



## Operating Instructions

BLR 400 Battery Charging and Regenerating System  
(30077)



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# 1 Introduction

The Industrieelektronik Pözl GmbH BLR 400 that you have purchased is a high-quality product. Here is an overview of the most important benefits that you will enjoy:

- Using the BLR 400, you can charge and regenerate any commonly used type of nickel cadmium (**NiCd**) and nickel metal hydride (**NiMH**) rechargeable batteries, e.g. for radios, hand torches rechargeable screwdrivers, mobile phones or camcorders.
- The regeneration program significantly increases the charging and storage capacities of rechargeable batteries that have been used for a long time and are suffering from the memory effect.
- You have available three different charging and regeneration programs for maintaining the connected rechargeable batteries: **REGENERATE**, **BOOST** or **CAPACITY+ CHARGE**.
- You can set three different types of rechargeable batteries: Nickel cadmium (**NiCd**), nickel metal hydride **NiMH**) rechargeable batteries or an individually settable **CUSTOMER TYPE** of rechargeable battery (NiCd, NiMH).
- Automatic setting to the number of battery cells (1 to a maximum of 10 cells; 10 cells is a capacity of 12 volts).
- Switching to trickle charging on reaching the charge capacity. The BLR 400 constantly measures the rechargeable battery during charging. This prevents overcharging.
- Monitoring of the temperature of the rechargeable battery using a temperature sensor to prevent overheating.

- LCD display to indicate operating and error messages.

## 1.1 Liability and warranty

Use the BLR 400 only in accordance with its intended use (see also Chapter **2.1 INTENDED USE**).

The manufacturer warrants the BLR 400 within the scope of the conditions of sale and delivery that apply in each case.

The manufacturer accepts no liability for damage due to ignoring the information in these operating instructions as well as to incorrectly assembling, operating or servicing the BLR 400.

## 1.2 Customer service

If you need technical information or have any queries or need to order spare parts, please contact your local dealer or e-mail our customer service: [office@poelz.at](mailto:office@poelz.at)

To ensure that your inquiry is processed quickly, please state the following information:

- Device type
- Item number
- Serial number

You will find the serial number on the type plate on your BLR 400. See also Chapter **4.2 OPTIONAL ACCESSORIES** for the item numbers of accessory items.

### 1.3 About these operating instructions

These operating instructions are a component of the scope of supply; you must always keep them at the location of the BLR 400.

The guide includes all the information you need for assembling the BLR 400, for operating, servicing, dismantling and disposing of it.

Read the operating instructions carefully before using the system and observe the safety and warning instructions to ensure perfect operation of your BLR 400.

### 1.4 Explanation of symbols and instructions

This symbol warns you of a hazardous location. This signal word describes the severity of the imminent danger.



#### **Danger!**

Personal injury can occur in the case of incorrect handling.

#### **Caution!**

Damage to equipment or property can occur in the case of incorrect handling.



#### **Danger electrical hazard!**

This symbol warns you of an electrical hazard.

Touching live parts can lead to injury or even be fatal.



#### **Fire hazard!**

This symbol warns you of a fire hazard.



#### **Note!**

This symbol indicates tips and useful information on handling the BLR 400 in the best possible way.

## 2 Safety Information

The BLR 400 made by Industrieelektronik Pölz GmbH has been manufactured and inspected in accordance with valid standards and guidelines and recognized technical regulations. However, incorrect use can lead to physical harm to users or damage to the BLR 400 or other material assets.

Always comply to the letter with the safety information and warnings given in these operating instructions.

### 2.1 Intended use

The BLR 400 is intended exclusively for charging, discharging and trickle charging of rechargeable batteries (NiCd, NiMH, 7,000 mA max.)

Any other use is not the intended use and voids the warranty.

Supported types of rechargeable batteries:

- Any commonly used type of nickel cadmium (NiCd) and nickel metal hydride (NiMH) rechargeable batteries, e.g. for radios, hand torches rechargeable screwdrivers, mobile phones or camcorders.
- Do not connect button cells (watch batteries) for charging! Many rechargeable battery packs contain button cells. You may only connect button cells if you have set the **CUSTOMER TYPE** appropriately. Please e-mail our customer service if you want to use our device to charge button cells:  
[office@poelz.at](mailto:office@poelz.at).

