DuraComm® POWER SUPPLIES
A Benny Lee Company

PRODUCT USER GUIDE

RU1-4012

Rack Mount Power Supply

Owners Guide

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

- Universal AC input/Full Range
- Remote Sense TTL remote control
- High efficiency up to 89%
- Operating Temperature Range: -20 ~ +60 C (Built-in cooling fan)
- Protection: Short Circuit / Overload / Over Voltage / Over Temperature
- 3 year warranty

DESCRIPTION

The RU1-4012 has a universal AC input and full range. These units have a high efficiency of up to 89 percent. The operating temperature for these units is -20 C to over 60 C with a built-in cooling fan. All of the RU1 series come with at least three layers of protection from short circuit, overload, over voltage, and over temperature.

SPECIFICATIONS

Output Voltage	13.8 VDC
Output Adjustment Range	13.5 ~ 18 VDC
Output Voltage Tolerance	+/- 1 pct
Output Amperage, max continuous (w/180 – 260 VAC input)	40 Amps @ 12 VDC; 35 Amps @ 13.8 VDC
Maximum Power, continuous	480 Watts
Maximum Ripple and Noise	150 mV p-p max
Input Voltage Range (auto-ranging)	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	40 Amps @ 230 VAC
Short Circuit Protection	Constant Current Limiting
Overload Protection (operates)	typical 105-145 pct
Line Regulation	50 mV
Load Regulation	100 mV (20-100 pct load)
Fan Control	Load controlled
Over Temperature	>195 F (90 C) auto output shutdown
Temperature Range	-22 +55 C
Storage Temperature	-22 +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	1.75H x 19W x 4.5D inches, nominal
Weight	7 lbs, nominal

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: 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 load controlled cooling fan must not be blocked.

The nine place terminal block has 6 places for DC output. 3 for V+ and 3 for V-. Each place is rated 15 Amp. Use 3 parallel 16 gauge conductors for positive and 3 – 16 gauge for negative.

The DC outputs are NOT referenced to the chassis. The RU1 System can be used either positive or negative ground without any changes or modifications.

CONDUCTOR ATTACHMENT

The DC output terminal screws are 3 mm diameter and a #6 forked terminal will fit exactly. The terminal may be crimped or soldered to the conductors before attaching to the DC output terminals. **DO NOT** solder the terminals while on the DC output studs.

BATTERY BACK-UP INSTALLATIONS

DO NOT connect a lead-acid battery directly across the DC output. This may over-charge the battery with resulting out-gassing and loss of electrolyte resulting in failure of the battery

AC MAIN OPERATING INPUT VOLTAGE

The AC input is auto-ranging and will operate without adjustment from 85 VAC to 264 VAC. Maximum efficiency is realized with input voltages above 180 VAC. Linear de-rating to ~85% @ 90 VAC is recommended for AC inputs less than 180 VAC.

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
<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.

DuraComm® Corporation