



PRICE: \$25.00

**OPERATING MANUAL  
AC POWER DISTRIBUTION PANEL  
DPAC1U SERIES**

[www.unipowertelecom.com](http://www.unipowertelecom.com)

**Manual No. DPAC-602-2**

8/14/02 DPAC-Manual

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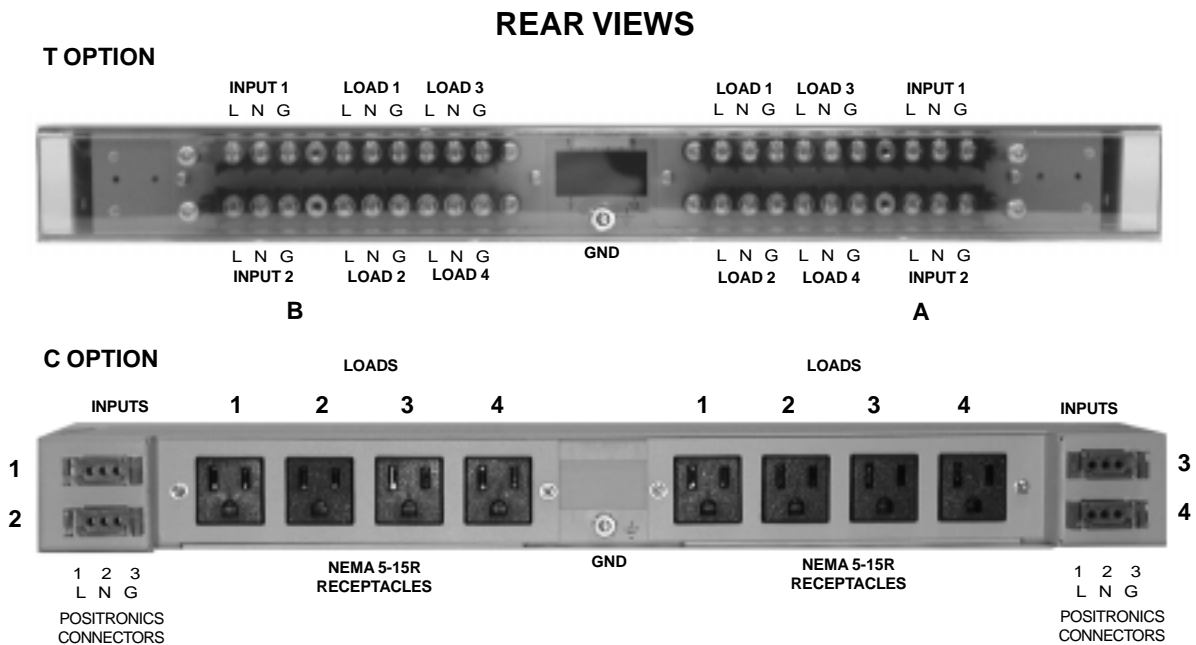
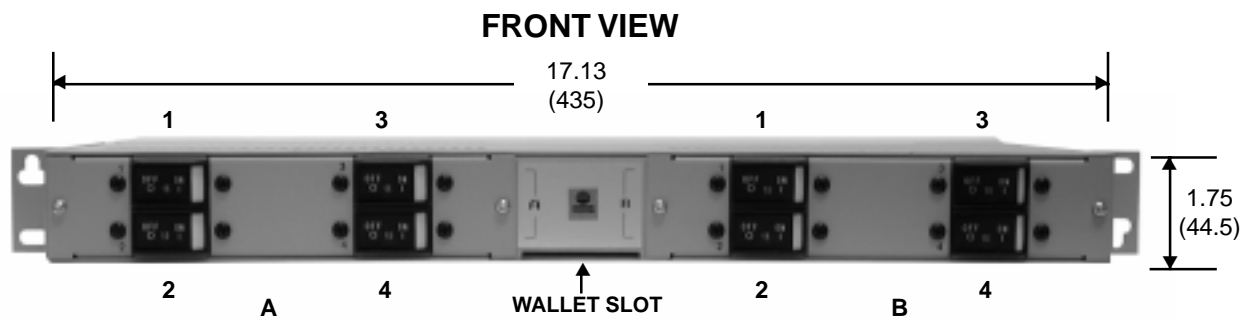
## **OPERATING MANUAL AC POWER DISTRIBUTION PANEL**

