



1U Rack Mount Battery Charger with Alarms

PSBC-160012NFP, PSBC-160024NFP, PSBC-160048NFP

- *Active Power Factor Correction*
- *3-Stage 1600-Watt Smart Battery Charger*
- *Battery Under Voltage / Battery No Connection / Short Circuit / Over Voltage / Over Temperature Protection*
- *Form C Alarm Outputs for AC Fail, Charger Fail, 70% Battery Discharge, and Battery Fail*



| Model | PSBC-160012NFP | PSBC-160024NFP | PSBC-160048NFP |
|----------------------------------|---|-----------------|----------------|
| Charger Voltage, Boost | 13.8 VDC | 27.6 | 55.2 |
| Charger Voltage, Float | 13.2 VDC | 26.4 | 52.8 |
| Maximum Charger Current | 100 Amps | 55A | 27.5A |
| Maximum Power | 1600 Watts | | |
| External Battery Type | Lead-Acid/AGM (Not Provided) | | |
| Suggested Battery Capacity | 330 - 1000 Ah | 180 - 550 Ah | 90 - 270 Ah |
| LVD Relay Current Max | | | |
| LVD Disconnect/Reconnect | 10 / 12.5 VDC | 20 / 25 VDC | 40 / 50 VDC |
| Internal OR-ing Diode | Prevents Charger from powering external load when external power supply is set to 14.2 VDC or higher. Automatically powers load when external power supply fails. | | |
| AC Input Voltage | 90 - 264 VAC Auto-Ranging, 47-63 Hz | | |
| Typical Efficiency | 91% | 92.5% | 93.5% |
| Maximum AC Current | 14 A / 115 VAC and 8 A / 230 VAC | | |
| Max Inrush Current, single cycle | 35 A / 230 VAC | | |
| Short Circuit Protection | Shutdown o/p voltage, Repower On to Recover | | |
| Over Voltage Protection | 15.75 - 18.75 VDC | 31.5 - 37.5 VDC | 63 - 75 VDC |
| Over Temperature Protection | Auto Output Shutdown, Auto recovery after Temperature goes Down | | |
| Working Temperature Range | -22 to 158 F (-30 to 70 C) | | |
| Storage Temperature Range | -40 to 185 F (-40 to 85 C) | | |
| Withstand Voltage | I/P-O/P: 3KVAC, I/P-FG: 1.5KVAC, O/P-FG: 1.5KVAC | | |
| Product Dimensions | 1.75 H x 19 W x 13 D (in), 19" Rack Mount 1U Height | | |
| Shipping Dimensions | 2.0 H x 22 W x 15 D (in) | | |
| Shipping Weight | 12.0 lbs | | |

*NOTE: Specifications are subject to change without notice.

Section 1 | Important Safety Instructions

THESE INSTRUCTIONS ARE INTENDED FOR USE BY A TECHNICIAN FAMILIAR WITH ELECTRONIC PRODUCTS.

WARNING: There are no user serviceable parts inside. Service must be referred to a qualified factory-trained technician. DO NOT operate the unit in a hot, enclosed environment or compartment. Be sure adequate ventilation for cooling is provided since heat buildup will shorten component life.

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

Section 2 | Product Overview

The PSBC-1600XXNFP are rack-mount battery chargers that provide charging for up to 1000 Ah of battery backup at 12 VDC. It includes an intelligent battery charger that comes with a built-in active power factor correction and is microprocessor controlled. The PSBC-1600XXNFP also comes with protections for battery under voltage, battery no connection, short circuit, over voltage, and over temperature.

See www.duracomm.com for more information.

Section 3 | Installation

The outputs are NOT referenced to the chassis. Using battery capacity larger than the suggested value will not lead to damage of the battery. The main drawback is it may take longer to fully charge the battery.

If you are unsure about max allowable charging current of your battery, please refer to the technical specification of the battery or consult its manufacturer. This unit is designed for charging lead acid batteries and must be installed in a dry and well-ventilated area.

The cables between charger and battery should be kept as short as possible to prevent excessive voltage drop. Too much voltage drop will lead to longer charging periods. Refrain from connecting new and old batteries in series. Charger should be in the OFF mode before making battery connection or disconnection.

Conductor Pretreatment

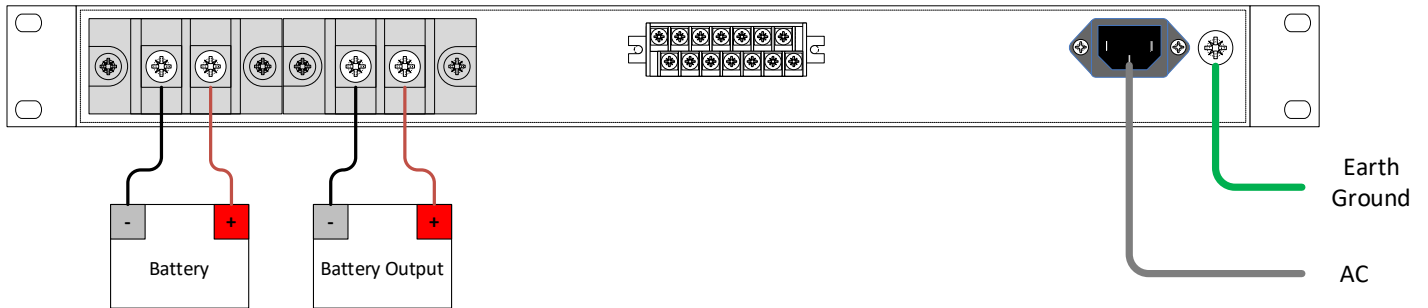
All kinds of copper conductors can be clamped without treatment. DO NOT solder tin stranded conductors. The solder yields and fractures under high pressure. The result is increased contact resistance and excessive temperature rise. Additionally, corrosion has been observed due to the fluxes. Notch fractures 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)