### Danger!

Only ever use the BLR 400 to charge the types of rechargeable battery that are described in these operating instructions.



If you use other types of rechargeable battery, there is a risk of injury or damage to property.

### 2.2 General safety information

This BLR 400 is not intended for use by anybody (including children) with physical, sensory or mental challenges, who are inexperienced or do not have adequate knowledge unless they are supervised by a person who is responsible for their safety or who gives them instructions on using the BLR 400.

Do not allow any children to handle the BLR 400 without supervision.

Immediately disconnect the BLR 400 from the mains supply if its mains cable or connecting cable or the device itself is damaged.

## 2.3 Installing the BLR 400

Installation work must only be carried out by qualified people who have been tasked with this work.

Disconnect the BLR 400 from the mains supply before starting installation work.

Inspect the BLR 400 and all its cables before use.

Make the connection to the mains supply in accordance with national installation instructions.

You can connect the BLR 400 to any 230 V/50 Hz socket. Connecting any other mains voltage can damage the BLR 400 and is not permitted.

It is vital that the socket is earthed.

The BLR 400 contains components like switches and relays, for example, that can cause arcing and sparking. Maintain spacing of at least 10 cm to other devices and objects and ensure adequate ventilation.

Ensure that the rechargeable battery that you want to charge is located safely and on a stable base. We recommend using the battery holder that is available as an optional extra (see also Chapter **4.2 OPERATIONAL ACCESSORIES**).

## 2.4 Operating the BLR 400

Only use the BLR 400 at ambient temperatures between -20 °C and +50 °C.

Do not use the BLR 400 in the vicinity of explosive gases, flames and sparks.

Protect the BLR 400 from direct sunlight, heat and extreme fluctuations in temperature.

During charging, ensure adequate ventilation. Do not cover the BLR 400.

No liquids must be able to enter the BLR 400. Disconnect the BLR 400 from the mains supply if liquid or foreign bodies enter the device and have it inspected by the manufacturer or a qualified service engineer.

## 2.5 Dismounting the BLR 400

Disconnect the BLR 400 from the mains supply before dismounting.

## 2.6 Servicing BLR 400

Servicing work must only be carried out by qualified people who have been tasked with this work.

Disconnect the BLR 400 from the mains supply before servicing.

Under no circumstances should you try to open and repair the BLR 400 yourself, since there can be very high residual voltages. Only the manufacturer or a qualified service engineer are allowed to carry out repairs on the BLR 400.



## 2.7 Storing the BLR 400

Store the BLR 400 in a dry safe place that is out of the reach of children.

## 2.8 Alterations and modifications to the BLR 400

Do not make any alterations or modifications to the BLR 400 without the express permission of the manufacturer. Never deactivate the safety devices.

Industrietechnik Pölz GmbH sets the **CUSTOMERTYPE** of rechargeable battery at the factory. You are not allowed to adapt the settings yourself. Before connecting a rechargeable battery for charging, ensure that its type has been set appropriately – this applies in particular to charging of button cells.

Use only original Industrietechnik Pölz GmbH spare parts. If you use third-party spare parts there is no guarantee that they have been designed optimized for application or for safety.

## 3 Description of the Device

### 3.1 Device overview



- ① LCD display to indicate operating and error messages
- ② Connection socket for the 6-pole charging cable
- ③ **BATTERY TYPE** button to set the type of rechargeable battery that you want to charge
- ④ **DISCHARGE** button to set the charging and regeneration program

## 4 Installation



### Danger!

Installation work must only be carried out by qualified people who have been tasked with this work.

### 4.1 Unpacking the BLR 400

Remove the packaging material.



- ① BLR 400
- ② Option: Battery holder with adjustable contact pins that you can use on a universal basis
- ③ 6-pole charging cable with connecting plugs for battery poles and temperature probes
- ④ 3-pole mains cable to connect the device to the mains supply

Check that the contents of the package and the BLR 400 are complete and inspect for possible damage. If any components are missing or are damaged, contact our customer service immediately (see also Chapter **1.2 CUSTOMER** service).

### 4.2 Optional accessories

- Battery holder for universal use with adjustable contact pins (30064)

### 4.3 Installing the BLR 400



### Danger electrical hazard!

Disconnect the BLR 400 from the mains supply before starting installation work.



