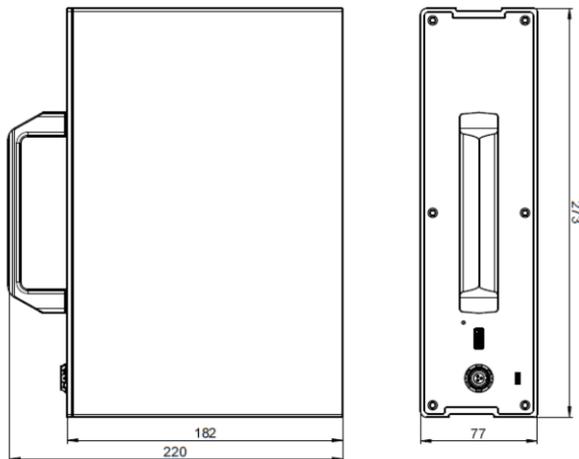
##### Environmental conditions

<b>Protection type</b>	IP20
<b>Permissible storage temperature</b>	0°-50°C
<b>Permissible temperature range discharging</b>	10°- 35°C
<b>Permissible temperature range charging</b>	10°- 35°C

##### Accessoires

**Accessoires:** Nova  
150SR  
Charger

## 5. Dimensions



## 6. Switching the battery on and off

### 6.1 Switching the battery on

The battery can only be switched on if it is completely inserted in the docking station and contacting has taken place.

Follow these steps to switch on the battery

- ➔ Make sure the battery is fully charged.
- ➔ Insert the battery in the docking station.



- ➔ Press the push button

The push button starts to light up in "white".  
The LED segment display is activated and

permanently indicates the remaining charging capacity during operation.

The outputs of the battery are enabled, voltage is applied to the outputs.

### 6.2 Switching the battery off

To turn off the battery, follow these steps:



- ➔ Press the push button while the battery is in the docking station.

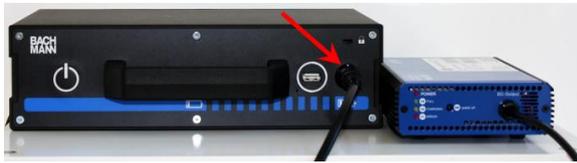
The push button and LED segment display extinguish. The battery is in "Standby" mode. No voltage is applied to the outputs of the battery.

## 7. Charge the battery

### 7.1 Charge the battery

To charge the battery, follow these steps:

- Connect the charger to the socket



- Connect the charger to the charger socket on the front of the battery

Charging starts automatically. The LED segment display on the battery is activated and a running light indicates the current charge level of the battery.

The yellow LED on the charger starts flashing evenly at regular intervals. When the battery is fully charged, the green LED lights up permanently. If there is an error, the red LED lights up.

For further operating instructions on the charger:

- Read manual for NOVA 150-SR

**PLEASE NOTE:** It is possible to charge the battery while it is connected to one or more active consumers. However, the battery and its electronics are not designed for this mode of operation in the long term, so it is recommended to charge and discharge the battery separately for normal operation.

### 7.2 Battery charging times

It takes approx. 8 to 10 hours to charge a completely empty battery.

The first charging process during commissioning can be shorter, as the storage batteries are not delivered completely discharged.

The charging time depends on various influences, e.g. the temperature of the battery or the ambient temperature. Actual charging time may differ from specified charging time.

For further operating instructions:

- Read manual for NOVA 150-SR

### 7.3 Display state of charge

While the battery is not in the docking station or during charging, the current charging status can be displayed.



- Press the push button
- The charge status indicator (see figure) shows the charge status in bright light for ten seconds.

The LED bar segment of the battery displays the current charge status of the battery.

One bar corresponds to approx. 10% of the current state of charge.

## 8. Reset the battery

The battery has a "reset" function which can be used to reset the battery in the event of an error. For more information on error handling, see chapter 16 - Error Handling.



- Press the "Reset" button - Use the supplied reset tool or alternatively a pointed object.

When the system reset is triggered, the battery electronics are reset and restarted.

## 9. Performing a battery firmware update

With an USB stick, a firmware update can be uploaded to the battery via the USB socket on the memory front. This allows the firmware to be updated and optional function extensions to be enabled.

To start the firmware update:



- Plug the USB stick into the USB socket in the battery front



- Press the reset button with the enclosed reset tool.

The circle segment display around the USB bootloader starts to light up white. The update process is started.

Approx. 15 seconds after pressing the reset button, the push button flashes white three times. The firmware update was completed successfully.

