



A Benny Lee Company

# PRODUCT USER GUIDE

## PB-360P-24

### High Capacity Smart Charger

### Owners Guide

*(These instructions are intended for use by a technician familiar with electronic products)*

- PB-360P-24 is a 3 stage high capacity “smart” charger designed to provide optimal battery care and maintenance.
- Recommended for use with lead-acid type battery banks from 40 to 125Ah.
- Built-in passive power factor control
- Protection for Short Circuit, Reverse Polarity, Over Voltage, and Over Temperature
- LED Charge Status Indicator
- Internal cooling fan
- 3 year warranty



### DESCRIPTION

The PB-360P-24 is a high capacity smart charger that is designed to provide optimal battery care and maintenance. It is recommended for use with sealed and non-sealed lead-acid type battery banks from 40 to 125Ah. When the PB-360P-24 is in boost charge mode, the LED charge status indicator is red and the internal cooling fan is on. Charging automatically switches from constant current to constant voltage mode, when the charging voltage reaches Vboost. The fan turns off and the LED changes to green when the charge current falls below 10% of the maximum rating. The PB-360P series is protected against over-voltage, over-current, over-temperature, and reverse polarity conditions.

### SPECIFICATIONS

Output Voltage Boost charge .....	28.8 VDC
Output Voltage Float charge.....	27.2 VDC
Output Amperage Max .....	12.5 Amps
Maximum Power, continuous .....	360 watts
Output Voltage Adjustment.....	26 to 28.8 VDC
Input voltage, (Switch selectable).....	90 to132 / 180 to 264 VAC
Input frequency range .....	47 to 63 Hz
Maximum AC current.....	7A/120 VAC; 3.5/230 VAC
Typical Efficiency.....	86 %
Max inrush current, single cycle .....	60 Amps
Short Circuit protection .....	Internal fuse
Overload Protection (operates) .....	110 % (auto-recovery)
Over Voltage Protection .....	31 to 35 VDC auto shutdown, repower on to recover
Fan Control.....	Boost charge=ON, Float charge=OFF
Over Temperature .....	>40 C automatically derate charge current until zero
Working Temperature range.....	-4 F to +140 F (-20 C to +60 C)
Storage Temperature .....	-40 F to +185 F (-40 C to +85 C)
Withstand Voltage .....	I/P-O/P: 3 KVAC
Dimensions.....	10" L x 5.3" W x 1.9"H (235 mm L x 135 mm W x 48.5 mm H)
Weight .....	3.3 lbs

### INSTALLATION WARNING

**WARNING: THERE ARE NO USER SERVICEABLE PARTS INSIDE. HAZARDOUS VOLTAGES EXIST INSIDE THE UNIT. SERVICE AND REPAIR MUST BE REFERRED TO QUALIFIED FACTORY PERSONNEL.**

The individual user should take care to determine, prior to use or installation, whether this device is suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, DuraComm makes no representation or warranty as to the merchantability, suitability or fitness of these units for any specific application.

The battery chargers operate internally from voltages in excess of 300 volts. In rare cases, voltage spikes or transients on the AC power line, or over heating, may cause a component failure in the power supply. Overloading the output will cause the over current feature to operate. In either case, the cause must be determined and corrected.

**Failures require investigation as to cause and/or repair of the unit.**

## **INSTALLER NOTES**

The PB-360 Series Charger is only suitable for lead-acid type batteries.

The charger should be installed in a place with good ventilation and low moisture. Exposure to rain or snow is strictly prohibited.

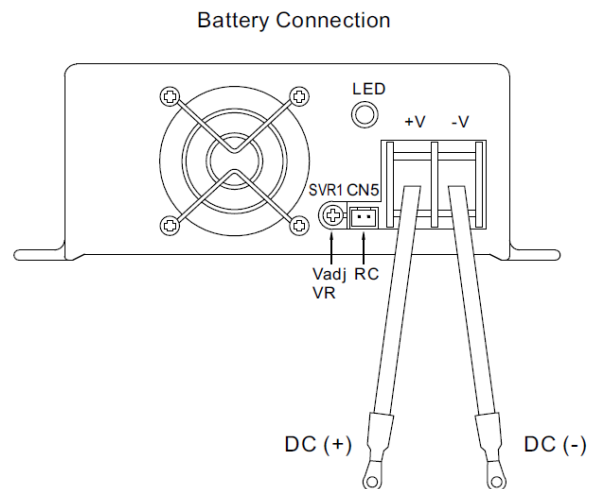
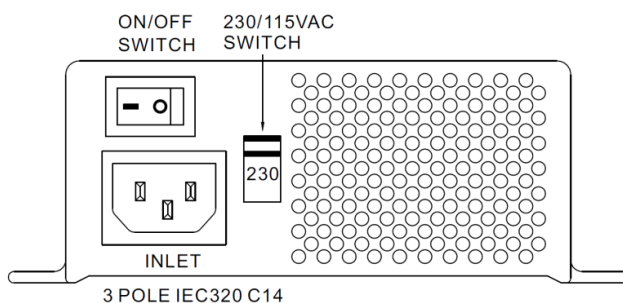
The PB-360 charger is equipped with a remote control (R.C.) connector. Open= Normal operation, Short= Stop Charging.