### Fire hazard!

The BLR 400 contains components like switches and relays, for example, that can cause arcing and sparking.

Maintain spacing of at least 10 cm to other devices and objects and ensure adequate ventilation.



### Note!

Install the BLR 400 such that you can easily read the display and reach the buttons.

Place the BLR 400 on a level surface. We recommend using the battery holder for universal use to set up and connect the rechargeable batteries. You can adjust the holder's contact pins to almost any battery size in common use, e.g. for radios, hand torches rechargeable screwdrivers, mobile phones or camcorders. You can rotate the contact pins vertically and horizontally to any position.

#### 4.4 Connecting the BLR 400 to the mains supply

**Danger electrical hazard!**

Inspect the BLR 400 and all its cables before use.

You can connect the BLR 400 to any 230 V/50 Hz socket. Use the supplied 3-pole mains cable or a similar one. Connecting any other mains voltage or using a different mains cable can damage the BLR 400 and is not permitted.

Make the connection to the mains supply in accordance with national installation instructions.

**Caution!**

It is vital that the socket is earthed.

**Caution!**

With emergency power generators, extreme frequency fluctuations are possible that can damage the BLR 400.

## 5 Operation



### Caution!

Only use the BLR 400 at ambient temperatures between -20 °C and +50 °C.



### Fire hazard!

Do not use the BLR 400 in the vicinity of explosive gases, flames and sparks.

Protect the BLR 400 from direct sunlight, heat and extreme fluctuations in temperature.

You have available three different charging and regeneration programs for maintaining the connected rechargeable batteries: **REGENERATE**, **BOOST** or **CAPACITY+CHARGE**.

### 5.1 Loading and regenerating

1. Connect the BLR 400 to the mains supply (see also Chapter [4.4 CONNECTING THE BLR 400 TO THE MAINS SUPPLY](#)).
2. Use the **BATTERY TYPE** button to choose the type of rechargeable battery that you want to connect to the device to charge. You can choose between:
  - Nickel cadmium (**NiCd**)
  - Nickel metal hydride rechargeable batteries (**NiMH**)
  - Individually specified **CUSTOMER TYPE** (e.g button cells NiCd, NiMH).

### Caution!



Industrieelektronik Pölz GmbH sets the **CUSTOMER TYPE** of rechargeable battery at the factory. You are not allowed to adapt the settings yourself. Before connecting a rechargeable battery for charging, ensure that its type has been set appropriately.

3. Use the **DISCHARGE** button of the charging and regeneration program that you want to use to charge the rechargeable batteries. You can choose between:

- **REGENERATE:** With this setting, the system keeps charging and discharging the rechargeable battery until it no longer measures a rise in capacity. Use this setting for rechargeable batteries that have had several charging cycles and are starting to demonstrate the memory effect.
- **BOOST:** With this setting, the system charges the rechargeable battery until the capacity is reached. Use this setting for good rechargeable batteries with no memory effect.
- **CAPACITY+CHARGE:** With this setting, the system charges the rechargeable battery, discharges it and then charges it for a second time. The system shows the discharge capacity on the display.

4. Connect the contact tips of the charging cable to the positive and negative poles of the rechargeable battery that you want to charge. Connect the red (positive) contact tip to the rechargeable battery's positive pole. Connect the black (negative) contact tip to the rechargeable battery's negative pole. Ensure correct polarity of the connection (see also Chapter **5.4 PROTECTION against polarity reversal**).

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#### Caution!

Do not connect button cells for charging! Many rechargeable battery packs contain button cells. You may only connect button cells if you have set the **CUSTOMER TYPE** appropriately. Please e-mail our customer service if you want to use our device to charge button cells: [office@poelz.at](mailto:office@poelz.at).




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#### Note!

We recommend using the battery holder for universal use to set up and connect the rechargeable batteries. You can adapt the contact pins to any battery size. You can rotate the contact pins vertically and horizontally to any position.



5. Connect the magnetic temperature sensor to the rechargeable battery that you want to charge.

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#### Caution!



Always connect the temperature sensor to the rechargeable battery that the BLR 400 is to charge.

6. Charging of the connected rechargeable battery starts automatically.

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#### Caution!



During charging, ensure adequate ventilation.

Do not cover the BLR 400.

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#### Note!



