



powerful solutions in battery charging

# **Operating Instructions for PAC1300 Battery Charger**

# General Safety



The charger may only be used for the specified battery types.



This battery charger is supplied with pre-set charging curves that are adapted for the battery types listed in figure 1. Always contact the battery manufacturer to verify that the charging curve is appropriate.



Hydrogen gas is generated when charging batteries, which can cause an explosion.



During and immediately after charging, batteries may not be placed in the vicinity of sparks or open flame.



Do not use the battery charger if it is damaged. Do not touch damaged components. Turn off the input AC voltage immediately and contact service personnel.



The battery charger has high voltage inside the charger case that can cause personal injury or death. The metal casing may only be opened by authorized service personnel.



Disconnect the battery and input AC power before carrying out maintenance or cleaning the battery charger.



The Battery charger must be connected to an earth grounded AC input source.



Batteries should only be charged in a well ventilated area.

# Installation

## Initial Installation

The AC input source to which the charger is to be connected must be capable of supplying the current specified on the charger nameplate.



**CAUTION: TO REDUCE THE RISK OF FIRE, USE THIS CHARGER ONLY ON CIRCUITS WITH BRANCH CIRCUIT PROTECTION (CIRCUIT BREAKER OR FUSE) OF A MAXIMUM OF 20 AMPERES IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, ANSI/NFPA 70 AND ALL LOCAL CODES AND ORDINANCES.**

Avoid the use of extension cords with the charger. The use of an improper extension cord could result in a risk of fire or electric shock. Locate the charger cord such that it will not be stepped on, tripped over or otherwise subjected to damage or stress.

Do not operate this charger if it has been dropped or is visibly damaged in any manner; return to manufacturer for service.

The battery charger should be installed indoors in a low humidity and low dust/airborne particle environment.

If several battery chargers are to be installed next to each other, they may not be located so that warm exhaust air from one battery charger blows into the air intake of another battery charger.

Install the battery charger so that gasses from charging battery do not get sucked in by the battery charger fan.

The battery charger may be mounted horizontally, or suspended on a wall with the accompanying bracket. When mounted on a wall the charger should be placed horizontally to prevent the effects of moisture and dirt. This charger is not intended to be mounted on mobile equipment.



**WARNING: TO REDUCE THE RISK OF AN ELECTRIC SHOCK, KEEP THE CHARGER DRY. DO NOT EXPOSE IT TO RAIN OR STANDING WATER. STORE IN A CLEAN AND DRY LOCATION.**

### Battery Charger Settings

The charger can be set to charge several types of batteries via a rotating selector switch that is located under the label in the lower left corner of the “fan” end of the charger. Battery sizes and types for each setting are listed below:

| Switch Pos. | Battery Type      | 12 and 24V AH Range | 36V/33A AH Range | 48V/25A AH Range |
|-------------|-------------------|---------------------|------------------|------------------|
| 0           | N/A               | Charger Off         |                  |                  |
| 1           | Flooded Lead Acid | 425-550             | 280-360          | 210-275          |
| 2           | Gel Lead Acid A   | 425-550             | 280-360          | 210-275          |
| 3           | AGM Lead Acid     | 425-550             | 280-360          | 210-275          |
| 4           | Gel Lead Acid B   | 425-550             | 280-360          | 210-275          |
| 5           | Flooded Lead Acid | 551-675             | 361-440          | 276-335          |
| 6           | Gel Lead Acid A   | 551-675             | 361-440          | 276-335          |
| 7           | AGM Lead Acid     | 551-675             | 361-440          | 276-335          |
| 8           | Gel Lead Acid B   | 551-675             | 361-440          | 276-335          |
| 9           | Flooded Lead Acid | 336-424             | 200-279          | 170-209          |
| 10 (A)      | Gel Lead Acid A   | 336-424             | 200-279          | 170-209          |
| 11 (B)      | AGM Lead Acid     | 336-424             | 200-279          | 170-209          |
| 12 (C)      | Gel Lead Acid B   | 336-424             | 200-279          | 170-209          |
| 13 (D)      | Other             | ---                 | ---              | ---              |
| 14 (E)      | Not Used          | ---                 | ---              | ---              |

**Figure 1**

# OPERATION

## Charging



**WARNING: IN CASE OF DANGER, DISCONNECT THE CHARGER FROM THE AC INPUT VOLTAGE**

## Connecting a battery

- 1 Check that the battery charger is turned off. The indicator light should be illuminated solid red.
- 2 Check the charger output cables and connector to ensure there is no visible damage.
- 3 Connect the battery to the battery charger.
- 4 The battery charger will start charging automatically after a few seconds. The indicator light should light solid yellow. Charging time will vary depending on battery size, type and level of charge when connected.
- 5 The indicator light will turn solid green when the battery is fully charged.