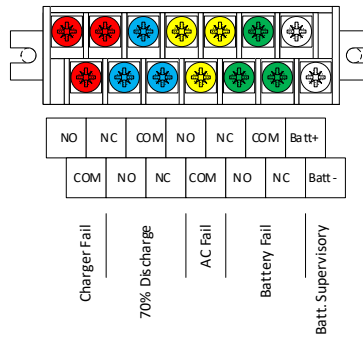
| Current Level in Amperes | Wire Size Requirements According to MIL-W-5088B | |
|--------------------------|---|---------------|
| | Up to 5 feet | Up to 10 feet |
| <7 AMPERES | 20 AWG | 18 AWG |
| 14 AMPERES | 18 AWG | 16 AWG |
| 20 AMPERES | 16 AWG | 14 AWG |
| 30 AMPERES | 14 AWG | 12 AWG |
| 40 AMPERES | 12 AWG | 10 AWG |
| 50 AMPERES | 10 AWG | 8 AWG |
| 70 AMPERES | 8 AWG | 6 AWG |
| 100 AMPERES | 6 AWG | 4 AWG |

Rear Panel Wiring



Rear Connectors

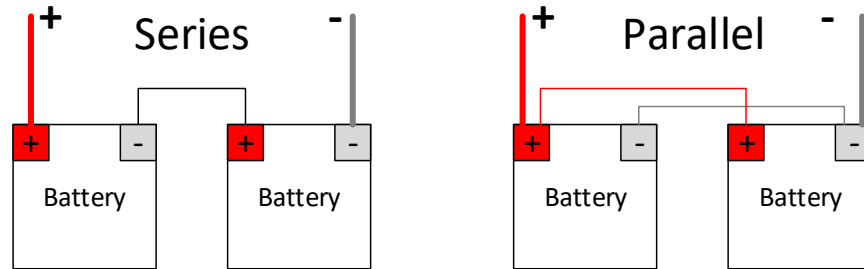
Alarm Contact



Battery Configuration

When two batteries are connected in series, the voltage is doubled, but the capacity (Ah) remains the same. For example, 2 x 12V 100 Ah batteries connected in series equals 24V 100Ah.

When two batteries are connected in parallel, voltage remains the same and the capacity (Ah) is doubled. For example, 2 x 12V 100Ah batteries connected in parallel equals 12V 200Ah.

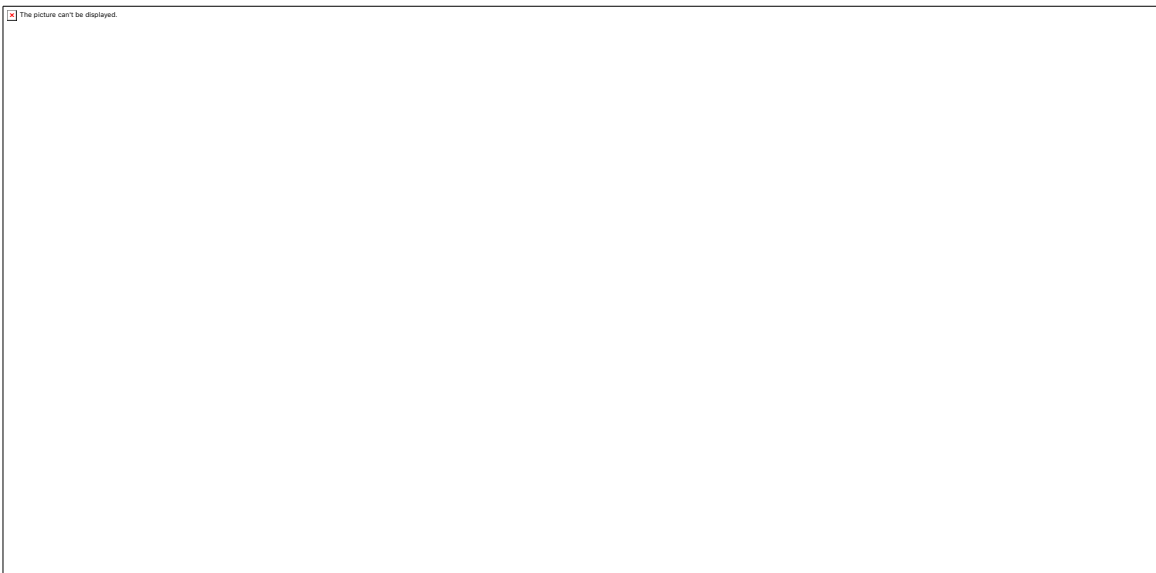


Battery Charging Curve

Battery charger is fully automatic and is designed for the use with a deep-cycle flooded lead-acid battery. To optimize charging condition to extend the service life of a lead acid battery, the charger follows a 3-stage charging schedule as shown on the battery charging curve: 1) constant current stage; 2) constant voltage stage; 3) float charge stage.

During Stage 1, the battery is charged at a constant current to about 70 % of its Ah capacity. Since the battery accepts more current when it is discharged, the battery is charged relatively quicker (Ah/h) before it reaches the next charging stage. The switch from Stage 1 to the Stage 2 occurs seamlessly when the battery reaches the set voltage limit (V_{boost}). At Stage 2, the battery is charged at constant voltage while the current begins to drop as the battery starts to saturate. At about 95-98 % battery capacity, the charger enters Stage 3. The charger drops to float charging voltage (V_{float}) for the last few Ah and to keep the battery topped off while compensating for self-discharge that all batteries exhibit.

Please contact DuraComm regarding other types of battery charging requirements.



Section 4 | 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 the manufacturer, 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 a 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 that 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.

Section 5 | Contact Us

Location

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