### **1.0 INTRODUCTION**

- 1.1** This operating manual should be read through carefully before installing and operating this AC power distribution panel.
- 1.2** This distribution panel provides protected AC power distribution to telecommunication equipment. It provides up to four circuit breakers on both the A and B sides of the panel. See Figure 1. The A and B loads can be in common (standard version) or isolated from each other (optional version). Total capacity for each A or B side is 50 amperes.
- 1.3** The DPAC1U distribution panel is only 1.75 inches (1 rack space) high to minimize rack space and can be mounted in either a 19- or 23-inch relay rack with corresponding brackets. It can be mounted from the front of the rack with offsets every ¼-inch from front to back to align with existing rack-mounted equipment.
- 1.4** The distribution panel can be configured differently for the A and B sides. The A and B sides can have different numbers of breakers and different breaker capacities. Each breaker on Option T can be from 5 to 30 amperes capacity; each breaker on Option C can be from 5 to 15 amperes capacity. The maximum capacity for each A or B side is 50 amperes. The distribution panel must be configured at the factory.
- 1.5** The rear panel connections have two options: Positronics connector input with NEMA 5-15R AC output receptacles (C Option) or barrier terminal strip connectors for both input and output connections (T Option).
- 1.6** The DPAC1U is designed to mate with UNIPOWER Telecom's INV2500 or INV2500-HS sine wave inverters. It cannot be used with a 230VAC input. It will, however, work with other 115VAC output inverters or AC power sources.



**Figure 1. DPAC1U AC Power Distribution Panel**



**Figure 2. Front and Rear Views of DPAC1U**

## 2.0 FEATURES AND OPTIONS

### 2.1 Features

- ◆ One Rack Space High: 1.75 inches
- ◆ 19 or 23-Inch Rack Mounting
- ◆ Mates with INV2500 or INV2500-HS
- ◆ Terminal Block or NEMA 5-15R Outputs
- ◆ Voltage: 120VAC Nominal
- ◆ Up to 8 AC Circuits with Breakers
- ◆ Single (A) or Dual (A & B) Sections
- ◆ 50A AC Per Section (100A Total)
- ◆ Common or Isolated A & B Sections
- ◆ A & B Can Be Separately Configured
- ◆ AC Breaker Capacities: 5A to 30A
- ◆ Up to 4 Inverter Inputs
- ◆ Rack Offset Every ¼" from Front to Back

### 2.2 Options. There are two sets of options available:

- ◆ In the standard dual model (using sections A and B) the two sections are connected in common (parallel). In an optional model (option I) the A and B sections are isolated.
- ◆ There are two options for input and output connections. The T option provides a terminal strip for both; the C Option provides Positronics connectors for the input and NEMA 5-15R receptacles for the outputs.

### 2.3 Model Designation. The following Ordering Guide shows how the models are designated.

Model No.: DPAC1U -A -B

CODE	OUTPUT OPTION
T	Terminal Strip
C	NEMA 5-15R

**Note:** Terminal strip outputs (Option T) can each carry up to 30 amperes; therefore a circuit breaker can be up to 30A. NEMA 5-15R output receptacles (Option C) can each carry up to 15 amperes; therefore a circuit breaker is limited to 15A.

STANDARD  
AC BREAKERS

CODE	AMPS
H	5
I	10
J	15
K	20
L	25
M	30

CODE	OPTION
I	Isolated A & B Sections

### **3.0 FRONT AND REAR PANEL DESCRIPTIONS**

- 3.1** The front panel consists of the A and B sides with up to four circuit breakers on each side. The circuit breakers are numbered to correspond to the output load connections or receptacles. See Figure 2. At the bottom of the center section is a slot for a wallet and designator card. This card permits the re-cording of each output circuit by number.
- 3.2** In Figure 2, views of the two rear panel options are shown. The first one shows terminal strip connections for both AC inputs and outputs on the A and B sides (Option T). This option also comes with a clear plastic safety cover over the terminal strips. The second shows Positronics connector inputs and NEMA 5-15R receptacle outputs on A and B sides (Option C).