## Disconnecting a battery



**CAUTION: THE BATTERY SHOULD BE TURNED OFF WHEN DISCONNECTING THE BATTERY. IF THE BATTERY IS DISCONNECTED DURING AN ONGOING CHARGE CYCLE, THE CONTACTS IN THE CHARGING CONNECTOR WILL BE DAMAGED AND SPARK FORMATION CAN OCCUR CAUSING A HYDROGEN EXPLOSION.**

If the battery charger is not in the “Ready” mode, press the switch next to the indicator light to stop charging. When the indicator light is flashing red, disconnect the battery immediately, as the charger will restart after 10 seconds if the battery is still connected.

**Maintenance**

May only be performed by qualified personnel.

**Troubleshooting**

May only be performed by qualified personnel.

**Safety Shutoff**

*Charging can be terminated if:*

The recharged ampere hours exceeds the preset limit.

The charging time for any charging phase exceeds the preset limits.

Voltage and current exceed the preset average limit.

The battery is disconnected without the charger being turned off.

*Charging is temporarily interrupted or reduced when:*

The charger internal temperature exceeds the preset values.

**Error messages**

Charging faults are indicated by a flashing red indicator light.

# CHARGER WARRANTY

ECOTEC warrants that each new and unused PAC1300 battery charger (the "Product") manufactured and supplied with good workmanship is free from any known mechanical defect, provided that;

(A) the product is installed and operated in accordance with the accepted industrial standards and in accordance with the printed instructions furnished by ECOTEC

(B) the product is used under normal conditions for which designed.

(C) the product is not used in a corrosive, abnormally dusty or high humidity moisture condensing environment.

(D) the product is not subjected to misuse, accident or negligence, and the product receives proper care, protection and maintenance under supervision of competent personnel.

## Warranty Terms and Conditions

ECOTEC Battery Chargers are warranted for one (1) year, which begins on the date of shipment from ECOTEC. During said period, warranty covers repair or replacement FOB 262 Fox Drive, Piqua, OH 45356.

**NON-TRANSFERABLE WARRANTY.** This warranty is extended by ECOTEC only to the original user (purchaser) of new equipment from ECOTEC or one of its authorized agents. The product purchased under this agreement shall be used exclusively by the buyer. There shall be no third party beneficiary of this warranty.

**REPAIR LIMITATIONS** ECOTEC has the right to site inspection and judgment of the claimed defects in any product covered by this warranty. ECOTEC's liability is limited to the repair of any defects found to exist by ECOTEC or, at ECOTEC's option, the replacement of the defective product.

**ECOTEC** and its authorized agents shall not be liable for direct or indirect damages in excess of such repair or replacement. In no event shall the purchaser be entitled to recover for contingent expenses from, but not limited to, telephone calls, telegrams, travel expenses, lodging, duties and taxes, labor, rental or replacement equipment, loss of business or profit or other commercial losses.

**CONTINUED USE OF DEFECTIVE PRODUCTS.** The continued use of an ECOTEC Battery Charger that is known to be defective VOIDS ALL WARRANTIES.

## Warranty Terms and Conditions, Continued

**REPAIR OF MODIFIED EQUIPMENT.** Except as authorized in writing the warranty specified does not cover any equipment that has been repaired by any party other than ECOTEC or its authorized agents. Except as authorized in writing the warranty specified does not cover any equipment that has been modified, mechanically or electrically, by any party other than ECOTEC.

**WARRANTY EXPENSE LIMITATIONS.** ECOTEC will limit the warranty expense of all chargers to be paid at a maximum of the original purchase price of the charger.

The provisions of this warranty shall not apply to product in use outside of the continental USA.

Except as stated above, all other warranties and conditions, either expressed or implied, including implied warranties of merchantability and fitness for a particular purpose, are excluded and buyer assumes all risk and liability resulting from the use of the goods. ECOTEC neither assumes or authorizes any persons to assume for ECOTEC any other liability in connection with the sale or use of the goods sold and there are no oral agreements or warranties collateral to or affecting this written warranty.

When installing, servicing or operating these products, safe practices should be used by skilled and qualified technical persons.