



A Benny Lee Company

# PRODUCT USER GUIDE

## SC-12

### Smart Charger Series

### Owners Guide

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

- Unit monitors batteries for optimal charging and maintenance
- Highly recommended for deep cycle or gel cell batteries
- Extended battery life
- Indicator light for battery conditions
- 110 / 220 VAC switch selectable
- Battery polarity protection
- Approvals: UL, CUL, CE, TEV
- Manufactured to ISO 9001 Quality Assurance
- 3 year warranty



### DESCRIPTION

The SC series is designed to auto-charge and maintain Gelled electrolyte (Gel-Cell) and liquid electrolyte lead-acid batteries. The SC series is a constant current monitoring charger for the charge and maintenance of fixed location UPS, emergency lighting systems, and telecommunications battery backup systems. The charger is protected against over loading by deep discharge start circuitry with auto shut down due to over-voltage, over-temperature, short circuit and reverse polarity. Switch mode circuit design provides high efficiency, compact size, cool operation and high reliability. Dual color red/green LED provides a visual indication of charger status.

### SPECIFICATIONS

Output Voltage .....	13.8 VDC
Maximum Power, continuous .....	120 Watts
Maximum output current .....	7 Amps
Input voltage range .....	90-130 or 180-260 VAC
Max inrush current, single cycle .....	35 Amps
Input frequency range .....	47-63 Hz
Typical Efficiency .....	80%
Short Circuit protection .....	Foldback Limiting
Overload Protection (operates).....	typical 105-150 pct
Fan Control .....	High rate charge = ON
Over Temperature .....	>195 F (90 C) auto output shutdown
Working Temperature range .....	-4 – 140 F(-20 -+ 60 C)
Storage Temperature.....	-40 – 185 F (-40 - +85 C)
Dimensions .....	2 H x 4 W x 7 D inches, nominal
Weight.....	2.5 lbs, nominal

## **INSTALLATION WARNING**

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 great variation, DuraComm makes no representation or warranty as to the merchantability, suitability or fitness of these units for any specific application.

The chargers operate internally from voltages in excess of 12/24/48 volts. In rare cases, voltage spikes or transients on the AC power line, or over heating, may cause a component failure in the charger. 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.

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

**DO NOT** block any of the cooling vents on the sides and always allow adequate ventilation by not installing the unit inside tightly closed spaces. Physical mounting position is not critical but the cooling vents and the cooling fan must not be blocked. Make certain the input voltage switch is set to the correct voltage BEFORE applying AC power.

## **INSTALLATION NOTES**

Make certain the charger is OFF. Attach the color coded leads to the battery: red to positive and black to negative. Select the proper input voltage prior to plugging the charger to the AC mains.

Turn the charger ON. The Status LED will light. Red indicates high rate charging and the fan will start turning. If the battery is in a fully charged state the LED will change to green after a few minutes indicating a float charge rate and the fan will stop turning. During the transition time from high rate to float rate a bicolor flash from the LED may be observed.

If the LED flashes green, turn OFF the charger and check your wiring and battery connections. The LED may also flash green when first connected to a fully charged battery.

When charging series connected batteries identical batteries must be used.

## **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>
<7 AMPERES	20 AWG Up to 5 feet 18 AWG Up to 10 feet
14 AMPERES	18 AWG Up to 5 feet 16 AWG Up to 10 feet
20 AMPERES	16 AWG Up to 5 feet 14 AWG Up to 10 feet
30 AMPERES	14 AWG Up to 5 feet 12 AWG Up to 10 feet
40 AMPERES	12 AWG Up to 5 feet 10 AWG Up to 10 feet
50 AMPERES	10 AWG Up to 5 feet 8 AWG Up to 10 feet
70 AMPERES	8 AWG Up to 5 feet 6 AWG Up to 10 feet
100 AMPERES	6 AWG Up to 5 feet 4 AWG Up to 10 feet

## **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 year 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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