### **4.0 SAFETY WARNINGS**

- 4.1** This Distribution Panel operates at voltages that could potentially be hazardous. This product should be handled, tested and installed only by qualified technical persons who are trained in the use of power systems and are well aware of the hazards involved.
- 4.2** When operating this Distribution Panel, the chassis ground terminal must be connected to the system frame ground or other proper safety ground for the protection of personnel.
- 4.3** All connections to the Distribution Panel should be carefully checked for errors before applying power to them.
- 4.4** This equipment is intended only for installation in a “RESTRICTED ACCESS LOCATION”.

### **5.0 WARRANTY**

All products of UNIPOWER Telecom, a division of UNIPOWER Corporation, are warranted for two (2) years from date of shipment against defects in material and workmanship. This warranty does not extend to products which have been opened, altered or repaired by persons other than persons authorized by the manufacturer or to products which become defective due to acts of God, negligence or the failure of customer to fully follow instructions with respect to installation, application or maintenance. This warranty is extended directly by the manufacturer to the buyer and is the sole warranty applicable. EXCEPT FOR THE FOREGOING EXPRESS WARRANTY, THE MANUFACTURER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. As the sole and exclusive remedy under this warranty, the manufacturer, at its

option, may repair or replace the non-conforming product or issue credit, provided the manufacturer's inspection establishes the existence of a defect. To exercise this remedy, the buyer must contact the manufacturer's Customer Service Department to obtain a Return Material Authorization number and shipping instructions. Products returned without prior authorization will be returned to buyer. All products returned for repair must be shipped freight prepaid to UNIPOWER. If the buyer fails to fully comply with the foregoing, the buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property or any other incidental or consequential losses) shall be available to the buyer.

## 6.0 FUNCTIONAL DIAGRAM

A simplified schematic diagram of the AC Distribution Panels is shown in Figure 3. The diagram represents the A or B side of the panel. The input handles one or two inverters with up to 25A each. The output goes to as many as four AC circuits with a circuit breaker on each. The A and B sides can be in common (standard) or isolated (option). This is determined at the time of ordering.

## 7.0 SPECIFICATIONS

### INPUT / OUTPUT

Configuration .....	Single (A) or Dual (A & B) Sections
Current Capacity .....	50A Per Section, 100A Total
No. of Circuit Breakers .....	2 to 4 Per Section, Up to 8 Total
Breaker Capacity, Option T .....	5A to 30A
Option C .....	5A to 15A
Voltage .....	120VAC Nominal

**SAFETY STANDARDS** ..... UL1950, CSA22.2 No.950, EN60950

### ENVIRONMENTAL

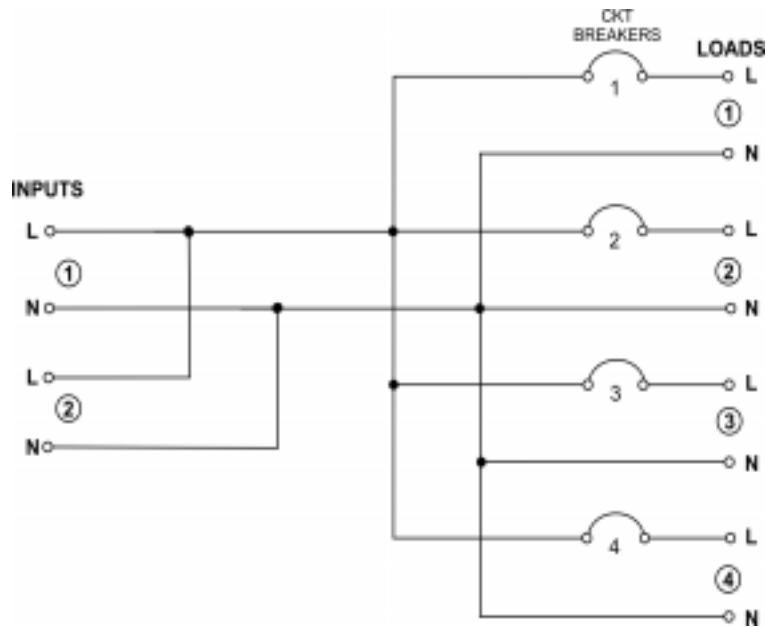
Operating Temp. Range .....	0°C to +50°C
Storage Temp. Range .....	-40°C to + 85°C
Humidity .....	0% to 95%, Non-Condensing

