

Power Pack System

General Description

The packs are self contained rechargeable Nickel Cadmium Batteries with built in charging and protection circuitry. Charging is achieved by plugging a suitable charger (see below) into the charging socket. The output voltage is available through colour coded 4mm terminal posts, red for positive, black for negative, which will accept 4mm plugs, 2mm plugs, crocodile clips, spade terminals or bared wire. The output is short circuit protected via an automatic safety cut-out that resets within 10 seconds of the fault being removed. When a short circuit (e.g. connecting a wire across the terminals without a lamp etc. in the line) occurs an audible warning is also given.

The Power Packs

The packs may be used as a replacement for mains power supplies or primary batteries in many applications and may be recharged up to 1,000 times by connecting to a suitable charger. The output current is limited by internal circuitry to approximately 1A, therefore making the packs safe to use with even young children.

The capacity of each pack is marked on the case in mAh (milli amp hours) e.g. 6V @ 1200mAh. An approximate expected life, before recharging, of a fully charged pack can be calculated from this information.

For example a 6V, 1200mAh pack is to be used to run a 6V, 0.06A lamp
 $0.06A = 60mA$ ($1A = 1000mA$)
dividing 1200 by 60 gives the life in hours = 20 hours

Charging the Power Packs

Because the packs each have their own in-built charger circuitry, they may be charged from a variety of AC or DC power sources. For a 14-16 hour recharge time from flat, a voltage of 13V DC (-ve to plug tip) or 15V AC is required. Lower voltages will extend the recharge time - **voltages higher than 15V may cause damage and should be avoided.** Charging of the pack is confirmed by the charge indicator.

Our **Power Pack Charger** unit is recommended for recharging the packs. The unit will recharge up to four packs simultaneously. The packs do not need to be of the same voltage or capacity and may be charged in any combination. When using our charger, the packs may be safely charged for well over the recommended time (up to a week!) without damage, though in the normal course of events this is not recommended as continual abuse of this type may shorten the number of recharge cycles available from the pack.

To charge a pack, plug a charging lead into the power pack charge socket, plug the other end into a charger socket and switch on the charger. The charger has a yellow led indicator to show that output is available - should this not illuminate, then check that the mains plug fuse (3A or 5A) is OK. When the pack is charging, the charge indicator led on the pack will glow. The pack should then be charged for the appropriate time (7-8 hours for top-up or 14-16 hours from flat). Should the output from the charger unit be short circuited, then the yellow led will extinguish and a warning alarm will sound.

N.B. On receipt, Power Packs should be charged for 16 hours before use. In common with all Nickel Cadmium systems, optimum capacity is achieved after 4-5 discharge cycles.