

DPU1U SERIES

UNIFLEX® COMBINATION PANELS

Breakers | Fuses | LVD

DESCRIPTION

UNIPOWER's UNIFLEX® distribution panels provide the ultimate flexibility in combining fuses, circuit breakers and/or an LVD in a dual (A/B) panel. A GMT section provides 10 fuses and a circuit breaker section, 1-6 breakers.

A low-voltage disconnect section is configured at the factory for either battery or load disconnect and can have an optional bypass switch. A battery circuit breaker is standard.

Each A and B section has an LED alarm indicator and Form C relay contacts.

The A and B Sections are isolated and can be configured independently at the factory for 12, 24 or 48 VDC, positive or negative ground.

The panels are only one mounting position (1.75 inches) high and come with brackets that permit mounting in either a 19- or 23-inch relay rack. They can be mounted from the front of the rack with offsets every quarter-inch from front to back to align with existing rack mounted equipment.

THREE YEAR WARRANTY

SAFETY CERTIFICATIONS

UL1950
CSA22.2, No. 950-95

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E210994



LVD2006/95/EC
ROHS2011/65/EU



AVAILABLE CONFIGURATIONS

BASE MODEL	SIDE	TOTAL AMPS	TYPE
DPU1U	A	80 150	10 x GMT Fuses 1-6 x Breakers
	B	80 150 70	10 x GMT Fuses 1-6 x Breakers 1 x LVD

Note: Each side of the panel can be configured for only one of the available 'types' as shown. To specify a complete model number see the configuration guide on the following page.

FEATURES

- ◆ One Mounting Position High: 1.75"
- ◆ 19- or 23-Inch Rack Mounting
- ◆ Dual Section (A/B)
- ◆ Current Capacity per Section: 60A to 150A
- ◆ Operating Voltage: 12, 24 or 48VDC
- ◆ Positive or Negative Ground
- ◆ A & B are Isolated Loads
- ◆ LED Alarm Indicators
- ◆ Form C Relay Contacts, Each Side
- ◆ Combination of GMT Fuses, Breakers, LVD
- ◆ 1A to 50A Circuit Breakers
- ◆ LVD has Battery Circuit Breaker
- ◆ LVD in Series with Battery or Load
- ◆ Rack Offset Every ¼" from Front to Back

SPECIFICATIONS

Typical at 25°C Unless Otherwise Noted.

INPUT / OUTPUT

Fuse & Breaker Capacity.....	80A or 150A Per Bus
LVD Capacity.....	70A
Fuse Configuration.....	10 GMT Fuses
Breaker Configurations.....	1 to 6 Breakers
Voltage	
48V Nominal.....	42-60VDC
24V Nominal.....	21-30VDC
12V Nominal.....	10.5-15VDC
Polarity.....	Positive or Negative Ground

ALARMS

Alarm Indicator.....LED on Each Side

LED Status

Fuse & Breaker Sections.....Green = Normal
Red = Alarm, Off = No Power

LVD Section.....Red = LVD Contactor or Battery Breaker Open
Off = Normal

Alarm Connections

Fuse & Breaker Two Form C Relay Contacts Per Bus
LVD Form C Relay Contacts for Disconnect or Battery Breaker

SAFETY STANDARDS

SAFETY STANDARDS.....UL1950, CSA22.2 No.950, EN60-950

ENVIRONMENTAL

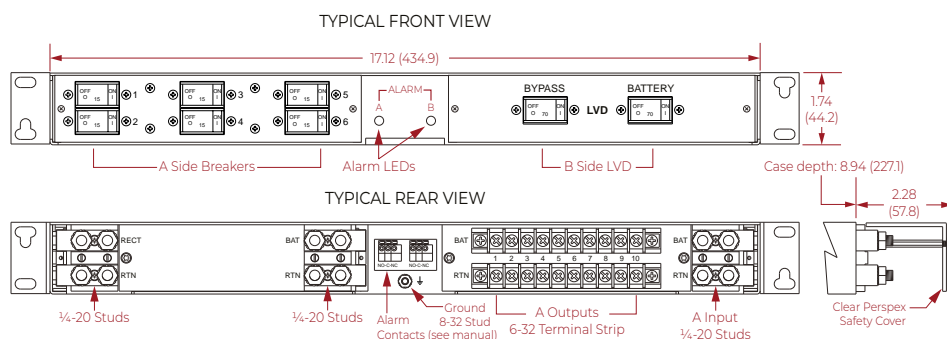
Operating Temp. Range.....-10°C to +70°C
Storage Temp. Range.....-40°C to +85°C
Humidity.....0% to 95%, Non-Condensing

