

TRONIC®

Ⓒ KH 967 Universal Battery Charger
Operating manual



KH 967 Universal battery charger

Keep these instructions for future reference,
and pass them on with the appliance to any future users of the appliance!

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1. Intended use

This appliance is **intended** for charging Ni-Cd / Ni-MH rechargeable batteries of Size Micro AAA, Mignon AA, Baby C, Mono D and 9V battery packs, for personal and household purposes.

It is not intended for charging commercial type batteries (even rechargeable types), or lithium-ion batteries, or for use in commercial or industrial applications.

Risk of injury!

Never load commercially available non-chargeable batteries into the appliance – these can overheat and explode.

2. Safety instructions!

- Never leave the appliance to charge unsupervised. Batteries become hot once they are fully charged. Overcharged or faulty batteries can overheat and explode.
 - Never touch batteries when they are hot – they might explode while they are being taken out. First disconnect the appliance from the power supply and allow the batteries to cool before taking them out.
 - Never expose the appliance to other sources of heat, such as direct sunshine or heaters. This will prevent the batteries from overheating prematurely.
 - Set up the appliance in dry rooms only, never in humid areas. Otherwise there could be danger of death from electric shock.
- If the appliance is not working or is damaged, it should no longer be used. Have it repaired by customer service.
 - If the power cord is damaged: The power cord cannot be repaired – have it replaced by customer service before using the appliance again.
 - Never open the casing, there are no operating elements inside. Warning! Risk of accident!
 - Do not allow children or elderly persons to play with the appliance unsupervised, since these are not always able to assess the dangers correctly. Batteries can represent a considerable danger for children, who might put the batteries in their mouth (they contain poisonous heavy metals), or short-circuit them while playing with them.

3. Technical Data

Power supply: 230V AC / 50 Hz

Power consumption: 8.5 W

Protection class: II

Charging outputs: 4 x 1.2V DC / 2 x 9 V DC

Charging slots.....: for Size AAA, AA, C, D

Charging current at 1.2V: 270 mA quick charge
50 mA trickle charge

Charging current at 9 V: 13 mA

Charging time -
automatic cut-out: Switchover to trickle charge
after 4 / 10 / 18 / 21 h

Discharge current: 170 mA

Supplied with this purchase are the universal battery charging device, this operating manual and a warranty card.



4. Charging batteries

Danger: Only charge batteries identified by the letters "Ni-Cd" or "Ni-MH" .

Never charge other types of batteries, even if these are "rechargeable". Such batteries require a quite different type of technology!

If you place these batteries in Ni-Cd/Ni-MH battery chargers, they can overheat and explode.



a) Inserting batteries

- Place the batteries the right way up, as indicated in the charging slots. Otherwise the charging process cannot start.

Ni-Cd batteries should only be recharged when they are almost completely discharged. Otherwise, a "memory effect" is created, where the batteries reduce their capacity to the lower level at which they are actually used. Ni-MH are not susceptible to the "memory effect".

b) Test the batteries first!



If you do not know how charged or discharged your batteries are, you can test them as follows:

- 1 Move the **switch to the far left**, to the position with the "Test"  symbol.
- 2 The **test indicator light** at the symbol  is lit brightly if the battery is sufficiently charged. If the test indicator light is lit only faintly or not at all, then the battery is almost completely discharged or flat.

Note: Only insert the battery in the slot on the far left is tested. If you would like to test the other batteries as well, they must be inserted one after the other into this slot.
The test function is not available for 9V single block batteries!

c) Discharge Ni-Cd batteries first


Ni-Cd batteries that are not fully discharged should be discharged first, to avoid the possibility of "memory effects".

- ③ If you have inserted up to 4 Ni-Cd batteries, move the **switch to the far right**, to the position with the "Discharge"  symbol.
- ② Allow the Ni-Cd batteries to discharge until the **test indicator light** is barely lit, meanwhile testing the batteries a few times. For this, push the switch all the way to the left, into the position with the symbol  „Test“.