### PHYSICAL SPECIFICATIONS

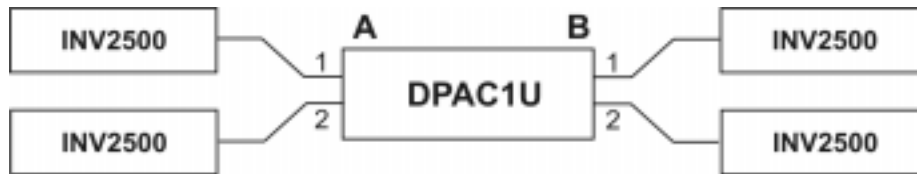
Case Material .....	Steel
Finish .....	Powder Coat Gray
Dimensions, Inches (mm) .....	1.75 H x 17.13 W x 11.00 D (44.5 x 435 x 279)
Weight .....	10.25 lbs. (4.65 kg.)
Rack Mounting Width .....	19 or 23 Inches

### CONNECTIONS

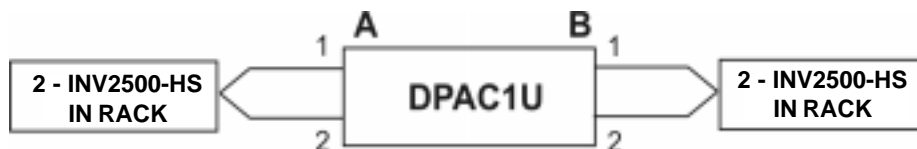
Input/Output Connections .....	Barrier Terminal Strips Positronics/NEMA 5-15R Receptacle
Chassis Ground Connection .....	No. 8-32 Stud



**Figure 3. Simplified Diagram of DPAC1U (A or B Side)**



**(a) Four INV2500s (or INV2500-HSs) Connected to DPAC1U**



**(b) INV2500-HSs in Rack (115VAC only) Connected to DPAC1U**

**Figure 4. Inverter Connections to DPAC1U**

## 8.0 BACK PANEL CONNECTIONS

**8.1 General.** Figure 2 shows the back panel connections for both versions of the DPAC1U, the T and C Options. It should be noted that these AC Distribution Panels are specially designed for use with UNIPOWER Telecom's INV2500 and INV2500-HS sine wave inverters. They may also, however, be used with other 115VAC inverters or AC power sources.

**8.2 Inverter Inputs.** Both versions of the DPAC1U have provisions for the inputs of up to four INV2500 or INV2500-HS inverters, two on each A or B side. Each inverter input can have up to 25 amperes AC. If a shelf with two INV2500-HS inverters in parallel is used, two cables must be connected from the inverter output to the DPAC1U, one to each of the A side or B side inputs (1 and 2). In this case the inverter input can be up to 50 amperes AC. See Figure 4(b).

It should be noted that all inverters connected to the DPAC1U must have their outputs in phase with each other because the inputs are all paralleled inside the distribution panel. The only exception to this is the version of the DPAC1U which has isolated A and B sections (Suffix code I). In this case the A and B sides can have different phases since they are not connected in common. However, the two inverters on the A side must be in phase with each other and likewise the two inverters on the B side.

**8.3 Terminal Strip Connections.** For the "T" output option there are two 10-terminal barrier strips on each A and B side of the panel. As shown in Figure 2, each A and B side has connections for two inverter inputs (up to 25A each) and four output loads (up to 50A total output). For each inverter input and each output load there are line, neutral and ground connection terminals. Each terminal strip output is rated up to 30 amperes.