PHYSICAL SPECIFICATIONS

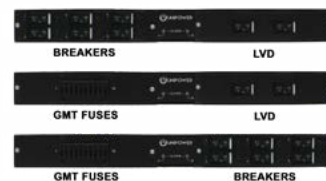
Case Material	Steel
Finish	Powder Coat Gray
Dimensions, Inches (mm)	1.75 H x 19.00 W x 9.00 D (44.5 x 483 x 229)
Weight	8.76 - 9.73 lbs. (3.97 - 4.41 kg.)
Rack Mounting Width	19 or 23 Inches

CONNECTIONS

Input Connections.....	Crimp Type Lugs or ¼ - 20 Studs
Output Connections	
Fuse or Breaker	Barrier Terminal Strips
LVD	Crimp Type Lugs or ¼ - 20 Studs
Battery Connection, LVD.....	Crimp Type Lugs or ¼ - 20 Studs
Chassis Ground Connection	No. 8-32 Stud
Alarm Connections.....	0.045" sq. Wirewrap Pins



AVAILABLE CONFIGURATIONS



ALL DIMENSIONS IN INCHES (mm)

ORDERING GUIDE

CODE	VOLTAGE (POLARITY)
1	-48V (+Ve Ground)
2	+48V (-Ve Ground)
3	-24V (+Ve Ground)
4	+24V (-Ve Ground)
5	-12V (+Ve Ground)
6	+12V (-Ve Ground)

BREAKERS ³			
CODE	AMPS	CODE	AMPS
F	1	K	20
G	2.5	L	25
H	5	M	30
I	10	N	40
J	15	O	50

Clear Plastic
Rear Safety Cover
(supplied as standard)

Model No.: DPU1U-A -B -C

(BREAKER PANEL ONLY) (BREAKER PANEL ONLY)

CODE	TYPE
G	GMT Fuses
B	Breakers

LV DISCONNECT¹

CODE	OPTION ²
S	Bypass Switch
X	No Bypass Switch

- Notes:**
1. As shown, only side B can have a low-voltage disconnect, specified by "L".
 2. A bypass switch must also be designated YES or NO.
 3. For a breaker panel, each breaker must be specified with highest current in position 1 down to lowest current in position 6.

INSTRUCTIONS

For each section (A or B) determine the type and voltage and polarity. Use codes from the tables. If a breaker section is specified, insert breaker currents into each box (from 1 to 6 breakers). The B section is specified in the same way as the A section. An LVD can only be specified for the B section. For panels that are not UNIFLEX® (combination), i.e., both A and B are identical, order models **DPG1U**, **DPB1U** or **LVD1U**. Also for full specifications on fuses, breaker or LVD sections, refer to data sheets for these products.

To order GMT fuses see [DPG1U datasheet](#).

Crimp type lugs for the input and battery connections should be ordered separately.
For a kit of 4 two-hole lugs for #6 AWG wire, order code **775-1434-0000**.

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**OPERATING MANUAL
DPU1U SERIES
COMBINATION PANELS**

Document Number: DPU1U-MAN Rev. 4

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OPERATING MANUAL

DPU1U SERIES COMBINATION PANELS

1.0 INTRODUCTION

DPU1U Series combination panels provide protected power distribution to telecommunication equipment. They are only 1.75 inches (1 mounting position) high to minimize rack space and can be mounted in either a 19- or 23-inch relay rack with corresponding brackets. They can be mounted from the front of the rack with offsets every 1/4-inch from front to back to align with existing rackmounted equipment.

DPU1U Series provides a combination of circuit breaker or fuse distribution on the A side with an LVD or distribution on the B side. Figure 1 shown the three possible combinations.



Figure 1. DPU1U Alternative Combinations

The DPU1U Series panels can be configured for 12, 24 or 48 volts with either positive or negative ground. Because the A and B sides are independent and isolated, they can be configured separately. For example, the A side can be 48V positive ground and the B side can be 24V negative ground. The voltage and polarity of each side must be configured at the factory. All models are reverse polarity protected.

Each load (A and B) has a green/red visual alarm and two Form C relay alarm contacts for connection to external audible or visual alarms.