Important: Do not allow Ni-Cd batteries to become completely discharged, as this may ruin them. Therefore, do not allow the batteries to discharge until the test indicator light goes off completely. The discharge function in the four charging shafts is available for 1.2 V batteries only – **not for 9V single block batteries.**

d) Charging batteries

If you have inserted the batteries the right way up, as described at paragraph a) ...

- ④ move the **switch to the center**, to the position with the "Charge"  symbol, and ...
 - connect the **power plug** to the power socket.
- ⑤ If all batteries have been placed correctly, the **charge indicator LED** lights up at each charging slot.

Danger! If a charge indicator LED is not lit, even though the battery has been correctly inserted, then the battery is faulty. **Do not, in any circumstances, attempt to charge a faulty battery.** A faulty battery can overheat and then explode.

- **Only charge with the cover closed.** This will provide sufficient protection against flying battery parts in the event of an explosion due to overheating.

e) Keep to the charging time!

The best protection against battery overheating is **not to exceed the proper charging time**. If you wish to calculate the time exactly, please refer to the technical data for information about the charging current required. You can take the values in the following table as a rough guide:

1.2V Ni-Cd battery Charging time:	300 mAh 2 hrs.	800 mAh 4 hrs.	1800 mAh 10 hrs.
1.2V Ni-MH battery Charging time:	2100 mAh 10 hrs.	3500 mAh 18 hrs.	4000 mAh 21 hrs.
9V Ni-Cd battery Charging time:	100 mAh 11 hrs.		
9V Ni-MH battery Charging time:	200 mAh 22 hrs.		

Warning: Batteries with a capacity of not more than 300 mAh should not be charged for more than 2 hours, as they would become overcharged and overheat.
Not for 9V single block batteries.


All charging slots and 9V connections have separate charging current controls. You can therefore charge completely different batteries at the same time – provided you observe the **different charging times**, required for batteries with different capacities.

f) Calculation of the Charging Time

$$\text{Charging Time (h)} = \frac{\text{Battery Capacity (mAh)} \times 1.4}{\text{Charging Current of the Device (mA)}}$$

g) Charging time: Automatic cut-out

If you have loaded four batteries of the same type in the 1.2V charging slots, you can use the automatic cut-out feature. With this feature, the appliance switches the 1.2V charging slots over to trickle charge after the pre-selected maximum charging time. **This function is not available for the 9V connections.**

- 6 Turn the **knob** to about the time required (you can determine this time by referring to the table opposite)
- 7 At the end of the charging time, the appliance switches over to trickle charge, and the **green LED** indicator at the "Battery"  symbol is fully lit.

5. Taking out batteries

When charging is complete and you wish to take out the batteries, ...

- first disconnect the **power plug from the power socket**,
- wait until the **batteries have cooled**.
- take out the batteries.

6. Cleaning and Care

Clean the appliance only when the plug has been disconnected from the power socket and all the batteries have been taken out.

- Clean the appliance only with a dry cloth. Never use cleaning agents or solvents. These may cause damage to the appliance, and particularly to the labelling and plexiglas cover.
- The terminals do not require cleaning, as they are chrome-plated and therefore dirt resistant.

7. Storage

If you are not going to use the appliance for a long period, disconnect the plug from the power socket and remove all batteries from the charging slots.

Caution: If you do not take out the batteries, deposits can accumulate over time at the terminals, depending on the quality of the battery. Batteries can also leak and damage the appliance.

- Store the appliance in a dry place.

8. Disposal



Do not dispose of the device in normal domestic waste.

Dispose of the device over a registered waste disposal firm or through your communal waste disposal facility. Observe the currently valid regulations. In case of doubt, consult your waste disposal facility.


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.

9. Warranty & Service

The warranty conditions and service address can be found in the enclosed warranty slip.

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