As soon as all LED's are extinguished, the USB stick can be removed from the USB socket and the files removed from the stick.

Updates and the necessary files are provided by BACHMANN Customer Service.

## 10. Wake the battery

If a completely discharged battery is not used for a long period of time, the battery store may be deeply discharged. In this case, the battery can no longer be switched on. For more information, see chapter 16 - Error Handling.

To wake the battery, follow these steps:

- Connect the charger to the mains supply.
- Connect the charger to the charger socket on the front of the battery.

If charging does not start automatically:



- Press the „Wake-Up“ button on the charger.

The yellow LED on the charger starts flashing at regular intervals.

The LED segment display on the battery is activated with a time delay and indicates the current charging state of the battery by a running light.

## 11. Storage

For optimal storage BACHMANN recommends storing the battery at a state of charge of approx. 50% (5 blue LEDs).

To prevent aging of the battery cells, BACHMANN recommends storing the battery in the temperature range between 15°C and 25 °C.

- Store the battery in such a way that the following conditions are met:
  - The battery is switched off.
  - The battery is out of the reach of children.
  - The battery is clean and dry.
  - The battery is in a closed room.

- The battery is separate from other devices or chargers.
- The battery is in an electrically non-conductive package.
- The battery is not stored outside the permissible temperature range of 0°C to 50°C.

- ➔ Contact BACHMANN Customer Service and request a return.
- ➔ BACHMANN GmbH will send you non-conductive transport packaging for return, as an alternative you can also return the battery in its original packaging.
- ➔ Before sending, make sure that the battery is completely discharged and switched off.

## 12. Transportation

The battery underlies the requirements for transporting dangerous goods. The battery is classified as UN 3480 (lithium-ion batteries) and has been tested in accordance with the UN Manual for Tests and Criteria, Part III, subsection 38.3. Read the document carefully before shipping the battery.

- ➔ Pull the battery out of the docking station.
- ➔ Ensure that the battery is in a safe condition
- ➔ Pack the battery in such a way that the following conditions are met:
  - The packaging is not electrically conductive
  - The battery cannot move in the packaging
- ➔ Secure the packaging so that it cannot move

## 13. Cleaning

- ➔ Switch off the battery
- ➔ Clean the battery with a dry cloth

## 14. Maintenance and repair

- ➔ Do not service or repair the battery yourself
- ➔ If the battery needs servicing or repair: Contact BACHMANN Customer Service.

## 15. Disposal

Do not dispose of the battery in normal domestic waste. Return the battery to BACHMANN GmbH for correct disposal.

## 16. Error handling

The battery has a red LED, which lights up the push button in the event of an error. The outputs of the battery are deactivated. The following table lists possible errors and their possible solution approach.

Error	Solution approach
<b>Battery cannot be switched on/off.</b>	Possibly the electronics have hung up. Please press the "Reset" button located near the carrying handle. If the battery is switched on, make sure that all connected devices have been switched off properly before pressing the "Reset" button.
<b>Battery cannot be switched on/off. The push button lights red when the switch is pressed.</b>	The battery electronics has detected an error and prevents the release of the battery voltage at the outputs. Check the permitted operating conditions (temperature, output power, operating voltage of the connected devices).
<b>Battery cannot be switched on</b>	The battery has discharged deeper than permitted. An electronic protection function prevents the switching on to prevent further discharge. Connect the charger and press the "Wake Up" button. The yellow LED on the charger, which is now permanently lit, indicates that the battery is being charged. After some time, the yellow LED starts flashing. From this point on, the soft-load mode is terminated, and the battery is loaded normally.

<b>Battery switches off, although the display shows &gt; 0 % charge state (SOC)</b>	Check the environmental conditions. The operating temperature limits may have been exceeded. Restore the permissible operating conditions and allow the battery to rest for a certain period for reconditioning. Then press the "Reset" button. Now you can use the battery as usual.
<b>Battery switches off, although the display shows &gt; 0 % charge state (SOC)</b>	Possibly the battery electronics has broken down, please press the "Reset" button.
<b>Electrical device cannot be switched on although battery is switched on</b>	Check the connection of the device to the battery. The connections may have reverse polarity. CAUTION! The connected consumer may have been damaged. Consult qualified personnel.
<b>Electrical device cannot be switched on although battery is switched on</b>	Check that the battery is completely inserted into the docking station and locked at the locking points.

If the measures listed in the table above do not lead to successful error correction or if the red error display cannot be deleted, please contact BACHMANN Customer Service.

## 17. Customer service

### Contact:

Customer service BACHMANN

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