If the BLR 400 switches off, the rechargeable battery you are using may be defective. Refer to the information on the display that tells you about the status of the rechargeable battery.

7. The BLR 400 constantly measures the rechargeable battery during charging. This prevents overcharging. The display shows the current measured values:
- **Information during charging:** The system displays the voltage (in millivolts), the charging current (in milliamps) and the determined number of cells of the connected rechargeable battery.
  - **Information during discharging:** The system displays the voltage (in millivolts), the charging current (in milliamps) and the determined number of cells of the connected rechargeable battery.

8. If the charging and regeneration program has finished, the system shows **Finished** on the display.
9. Until you disconnect the battery from the device, trickle charging is active to ensure that the rechargeable battery is completely charged.

## 5.2 Monitoring of the temperature

The BLR 400 uses the temperature sensor to constantly monitor the temperature of the rechargeable battery that is being charged. If the rechargeable battery gets too hot, the device interrupts charging. This prevents the rechargeable battery from overheating during charging.

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### Caution!



Always connect the temperature sensor to the rechargeable battery that the BLR 400 is to charge.

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## 5.3 Short circuit-protection

The BLR 400 is fitted with short circuit-protection. If you touch the connecting terminals when the mains cable is plugged in or short-circuit them, the device does not start the charging process.

## 5.4 Protection against polarity reversal

The BLR 400 is fitted with protection against polarity reversal. If you connect the connecting terminals to the rechargeable battery incorrectly, the device does not start the charging process. The display shows an error message.

## 5.5 Starting the charging process after an interruption

Charging starts automatically if the charging process was interrupted or there was a power failure.

## 6 Dismounting

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### **Danger electrical hazard!**

Disconnect the BLR 400 from the mains supply before dismounting.

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Store the BLR 400 in a dry safe place that is out of the reach of children.

If you want to return the battery testing and charging system to Industrieelektronik Pözl GmbH, enclose the returns form (see also Chapter **8.3 RETURNS FORM** (copying template)).

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### **Note!**



If you package the device incorrectly, it can be damaged.

Use only the original packaging materials or ensure that the device is packaged correctly.

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## 7 Service

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### Danger!

Servicing work must only be carried out by qualified people who have been tasked with this work.

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### Danger electrical hazard!

Disconnect the BLR 400 from the mains supply before servicing.

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### 7.1 Maintenance

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### Note!

The BLR 400 is maintenance-free.

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### 7.2 Cleaning

Use a soft, dry cloth to clean the BLR 400. Avoid the use of chemical solvents and cleaning agents, since they can damage the surface and the labeling.

### 7.3 Repairs

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### Danger!

Under no circumstances should you try to open the BLR 400 yourself, since there can be very high residual voltages.



Only the manufacturer or a qualified service engineer are allowed to carry out repairs on the BLR 400.

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## 8 Appendix

### 8.1 Error messages and possible cause(s)

If an error occurs during the charging process, the BLR 400 issues an error message on the display together with a number and displays description of the error as scrolling text on the information line (see also Chapter **8.1.1 ERROR MESSAGES AND POSSIBLE CAUSE(S)**).

Acknowledge the error by disconnecting the rechargeable battery and connecting it again.

If you want to return the battery testing and charging system to Industrieelektronik Pözl GmbH, enclose the returns form (see also Chapter **8.3 RETURNS FORM (COPYING TEMPLATE)**).

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#### Note!



If you package the device incorrectly, it can be damaged.

Use only the original packaging materials or ensure that the device is packaged correctly.

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## 8.1.1 Error messages and possible cause(s)