The output voltage of the charger is preset to 28.8 VDC (Vboost) & 27.2 VDC (Vfloat). Output voltage of the charger can be adjusted through the Vadj with batteries disconnected, and this will affect both the value Vboost and Vfloat. Please consult the battery manufacturer for the suitable charging voltage before making any adjustment.

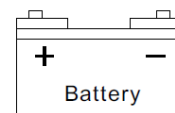
**WARNING:** Be certain to locate the battery in a well ventilated area. During recharging, small amounts of hydrogen gas may be produced. Hydrogen gas is highly flammable and under the right conditions, explosive.

## **PB-360-24 WIRING LAYOUT**

Make sure the charger is off and choose suitable wires to connect the charger and batteries based on the charging current (12.5 Amps). Charger output (+) should be connected to the (+) terminal of the battery and charger output (-) should be connected to the (-) terminal. Select the correct input VAC (115 or 230) with the switch located on the charger. Set the ON/OFF switch to ON and check operation of the LED (RED=charging, GREEN= battery is full).



**Warning**  
Please make sure the polarity of the battery is connected correctly!



## **CONDUCTOR PRETREATMENT**

All kinds of copper conductors can be clamped without treatment. DO NOT solder tin stranded conductors. The solder yields and fractures under high pressure. The result is increased contact resistance and excessive temperature rise. Additionally, corrosion has been observed due to the fluxes. Notch fractures at the transition from the rigid tinned part to the flexible conductors are also possible. Ferrules can be used as a protection when wiring stranded conductors. Copper ferrules prevent the current transfer from being influenced by dissimilar metals and remove the risk of corrosion. Always use the correct tool to crimp the ferrule.

**RECOMMENDED COPPER WIRE SIZE FOR CURRENT CAPACITY**

*(Insulated Wire, Single Conductor in free air)*

<b><u>Current Level in Amperes</u></b>	<b><u>Wire Size</u></b>
<i>&lt;7 AMPERES</i>	<i>20 AWG Up to 5 feet 18 AWG Up to 10 feet</i>
<i>14 AMPERES</i>	<i>18 AWG Up to 5 feet 16 AWG Up to 10 feet</i>
<i>20 AMPERES</i>	<i>16 AWG Up to 5 feet 14 AWG Up to 10 feet</i>
<i>30 AMPERES</i>	<i>14 AWG Up to 5 feet 12 AWG Up to 10 feet</i>
<i>40 AMPERES</i>	<i>12 AWG Up to 5 feet 10 AWG Up to 10 feet</i>
<i>50 AMPERES</i>	<i>10 AWG Up to 5 feet 8 AWG Up to 10 feet</i>
<i>70 AMPERES</i>	<i>8 AWG Up to 5 feet 6 AWG Up to 10 feet</i>
<i>100 AMPERES</i>	<i>6 AWG Up to 5 feet 4 AWG Up to 10 feet</i>

**LIMITED WARRANTY**

*DuraComm warrants to the initial end user, each power supply manufactured by DuraComm to be free from defects in material and workmanship, when in normal use and service for a period of three years from the date of purchase, from an authorized DuraComm dealer.*

*Should a product manufactured by DuraComm fail or malfunction due to manufacturing defect, or faulty component, DuraComm, at its option, will repair or replace the faulty product or parts thereof, which, after examination by DuraComm, prove to be defective or not operational according to specifications in effect at the time of sale to the initial end user. The product that is replaced or repaired under the provisions of this warranty, will be warranted for the remainder of the original warranty period, only, and will not extend into a new three year warranty period.*

*The limited warranty does not extend to any DuraComm product which has been subject to misuse, accidental damage, neglect, incorrect wiring not associated with manufacture, improper charging voltages, or any product which has had the serial number removed, altered, defaced, or changed in any way.*

*DuraComm reserves the right to change, alter, or improve the specifications of its products at any time, and by so doing, incurs no obligation to install or retrofit any such changes or improvements in or on products manufactured prior to inclusion of such changes.*

*DuraComm requires any product needing in or out of warranty service to be returned to DuraComm. All requests for warranty service must be accompanied by proof of purchase, such as bill of sale with purchase date identified. DuraComm is not responsible for any expenses or payments incurred for the removal of the product from its place of use, transportation or shipping expenses to the place of repair, or return expenses of a repaired or replacement product to its place of use.*

*The implied warranties which the law imposes on the sale of this product are expressly LIMITED, in duration, to the three (3) year time period specified herein. DuraComm will not be liable for damages, consequential or otherwise, resulting from the use and operation of this product, or from the breach of this LIMITED WARRANTY.*

*Some states do not allow limitations on the duration of the implied warranty or exclusions or limitations of incidental or consequential damages, so said limitations or exclusions may not apply to you. This warranty gives you specific legal rights which vary from state to state.*

*This warranty is given in lieu of all other warranties, whether expressed, implied, or by law. All other warranties, including WITHOUT LIMITATION, warranties of merchantability and fitness or suitability for a particular purpose, are specifically excluded. DuraComm reserves the right to change or modify its warranty and service programs without prior notice.*

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