

■ BATTERY CHARGER



GB BATTERY CHARGER
IE Operating instructions
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Read these operating instructions carefully before using the appliance for the first time and preserve this manual for later reference. Pass this manual on to whoever might acquire the appliance at a future date.

BATTERY CHARGER

KH 968

Intended Use

The Battery Charger is intended exclusively for:

- for the charging of rechargeable Ni-Cd and Ni-MH batteries of the sizes AAA / AA / C / D and 9 V Block with standard commercial design capacity.
- for charging both fast and standard rechargeable batteries.
- domestic use only, it is not intended for commercial use.


Items supplied

- Battery Charger KH 968
- Operating manual



Description of the appliance

- ➊ Charging slots for 9 V Block batteries (Charging slots 5 and 6; see fold-out side)
- ➋ Charging slots for AAA / AA / C / D batteries (Charging slots 1 to 4; see fold-out side)
- ➌ LEDs

Technical data

Input Voltage:	AC 100 - 240 V ~ 60/50 Hz
Power consumption :	130 mA
Protection class:	II / 
Operating temperature:	0 ° C - 25 ° C
Storage temperature:	-20 ° C - 50 ° C
Output:	max. 3.34 VA

Output voltages:

- 4 x 1.4 V 
- (Charging slots 1-4)
- 2 x 9 V 
- (Charging slots 5-6)

Charging currents:

- 1000 mA (with 1-2 batteries)
- 500 mA (with 3-4 batteries)
- 2 x 30 mA (at 9 V battery)

Safety instructions

Fire hazard!

Do not place the Battery Charger:

- where it would be subject to direct sunlight. It could happen that the Battery Charger overheats and becomes irreparably damaged.
- in close adjacency to sources of heat. This includes for example ovens, fan heaters and similar appliances, as well as the ventilation openings of electrical devices. The Battery Charger could be irreparably damaged.
- in damp environments or in the vicinity of water. Moisture could permeate into the Battery Charger. There would then be the danger of receiving an electric shock and or causing a fire!
- Only charge rechargeable batteries of the types „Ni-Cd“ and „Ni-MH“. NEVER recharge batteries of other types or non-rechargeable batteries. These are not suitable for recharging. Batteries not suitable for recharging can overheat and explode. It could irreparably damage the Battery Charger and the inserted batteries. There is also a risk of personal injury!

Danger of electrical shock!

Do not place the Battery Charger:

- in the close vicinity of water, e. g. baths and swimming pools. Should water permeate into the Battery Charger, the appliance could be irreparably damaged.
- Remove the power cable from the plug socket before cleaning the Battery Charger. You can thus avoid an electric shock. Should water or moisture permeate the Battery Charger despite observing all precautions, immediately remove the power cable from the plug socket.



This device suitable only for use indoors.

Injury hazard!

- Always store batteries out of the reach of children! There is a danger that children could swallow batteries! Due to the poisonous content of batteries there is a danger to life!
- When charging batteries never leave the Battery Charger unsupervised.
- The batteries could become hot during charging. NEVER touch hot batteries! There is a risk of being burnt! After charging batteries, first of all remove the power cable of the Battery Charger from the plug socket. Then allow the batteries to cool down before removing them from the Battery Charger.
- Should the power cable be defective, immediately arrange for it to be replaced by a service partner to avoid the risk of injury.
- The Battery Charger does not contain any user-serviceable components. Should you open the housing of the Battery Charger, the warranty expires! Should repairs be needed, contact one of our service partners in your area.

- No liability or warranty will be accepted for damage caused by opening the appliance housing, repairs attempted by non-qualified persons or improper use of the Battery Charger!
- Leakage of battery acids can occur, especially with old batteries. You should remove all batteries from the Battery Charger if you do not intend to use it for an extended period. You can thus protect the Battery Charger from leaking battery acids.
- This appliance is not intended for use by persons (including children) with reduced physical, sensorial or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

Dealing with rechargeable batteries

- Do not use damaged (corroded) batteries.
- Should batteries leak, avoid skin contact with them. This leads to skin irritation.
- Should a battery leak into the Battery Charger, clean it with a dry cloth. Wear protective gloves!

Commissioning

- Before taking the Battery Charger into use, check that all items are complete/available and free of visible damage.
- Place the Battery Charger on a straight, level, scratch and slip resistant surface.

i Notice:

This appliance is equipped with non-slip rubber feet. As furniture surfaces may be made of a variety of materials and are treated with many different types of cleaning agents, it cannot be completely ruled out that some substances contain ingredients which may corrode the rubber feet and soften them. If possible, place an anti-slip material under the device.

- Compare the technical data with that of your current mains power supplier. If they are the same, connect the power cable to a mains power socket. The LEDs now light up red and green. The Battery Charger is now ready for use.

Charging batteries

⚠ Danger!

Charge exclusively rechargeable batteries of the types „Ni-Cd“ and „Ni-MH“. NEVER recharge batteries of other types or non-rechargeable batteries. These are not suitable for recharging. They could irreparably damage the Battery Charger and the inserted batteries. There is also the danger of a fire as well as an explosion!

i Notice:

Ensure that the batteries are inserted into the charging slots in accordance with their polarities. Otherwise, the batteries will not be charged.

- Insert the batteries into the charging slots.
- Press the 9 V Block batteries into the charging slot until they audibly engage.