No.	Error message	Possible cause(s)	Measures
100	<b>Hardware error</b>	Device is defective.	Return the BLR 400 to our customer service (see also Chapter <a href="#">8.3 RETURNS FORM (COPYING TEMPLATE)</a> ).
101	<b>Battery low</b>	Due to the extreme memory effect, it is no longer possible to regenerate the battery.	Interrupt the charging process and try to restart charging of the battery. If the error occurs several times, it is no longer possible to regenerate the battery. Dispose of the battery in accordance with your country's regulations (see also Chapter <a href="#">8.4 DISPOSAL</a> ).
102	<b>Overvoltage on the battery terminals</b>	Contact error of the connection between the contact tips of the charging cable and the battery's poles.  Contact error of the connections in the rechargeable battery between the cells.	Check the connection between the contact tips and the battery holder or the battery poles.  If the contact error occurs in the rechargeable battery, you can no longer charge it. Dispose of the battery in accordance with your country's regulations (see also Chapter <a href="#">8.4 DISPOSAL</a> ).
103	<b>Too many cells or wrong type</b>	On the BLR 400, you can charge rechargeable batteries that have a maximum of ten cells (= 12 volts). It may well be that the number of cells of the rechargeable battery is higher.  Contact error of the connection between the contact tips of the charging cable and the battery's poles.  Contact error of the connections in the rechargeable battery between the cells.	It is not possible to use the BLR 400 to charge and regenerate rechargeable batteries that have more than ten cells.  Refer to the information in error message 102 for the contact errors.

No.	Error message	Possible cause(s)	Measures
104	<b>Maximum charging time exceeded</b>	The charging time of a charging phase was exceeded. The connected battery is defective or its capacity exceeds 15,000 milliamps.	Check the capacity of the connected rechargeable battery. If it is greater than 15,000 milliamps, it is not possible to use the BLR 400 to charge and regenerate the rechargeable battery. It may well be that the rechargeable battery is defective. Dispose of the battery in accordance with your country's regulations (see also Chapter 8.4 DISPOSAL).
105	<b>Capacity is too high</b>	The connected battery is defective or its capacity exceeds 15,000 milliamps.	Check the capacity of the connected rechargeable battery. If it is greater than 15,000 milliamps, it is not possible to use the BLR 400 to charge and regenerate the rechargeable battery. It may well be that the rechargeable battery is defective. Dispose of the battery in accordance with your country's regulations (see also Chapter 8.4 DISPOSAL).
106	<b>Battery temperature too high</b>	The measured temperature of the rechargeable battery is too high.  It may well be that button cells have been connected for charging.	Interrupt the charging process and try to restart charging of the battery. If the error occurs several times, it is no longer possible to regenerate the battery. Dispose of the battery in accordance with your country's regulations (see also Chapter <u>8.4 DISPOSAL</u> ).  Do not connect button cells for charging! Many rechargeable battery packs contain button cells.

No.	Error message	Possible cause(s)	Measures
107	<b>No charging current present</b>	<p>The connection to the rechargeable battery or the charging cable has been interrupted.</p> <p>The fuse inside the device has blown.</p>	<p>Check the connection between the contact tips and the battery holder or the battery poles.</p> <p>Contact Industrieelektronik Pözl GmbH's customer service.</p>
108	<b>Remaining battery capacity is too low.</b>	<p>This occurs in the Capacity+ Charge charging and regeneration program. Less than 90% of the battery capacity that was measured for the first time was reached during two charging cycles.</p>	<p>Check whether the temperature sensor is connected to the rechargeable battery.</p> <p>It may well be that the rechargeable battery is defective. Dispose of the battery in accordance with your country's regulations (see also Chapter 8.4 DISPOSAL).</p>

## 8.2 Technical data

Power supply	230 V
Mains frequency	50 Hz
Power consumption	40 W
Mains fuse	2.5 A slow-to-blow
Charging current	0.1 – 2 A
Discharging current	0.1 – 2 A
Cells	1 – 10
Capacity of rechargeable battery	7,000 mAh max.
Dimensions (W × H × D)	210 × 80 × 245 mm

### 8.3 Returns form (copying template)

To  
Industrieelektronik Pölz GmbH  
Großendorf 122  
A-4551 Ried im Traunkreis

Sender:	Address:
Contact:	Tel.:
Fax:	E-mail:
Industrieelektronik Pölz GmbH device type:	
Industrieelektronik Pölz GmbH serial number:	
Industrieelektronik Pölz GmbH item number:	
Error message:	
Description of error:	
Date:	
Company stamp and signature	

## 8.4 Disposal



### BLR 400

At the end of its useful life, never throw away the BLR 400 in domestic refuse under any circumstances. Consult your local council about the options available for correct environmentally friendly disposal.

### Batteries

Rechargeable batteries must be disposed of correctly. Dispose of rechargeable batteries that can no longer be disposed of at an appropriate collection centre.

### Packaging



Observe locally applicable regulations for correct recycling.









**Central Office**

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