Pro2000plus

OPERATING INSTRUCTIONS

General information

Congratulations on your choice of the **Robitronic Pro2000plus**, a microprocessor-controlled, high-tech battery charger. This device delivers optimal user-friendliness and maximum reliability. Its built-in multifunction digital display provides you with sufficient information about the charging process and the state of the batteries.
This battery charger was designed especially for charging NiCd and NiMH batteries. A supply voltage of 13.8 VDC allows charging batteries with 4 to 7 cells.

⚠ Warning

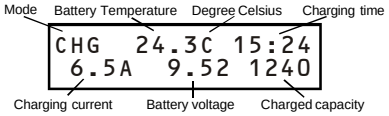
Charging batteries with high current produces a large amount of gas and thus strong gas pressure within the cells. With old or defective batteries, this can cause an explosion of the battery cells. Therefore always maintain a safe distance from the charger and never charge batteries in the vicinity of small children.
When charging from an automobile battery, avoid short circuiting the charging terminals with the automobile chassis. In the battery charger the positive terminal of the supply voltage is connected directly to the positive terminal of the charging terminal; on contact with the automobile chassis, this would cause a short circuit of the automobile battery.

Setup

The supply voltage requires either an automobile battery or a stabilized power supply. When using a power supply, assure that it can supply the necessary current. The supply voltage is connected to the red cable (positive terminal) and the black cable (negative terminal) at the back of the charger.

If the connections are reversed, the circuit is electronically broken within the charger. In this case you need not change a fuse, but only correct the connections.

Multifunction display:



Mode:

OFF	Off - No battery connection	TRK	Trickle Charging
RDY	Ready - Battery connected	ERR	Error – wrong connection
CHG	Charging		Power failure

Connecting the battery

The battery to be charged is connected to the red cable (positive terminal) and the black cable (negative terminal) at the front of the charger. If the battery connections are reversed, a warning signal sounds.

Starting charging

If the battery has been connected correctly, the multifunction digital display indicates "RDY" and the momentary battery voltage. Pressing the *Start* button begins charging. The LED signals that charging is in progress. The multifunction digital display indicates charging current, battery voltage, temperature and momentary charging time.

Ending the charging operation

Depending on the charging mode, the charging operation terminates when the peak voltage or the battery temperature is reached; completion is reported by means of an acoustic signal. The multifunction digital display then indicates the charging time and the charged capacity.
The charging operation also can be terminated manually by pressing the *Start* button again.

Warning signal for supply voltage failure

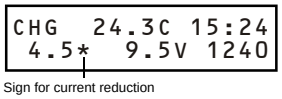
If the supply voltage is interrupted while a battery is in the charger, a warning signal sounds. This proves especially helpful if a power supply is being used and the supply voltage is interrupted by a power failure. An already started charging procedure is continued automat#ically on restoration of the supply voltage.

Adjustment of the temperature display

The multifunctional digital display can be set to show the temperature in either centigrade or Fahrenheit. Adjustment is carried out by holding the *Minus* button while connecting the charger to the supply voltage. This setting is stored until readjustment.

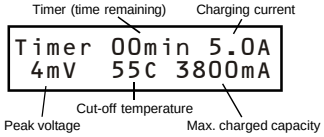
Automatic reduction of charging- current in case of overload

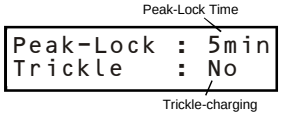
To avoid damage to the charger current is reduced automatically in case of severe heating of the electronics caused by overload. A star (∗) added to the display of the charging-current indicates this case.



SETUP - setting charging parameters

Pressing the *Mode* key switches the charger from charging mode to setup mode; thereupon the charger displays the current settings of the charging parameters (setup display). Each additional pressing of the *Mode* key advances the cursor (a line under the character) to the next parameter. The *Plus* and *Minus* keys allow modification of the parameter selected by the cursor.
To persistently save the charging parameters in the charger, keep the *Mode* pressed and simultaneously press the *Start* key. The charger reports successful storage of the parameters with a signal tone. Thereafter, each time the charger is turned on, it loads the stored charging parameters.
To avoid storing the charging parameters persistently, press only the *Start* key after setting the parameters.





Setting the cut-off method

The charging process is finished when either the set peak voltage, the set cut-off temperature or the set maximum charging-capacity have been reached.
The Peak voltage is indicated at the bottom left corner of the setup display. The voltage drop can be adjusted to match the type of battery to be charged. Delta Peak cut-off can be disabled by setting the peak voltage to "Temp".

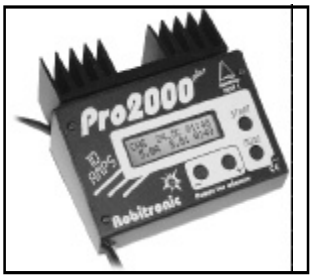
	Charging current	Delta Peak voltage	Cut-off Temp.
Powers GT3000 NiMH	5.0 A	8 mV	45 °C / 113°F
Panasonic 3000 NiMH	4.0 A	4 mV	45 °C / 113°F
Sanyo 3000 NiMH	5.0 A	8 mV	45 °C / 113°F
Sanyo RC2400 NiCd	5.0 A	16 mV	45 °C / 113°F
Sanyo RC2000 NiCd	5.0 A	20 mV	45 °C / 113°F

The maximum charging capacity option largely protects batteries against over-charging when the temperature probe is missing. The charging capacity must be set to the type of battery used; several test charges can help determine this value, and the highest possible value is entered.

In addition, the peak-lock time can be set; here the battery voltage is first tested for voltage drop after the set time; this allows using the delta-peak method to charge even batteries with poor voltage characteristics. **CAUTION:** the grace period is not suited for repeaking batteries.

Timer

A timer can be activated in the setup display (top left of display). The timer value defines the time interval until the automatic start of a charge. Particularly for competition use, this function allows charging your batteries precisely to the minute; you will never again have to start a heat with only half-charged batteries.
Pressing the *Start* key begins the countdown for the timer. The display signals countdown mode with a blinking colon on the time display.
The timer value is reset to zero when charging begins; the timer value cannot be stored persistently.



Specifications

Input voltage ..... 12-15 volts
Charging current ..... 0 - 10 amperes
Number of cells ..... 4 - 7 cells (4 cells max 6A charging current)
..... NiMH & NiCd usable
Temperature probe range ..... 0 - 100°C / 32°F - 212°F
Cut-off ..... delta peak adjustable 4mv – 40mV per cell,
..... battery temperature and capacity cut-off
Multifunction digital display ..... charging current, battery voltage, capacity,
..... charging time, temperature
Additional features ..... timer function
..... alarm for power failure
..... Pole reversal/short-circuit protection
Dimensions (WxDxH) ..... 135 x 126 x 60mm

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