



A Benny Lee Company

# PRODUCT USER GUIDE

## DPS-27-25

### Utility AC to DC Power Supply

### Owners Guide

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

- Filtered & Regulated - The unit will maintain regulation with input voltages from 108-132 VAC and an input frequency range of 47-63 Hz
- Automatic shutdown on low AC voltage
- Optional 3-stage IQ4 Smart Charge control module
- LED diagnostic indicators on optional IQ4 models
- Forced Air Cooling
- Fused Output
- UL Listed
- 3 year warranty



### DESCRIPTION

The DPS-27-25 power Converter/Battery Charger converts 108-132 AC voltage to 27.2 DC voltage for both DC load operation and 24V battery charging. As a power supply, the DPS-27-25 will supply up to 25 amps to equipment designed to run on 24 Volt DC systems.

As a battery charger with optional IQ4 control module, the unit will maintain the battery, delivering its full-rated current when the battery capacity falls sufficiently low. The voltage is set to deliver its maximum current for the necessary period of time to minimize stress to the battery caused by heating of its cells. This helps to ensure the longest possible life of the battery. Over time, as the battery nears its full capacity, the DPS-27-25 will automatically drop the current, providing a float-charge to the battery to prevent self-discharge of the cells.

### SPECIFICATIONS

Output Voltage (No Load) approx.....	27.2 VDC
Output Voltage Tolerance (No Load).....	+/- 0.5%
Output Amperage, Max continuous.....	25 Amps
Output Voltage (Full Load) approx. ....	>27.0 VDC
Maximum Power Output, Continuous .....	675 Watts
Ripple and Noise .....	<100mV rms
Input Voltage Range.....	108-132 VAC
Input Voltage Frequency .....	47-63 Hz
Max AC current @108 VAC.....	12.2 Amps
Typical Efficiency.....	>80%
Max Inrush Current, Single Cycle.....	30 Amps
Short Circuit Protection.....	Yes
Overload Protection.....	>100%
Line Regulation .....	100 mV rms
Load Regulation .....	<1%
Fan Control.....	Proportional
Thermal Protection .....	Yes
Working Temperature range.....	+32 to +104 F (0 C to +40 C
Storage Temperature .....	-4 to +176 F (-20 to +80 C)
Withstand Voltage (VDC) .....	1700/1700/500
Size .....	9.7" D x 6.7" W x 3.4" H
Weight .....	5.0 Lbs

## **INSTALLATION WARNING**

**DO NOT** block any opening in the case or operate the unit in a hot, enclosed environment or compartment. Be sure adequate ventilation is providing since heat buildup will shorten component life. Note: Most audio and radio equipment draws much less average current than peak demand.

If the unit stops working, check all the connections for tightness and check all the external wiring to the radio or other devices connected to the power supply.

If the power supply stops repeatedly, verify the equipment connected does not exceed the power supply ratings. If the problem persists, have the unit checked by a qualified technician.

**CAUTION: Under no circumstances should more than 132 VAC be applied to the input.  
Permanent damage to the unit could result.**

## **INSTALLATION NOTES**

The DPS series power supplies have a thermostatically controlled fan system. It can be installed in any position. However, the best mounting position for the DPS series is vertical with the output terminals up. This position provides the most effective cooling for the unit. Leave at least one inch (1") clearance on each end and side/top. When the internal or ambient temperature exceeds 45°C (115°F), the cooling fan is activated. Mount the unit through the holes provided.

Connect your equipment to the positive (+) and negative (-) 27.2 volt DC output terminals. Be certain you connect positive to positive and negative to negative. Insert the AC plug into an AC outlet of the proper voltage. If the unit fails to operate, recheck the equipment installation, hookup polarity, and the AC outlet.

The DPS series power supplies are provided with external blade fuses that will act in the case of a catastrophic failure. Do not replace the fuses with a larger or higher amperage-value fuse.

The DPS-27 series power supplies have Dual Voltage jack and a Dual Voltage jumper. When the jumper is in place the output voltage will be increased about 1 volt for occasional fast charging. Remove the plug when charged to prevent battery water loss.

The DC outputs are not connected to the chassis. Thus the power supply can be used with either negative ground or positive ground equipment. In certain circumstances it is desirable to establish a ground / chassis reference at the power supply. To do this, connect a short jumper from the ground (green) terminal to the negative (black) terminal for negative ground. For positive ground connect to the positive (red) terminal.

The DC output voltage adjustment is internal to the power supply. It can be adjusted using a non-conductive 1/8" blade tool. The cover must be removed to adjust the voltage.

**CAUTION: Under no circumstances should more than 132 VAC be applied to the input.  
Permanent damage to the unit could result.**

## **SPECIAL NOTE**

DuraComm power supplies are accurately regulated to maintain constant output voltage from no load to near full load. Above the rated output load, the current limiting circuit begins to act, reducing the output voltage to prevent unit overload damage. Some loads, like incandescent lamps, will have start-up current loads that are up to ten times the normal "hot" current drain. To ensure the DuraComm power supply will not encounter current limiting shutdown, only operate incandescent loads that are about one-half to two-thirds to the maximum continuous current rating.

## **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.*

### **DuraComm® Corporation**

6655 Troost Avenue  
Kansas City, MO 64131  
Phone (816) 472-5544 Fax (816) 472-0959  
[www.duracomm.com](http://www.duracomm.com)