



A Benny Lee Company

# PRODUCT USER GUIDE

## RU2-1524-UPS

### Rack Mount Uninterruptible Power Supply

### Owners Guide

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

- Commercial grade 24 volt power supply with built-in batteries
- Seamless transfer to batteries during AC power failure
- Built-in low voltage disconnect (LVD) to prevent equipment damage
- Automatically recharges batteries once AC power is restored
- Separate front panel indicators for DC output and AC failure
- Power factor correction (PFC) for "green" operation
- AC fail alarm contacts
- 3 year warranty



#### **DESCRIPTION**

RU2-1524-UPS is a rack mount continuous duty uninterruptible power supply with self contained battery, charger, AC fail circuit, and low voltage disconnect.

#### **SPECIFICATIONS**

Output Voltage.....	27.5 VDC
Output Voltage Tolerance.....	+/- 1 pct
Output Amperage.....	15 Amps cont.
Maximum Power, continuous.....	500 watts
Output Voltage Adjustment.....	23-28 VDC
Maximum ripple and noise.....	100 mV p-p max
Auto Ranging AC Input.....	85-264 VAC
Input frequency range.....	47-63 Hz
Maximum AC current.....	7 Amps/120 VAC; 3.5 Amps/240 VAC
Typical Efficiency.....	>80 pct
Max inrush current, single cycle.....	35 Amps
Short Circuit protection.....	Foldback Limiting
Overload Protection (operates).....	typical 110-120 pct
Line Regulation.....	50 mV
Load Regulation.....	100 mV (20-100 pct load)
Fan Control.....	Heat sink temp >140 F (60 C) = ON
Over Temperature.....	>195 F (90 C) auto output shutdown
Rise Time following ON.....	50 mS
Hold Time following OFF.....	10 mS
Working Temperature range.....	-4 – 140 F (-20 + 60 C)
Storage Temperature.....	-40 – 185 F (-40 - +85 C)
Withstand Voltage*.....	1.5 KV @ 10 ma (I/P-O/P, I/P-FG)/1 min
(Continued).....	500 V @ 10 ma (O/P-FG)/1 min
Dimensions.....	3.5H x 19W x 13D inches, nominal
Weight.....	20 lbs, nominal

## **BATTERY BACK UP & CHARGER**

Maximum Power, continuous .....	500 Watts
Auto-revert to battery or power supply .....	Provided by dual Shottky diode in OR configuration
Maximum output current in battery mode .....	30 amps (limited by 30 Amp Breaker)
Maximum charge voltage .....	27.5 VDC
Maximum recharge rate .....	1 Amp float charge
Battery protection .....	15 Amp Breaker Overload/Reverse Polarity protection
L.E.D. indication .....	Red = AC or Power Module Fail, System operating on Battery. Green=DC output OK

## **LOW VOLTAGE DISCONNECT with RELAY**

Maximum interrupt current / continuous current .....	15 Amps DC
Disconnect voltage .....	21.5 VDC
Reconnect voltage .....	25 VDC
Disconnect delay .....	2 minutes @ less than preset disconnect voltage

## **BATTERY**

Power Sonic PS-1270 or equivalent .....	x 2
Nominal Voltage .....	24.0 VDC
Battery Capacity .....	7.0 Ah
Operating Temperature .....	Charger: -4~+122 F(-20~+50C) ... Discharge: -40~+140 F (-40~+60C)

## **AC FAIL CIRCUIT**

- Red LED indication on front panel.
- Relay contacts for AC fail “Normally open” or “Normally closed”.

## **GENERAL APPLICATION NOTES AND WARNINGS**

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

**NOTE:** *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.*

**NOTE:** *The precision regulated power supplies 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 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**

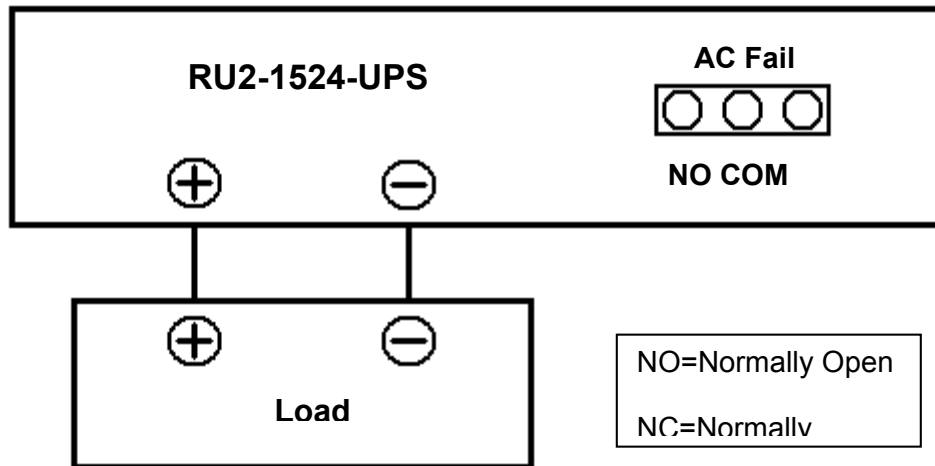
**NOTE:** The outputs are NOT referenced to the chassis. The Modular System can be used either positive or negative ground.

**NOTE:** **DO NOT** block any of the cooling vents on the sides or top 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 internal thermostatically controlled cooling fans must not be blocked.

**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.

## RU2-1524-UPS Wiring Layout

This system setup will provide continuous power to the load and maintain battery bank with smart charger while AC power is on. There is a seamless transfer of the load to the battery when the AC power goes off. The LVD will disconnect the battery if the voltage drops below 21.5 VDC. The battery reconnects once AC power is restored and voltage reaches 25.0 VDC.



## 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)*

<u>Current Level in Amperes</u>	<u>Wire Size</u>
<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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