**8.4 NEMA 5-15R and Positronics Connections.** For the "C" output option the input connections are to Positronics connectors, one for each of the four inverter inputs. The connector is no. PLA03MI10000 with MC112N contacts; the mating connector is PLA03F0050 with FC112N2 contacts. See Figure 5 for a diagram of the Positronics connectors. Each NEMA 5-15R receptacle is rated up to 15 amperes output.

**8.5 Connecting Cables.** Check with the factory on the availability of cables for making the interconnection between UNIPOWER Telecom Inverters and the DPAC1U.

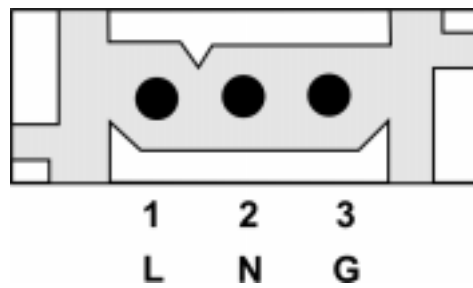


Figure 5. Positronics Connector on “C” Option of DPAC1U

- 8.6 Chassis Ground Connection.** At the center, near the bottom of each unit, is the chassis ground terminal. This terminal is a no. 8-32 stud with a nut. It should be connected to the system frame ground. The terminal is in common with the AC ground.

## **9.0 UNPACKING AND INSPECTION**

- 9.1** This AC power distribution panel was carefully tested, inspected and packaged for shipment from our factory. Upon receipt of the unit it should be carefully unpacked and inspected for any damage in shipment.
- 9.2** If there is evidence of damage, do not attempt to test the unit. The freight carrier should be notified immediately and a claim for the cost of the distribution panel should be filed with the carrier for direct reimbursement. Be sure to include the model and serial number of the damaged unit in all correspondence with the freight carrier. Also save the shipping carton and packing materials as evidence of damage for the freight carrier's inspection.
- 9.3** UNIPOWER Telecom will cooperate fully in case of any shipping damage investigation.
- 9.4** Always save the packing materials for later use in shipping the unit. Never ship the distribution panel without proper packing.

## **10.0 INSTALLATION**

- 10.1 Mounting.** This distribution panel can be mounted in either 19- or 23-inch racks by using the appropriate brackets. Mount it from the front of the rack using the correct offsets to align with existing rack-mounted equipment. The bracket offsets are every quarter inch from front to back.
- 10.2 Connections.** Connections to the AC Distribution Panel should be made as described in Sections 8.2 through 8.6. Wires or cables of proper AWG copper size should be used for the current carried. Make sure that all connections are clean and firm to minimize contact resistance. Make sure that the chassis ground is connected to the system frame ground.

## **11.0 SETUP AND TESTING**

- 11.1** It is not necessary to have the AC distribution panel mounted in a rack for initial testing. This can be done on a bench. It is not necessary to have loads

connected to the panel for this testing.

- 11.2** With the input inverter or other AC power source “off”, connect the input wires to inputs 1 or 1 and 2 of the A side of the distribution panel. Connect system frame ground to the chassis ground terminal. Set all circuit breakers to “on”.
- 11.3** Turn on the input power source. Check the AC output voltage from line to neutral at each set of output terminals (loads) with a digital AC voltmeter. The voltage should be approximately 120VAC.
- 11.4** On the A side set all circuit breakers to “off”. Check the AC output voltage as before. All the load voltages should be zero.
- 11.5** Turn the input AC source off. Repeat the same tests of Sections 11.2 through 11.4 on the B side of the AC Distribution Panel.
- 11.6** Turn the input AC source off and disconnect the input wires. The distribution panel may now be connected to its intended application.
- 11.7** If the AC distribution panel did not operate properly in the above tests, go back and double check the connections. If the problem cannot be solved, call UNIPOWER Telecom at 954-346-2442 ext. 400 for help.

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