2.0 FEATURES

2.1 The following is a summary of the important features of the Series.

- ◆ Thin Height: 1.75 inches (1 mounting position)
- ◆ 19 or 23-Inch Rack Mounting
- ◆ Dual A/B Loads or Single Load with LVD
- ◆ Current Capacity: 60 to 150A per Load (Depends on Model)
- ◆ Operating Voltage: 12, 24 or 48VDC
- ◆ Positive or Negative Ground
- ◆ Red/Green LED Indicators
- ◆ 2 Form C Relay Contacts per Load
- ◆ Load Protection: GMT Fuses or Magnetic Circuit Breakers
- ◆ LVD Protection: 70A Magnetic Circuit Breaker with Bypass Option
- ◆ Independent and Isolated Loads
- ◆ Input Connections: Crimp Type Lugs
- ◆ Output Connections: Barrier Terminal Strips or Crimp Type Lugs (LVD)
- ◆ Reverse Polarity Protected

3.0 PRODUCT DESCRIPTION

The following describes the basic features of each panel segment.

3.1 Circuit Breakers (A side or B side)

- ◆ 1 to 6 Circuit Breakers*
- ◆ Current Capacity: 150A
- ◆ Circuit Breaker Capacity: 1A to 50A

* Maximum of 5 circuit breakers if 40-50A breakers are used.



Available Ratings

1A, 2.5A, 5A, 10A, 15A,
20A, 25A, 30A, 40A, 50A

3.2 GMT Fuses (A side or B side)

- ◆ 10 GMT Fuse Positions
- ◆ Current Capacity: 80A
- ◆ Fuse Ratings: ½A to 12A



Available Ratings

½A, ¾A, 1A, 1½A
2A, 3A, 5A, 10A, 12A

3.3 LVD (B side only)

- ◆ Single Low Voltage Disconnect
- ◆ Current Capacity: 70A
- ◆ Bypass Breaker Option



4.0 SAFETY & INDUSTRY STANDARDS

4.1 DPU1U Series combination panels meet the following safety requirements:

STANDARD

UL60950-1, 2nd Edition

CSA22.2 No. 60950-1, 2nd Edition

EN60950-1, 2nd Edition

- 4.2 DPU1U Series combination panels are CE marked to indicate conformance to the European Union's Low Voltage, EMC and RoHS Directives.
- 4.3 Inadvertent short circuiting of the system battery and/or rectifier by mis-connection or other error could be harmful. 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.
- 4.4 When operating these combination [anel]s the chassis ground terminal must be connected to the system frame ground or other proper safety ground for the protection of personnel.
- 4.5 All connections to these combination panels should be carefully checked for errors before applying power to them.
- 4.6 The internal circuits may present an energy hazardous. The top cover should not be removed. There are no user-serviceable components in these units. Removing the top cover will void the warranty.

5.0 WARRANTY (summary)

DPU1U Series combination panels are warranted for three (3) 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.

For a complete text of UNIPOWER's warranty conditions please request a copy from your local Sales Office.

6.0 DESCRIPTION OF OPERATION

6.1 Power Distribution Circuits. A simplified schematic diagram of the distribution panels is shown in Figure 2. The battery input to each load connects to a high-current copper bus bar from which the individual fuses or circuit breakers distribute power to the loads. The return input connects to a similar bus bar to which the individual loads terminate. The A and B loads are totally independent and isolated with the exception of models incorporating the 'S' option.