Between 1-6 batteries can be loaded individually:

- 4 x Type C or Type D in the charging slots 1 to 4, or
- 4 x Type AA or AAA in the charging slots 1 to 4, with additionally 2 x Type 9 Volt Block batteries in the charging slots 5 and 6.
- The charging process now begins. The Battery Charger has an LED for each charging slot. The LEDs of the charging slots indicate the charge state of the battery they contain.
- In the first 5 seconds, the Battery Charger performs a quick capacity test:
 - The LED of the charging slot glows green: Capacity over 90 %.
 - The LED of the charging slot blinks green: Capacity between 80 % - 90 %.
 - The LED of the charging slot glows red: Capacity under 80 %.
 - The LED of the charging slot blinks red: The battery has not been correctly inserted into the charging slot or it is defective.

When the capacity of the battery is determined, charging process starts.

The various indicators have the following meanings:

- The LED blinks red and green every second (Not for 9V Block batteries):
The batteries are alternately charged and discharged for about 8 minutes. (Refresh-Function: Older batteries or those that have been stored for a long period will be refreshed.)
- The LED flashes red and green in a 1/2 second rhythm: The batteries will be discharged to help reduce the memory-effect.
- The LED glows red constantly:
The batteries are being charged.
- The LED glows green constantly:
The batteries are fully charged and the Battery Charger has switched over to trickle charge.

Warning!

The batteries could become hot during charging. NEVER touch hot batteries! There is a danger of being burnt!

- Remove the power cable of the Battery Charger from the plug socket and allow the batteries to cool down.

Afterwards you can remove the charged batteries from the Battery Charger.

Calculating the average charging time

Dependant on the type, age and remaining battery charge, hence the charging process takes different lengths of time. The average charging times can be calculated using the following formula.

Note, however, that the times calculated are only indicative.

Current time (Min.) =

$\frac{\text{Capacity of the battery (mAh)} \times 1,5 \times 60}{\text{Charging current of the appliance (mA)}}$

Automatic charging control/ Retention charging

This Battery Charger controls the charging time for rechargeable batteries of the types Ni-Cd and Ni-MH separately. This control is based on the $-\Delta U$ („minus Delta U“) calculation.

In mathematics, with Delta Δ differences are described.

„Minus Delta U“ in this case means a negative voltage difference.

This charge identification makes itself useful in the following effects:

Should a battery be charged with a constant current, its voltage rises continuously. When the battery is full, its voltage reaches a maximum and falls lightly with further current flow. This light fall in voltage is recognised by the charging electronics and the charge process is terminated. The Battery Charger automatically switches to „Retention charging“.

This means that the batteries are no longer being charged with continuous power, but with short power impulses instead. This counteracts the process of self-discharge, thus retaining the batteries in a fully charged condition.

Timer control

In addition, this charger is fitted with a timer control, which after 15 hours automatically switches over to trickle charge. This serves as additional protection against overcharging should the charge terminating device not respond, due to a possibly defective battery.

Troubleshooting

The Battery Charger displays no functions

- Check to see if the power cable is correctly inserted into the power socket.
- Check to see if the power socket is „live“. To do this, connect a different, functioning electrical appliance to the socket.

The inserted batteries are not being charged

- Check that the batteries are being inserted in accord with their polarity.
- Check that batteries suitable for charging have been inserted into the Battery Charger. Suitable for charging are exclusively rechargeable Ni-Cd and Ni-MH batteries of the types AAA/AA/C/D and 9 V Block batteries.
- Remove the power cable from the power socket and allow the appliance to cool down, as the temperature monitoring has possibly activated itself. Temperature monitoring ensures that the charging process is broken off as soon as a battery reaches an excessively high temperature.

Other malfunctions

Make contact with one of our service partners close to you if:

- the malfunction cannot be corrected as described above,
- or, when operating the Battery Charger, other malfunctions occur.

Cleaning

⚠ Danger! Disconnect the power cable before cleaning. There is the risk of receiving an electric shock! Ensure that moisture cannot penetrate into the device during cleaning!

Clean the housing of the Battery Charger only with a dry cloth. For stubborn soiling use a slightly damp cloth.

Under no circumstances use moisture to clean the interior of the charger. Instead, use a soft and clean brush to clean the insides. DO NOT use abrasive or chemical cleaning agents.

Disposal



Do not dispose of the appliance in your normal domestic waste. This product is subject to the European guideline 2002/96/EC.

Dispose of the appliance through an approved disposal centre or at your community waste facility. Observe the currently applicable regulations. In case of doubt, please contact your waste disposal centre.

Battery disposal!

Batteries may not be disposed of with normal domestic waste. All consumers are statutorily obliged to dispose of batteries at the collection point in their community/district or with the original supplier. The purpose of this obligation is to ensure that batteries can be disposed of in an environmentally friendly manner. Only dispose of batteries when they are fully discharged.



Dispose of all packaging materials in an environmentally responsible manner.

Warranty & Service

The warranty for this appliance is for 3 years from the date of purchase. The appliance has been manufactured with care and meticulously examined before delivery. Please retain your receipt as proof of purchase. In the event of a warranty claim, please make contact by telephone with our Service Department. Only in this way can a post-free despatch for your goods be assured.

The warranty covers only claims for material and manufacturing defects, but not for transport damage, for wearing parts or for damage to fragile components, e.g. buttons or batteries. This product is for private use only and is not intended for commercial use. The warranty is void in the case of abusive and improper handling, use of force and internal tampering not carried out by our authorized service branch. Your statutory rights are not restricted in any way by this warranty.

The warranty period will not be extended by repairs made under warranty. This applies also to replaced and repaired parts. Any damage and defects extant on purchase must be reported immediately after unpacking the appliance, at the latest, two days after the purchase date. Repairs made after the expiration of the warranty period are subject to payment.

Importer

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Standard call rates apply. Mobile operators may vary.

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