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Datawell Battery charger Manual for the DWR-G4

Type 1: 230V and Type 2: 115V



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1 Introduction

In case the Datawell DWR-G4 is repeatedly used for relatively short periods then the Datacell rechargeable alkaline battery is an attractive alternative to the primary cells. In order to charge these batteries safely, reliable and most of all user friendly, Datawell has designed a battery charger. This charger is perfectly suited for charging the Datacell rechargeable alkaline batteries. The battery charger can charge each cell individually without the trouble of removing the batteries from the buoy. This is accomplished by having an independent circuit for each of the recharged cells.

2 Important safety instructions

- Let batteries acclimatize to room temperature before charging.
- Due to charging control and in contrast to lead-acid batteries, the Datacell rechargeable alkaline batteries do not evolve oxygen at all during charging and only small quantities of hydrogen can be produced. Ventilate the charger room to prevent gas accumulation.
- Do not charge any other chemistry of battery cells. Only charge the Datacell rechargeable alkaline batteries.
- Do not expose the battery charger to rain or moisture due to risk of fire.
- Do not operate the battery charger if it appears damaged in any way.
- For continued protection against risk of fire, always replace the broken fuse with one of the same type and rating of fuse.
- Always disconnect the battery charger from the mains before replacement of the fuse(s).
- A damaged battery may leak. Avoid contact with eyes and skin. If contact occurs, flush immediately with large amounts of water.
- Only use Datawell charger for recharging Datacell rechargeable alkaline batteries. Using any charger which has not been designed for recharging alkaline manganese dioxide – zinc batteries will irreversibly and severely damage the batteries or cause an explosion.

3 Important battery usage instructions

- Avoid keeping batteries in the discharged state.
- Recharge the batteries as soon as possible after having used them.
- Recharge the batteries as often as possible (the more often the batteries are recharged, the better the service life will be).
- As the batteries do not self-discharge at significant rate (about 5% per year), it is not necessary to recharge them before use as long as they have been recharged just after having been discharged.

4 Installation

In order for the battery charger to work in a safe and optimal way follow the instructions as described below.

4.1 Front- and back-panel layout

The battery charger is shown below.

The front panel layout as shown in figure 1 is identical for both types and consists of:

- a connector for connecting the rechargeable alkaline batteries
- 4 LED's to indicate the charging status of each individual cell

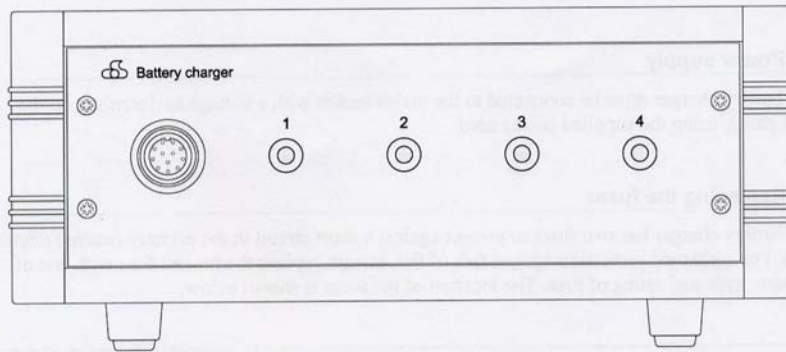


Figure 1. Front panel of battery charger

The back panel layouts for the 115V (type 2) and 230V (type 1) chargers are different (see figures 2 and 3). The back panel consists of:

- a power connector for connecting the mains adapter
- serial number plate

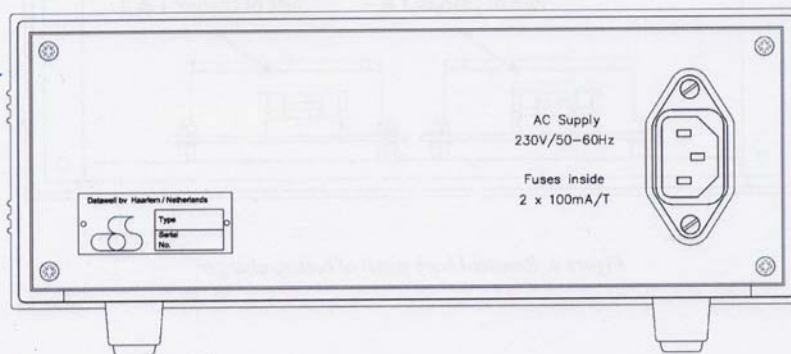


Figure 2. Back panel of battery charger for use in 230V regions

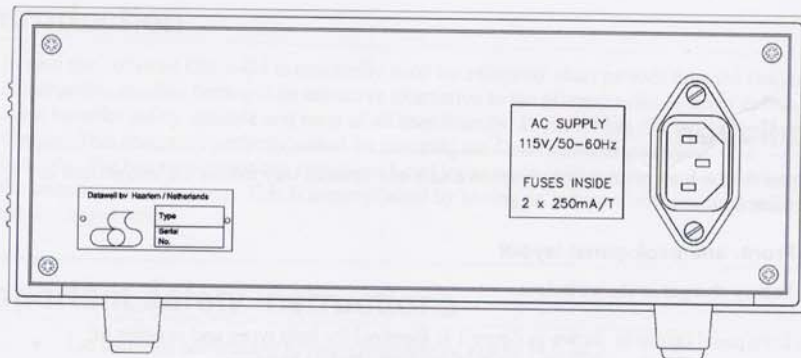


Figure 3. Back panel of battery charger for use in 115V regions

4.2 Power supply

The battery charger must be connected to the mains socket with a voltage as described on the back panel, using the supplied power cord.

4.3 Replacing the fuses

The battery charger has two fuses to protect against a short circuit in the primary (mains) circuit lines. For continued protection against risk of fire, always replace the broken fuse with one of the same type and rating of fuse. The location of the fuses is shown below.

Warning: Always disconnect the battery charger from the mains before replacement of the fuse(s).

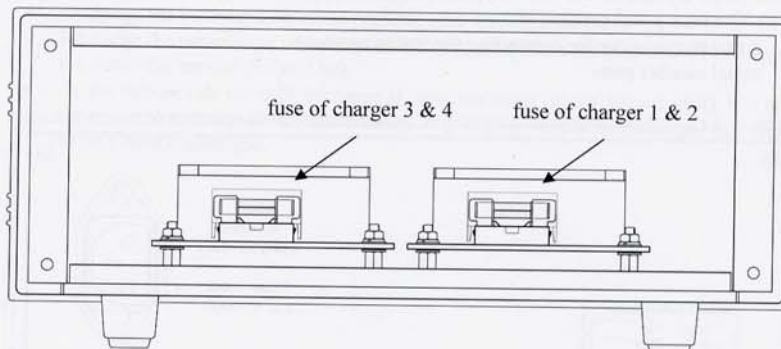


Figure 4. Removed back panel of battery charger

4.4 Specifications

Table 1. Specifications

Battery charger	Max. charge current	720mA
	Max. charge voltage	1.60 Volt
	Number of cells to be charged simultaneously	4 cells

5 Operation

5.1 Cable connection

Connect one side of the battery charger cable, which is supplied with the charger, to the front side connector (see figure 5).
And connect the other side of the cable to the buoy's battery/power connector (see figure 6).

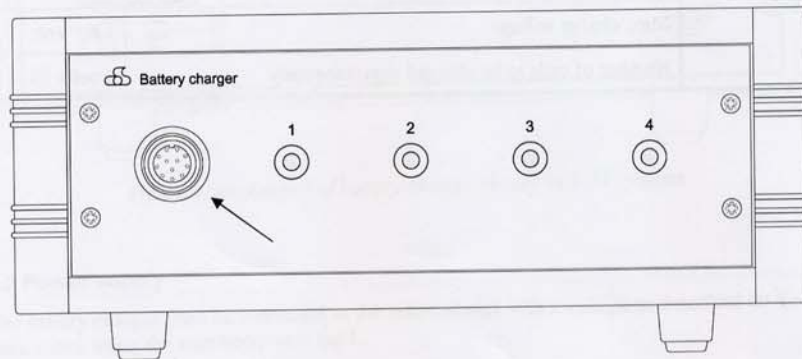


Figure 5. Connector on the front of the battery charger

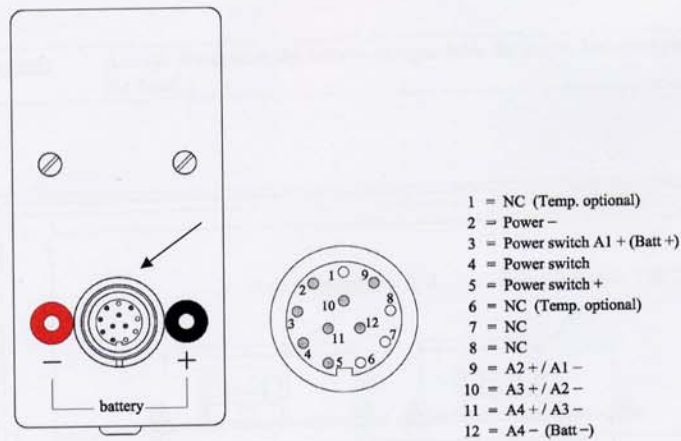


Figure 6. Connector inside the Datawell 0.4m buoy

5.2 Charging status indicator LEDs

When the battery charger has been connected to the mains power supply and has finished charging or is not connected to the rechargeable alkaline batteries, the LEDs will flicker faintly.

When the battery charger has been connected to the mains power supply and is charging the batteries the LEDs will light clearly to indicate that the corresponding cell is being charged. The battery charger has finished charging when all the LEDs are off (flicker faintly).

The estimated charging time depends on the power usage of the buoy. For the correct information regarding the buoy's power usage, please refer to the supplied manual of the buoy.

5.3 Duration of a charging cycle

Each cell is individually charged and monitored. Because the charging process is fully automatic all cells are being charged to 100% and cannot be overcharged.

For a buoy that uses 1000mW the charge time is:

$$\text{Charging time} = 0.5 * \text{Usage time}$$

For a buoy that uses 2000mW the charge time is:

$$\text{Charging time} = \text{Usage time}$$