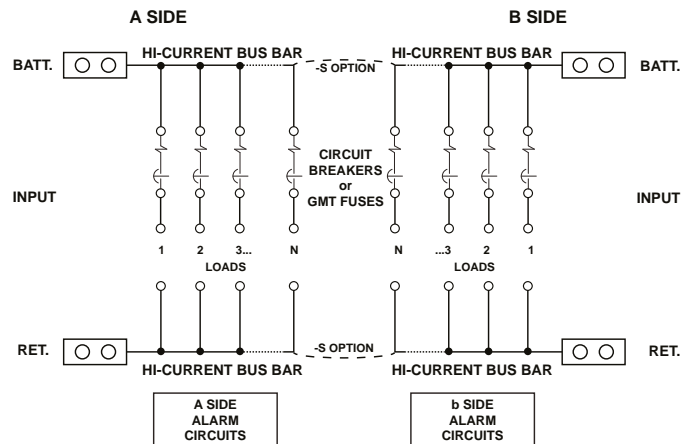


Figure 2. Distribution Block Diagram

6.2 LVD Circuits. Figure 3 shows a simplified diagram of the LVD circuit. The LVD is connected to a rectifier bus, battery and distribution panel. The contactor and bypass switch can be connected either in series with the rectifier and load or the rectifier and battery. If the battery voltage drops to 42.5V for a 48V battery or 21.25V for a 24V battery, the contactor opens, removing the loads from the rectifier and battery or, alternatively, removing the battery from the rectifier and loads. The disconnect contactor is rated at 70 amperes. If the current into or out of the battery exceeds 100 amperes, the battery circuit breaker will trip. If the contactor opens due to low voltage, it will close again when the battery voltage exceeds 49.0 volts for a 48V battery or 24.5 volts for a 24V battery. Other circuitry is incorporated detects the low battery voltage, turns the red LED on or off and turns the Form C relay on or off.

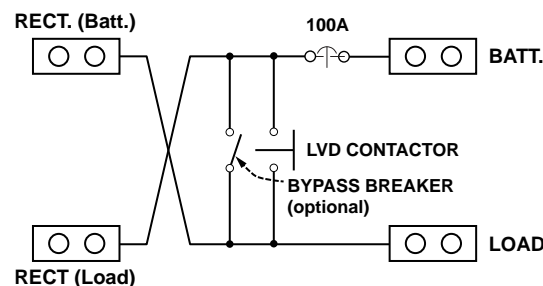


Figure 3. LVD Block Diagram

6.3 Alarm Circuits. The alarm circuits detect a tripped circuit breaker or blown and, in this event, turn on the red part of the LEDs. The alarm circuits also each drive Form C relay contacts. If one or more circuits open or if there is an input power failure, the relays are de-energized and the contacts are used to control external audible or visual alarms. The A and B alarm circuits are also independent and isolated from each other.

LED STATE MEANINGS

LED State	Meaning
Green	OK
Red	Breaker Trip or Breaker OFF or Fuse Blown
OFF	No Input Power

Table 1. LED State Definitions

7.0 SPECIFICATIONS

The following specifications are typical at 25°C unless otherwise noted.

INPUT / OUTPUT	SAFETY STANDARDS	UL1950, CSA22.2 No.950, EN60-950
Fuse & Breaker Capacity.....	80A or 150A Per Bus	
LVD Capacity.....	70A	
Fuse Configuration.....	10 GMT Fuses	
Breaker Configurations.....	1 to 6 Breakers	
Voltage		
48V Nominal.....	42-60VDC	
24V Nominal.....	21-30VDC	
12V Nominal.....	10.5-15VDC	
Polarity.....	Positive or Negative Ground	
ALARMS		
Alarm Indicator.....	LED on Each Side	
LED Status		
Fuse & Breaker Sections.....	Green = Normal	
	Red = Alarm, Off = No Power	
LVD Section.....	Red = LVD Contactor or Battery Breaker Open	
	Off = Normal	
Alarm Connections		
Fuse & Breaker.....	Two Form C Relay Contacts Per Bus	
LVD.....	Form C Relay Contacts for Disconnect or Battery Breaker	
ENVIRONMENTAL		
Operating Temp. Range.....	-10°C to +70°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 19.00 W x 9.00 D	
	(44.5 x 483 x 229)	
Weight.....	8.76 - 9.73 lbs. (3.97 - 4.41 kg.)	
Rack Mounting Width.....	19 or 23 Inches	
CONNECTIONS		
Input Connections.....	Crimp Type Lugs or ¼ - 20 Studs	
Output Connections		
Fuse or Breaker.....	Barrier Terminal Strips	
LVD.....	Crimp Type Lugs or ¼ - 20 Studs	
Battery Connection, LVD.....	Crimp Type Lugs or ¼ - 20 Studs	
Chassis Ground Connection.....	No. 8-32 Stud	
Alarm Connections.....	0.045" sq. Wirewrap Pins	

BASE MODEL	SIDE	TOTAL AMPS	TYPE
DPU1U	A	80 150	10 x GMT Fuses 1-6 x Breakers
	B	80 150 70	10 x GMT Fuses 1-6 x Breakers 1 x LVD

Note: Each side of the panel can be configured for only one of the available 'types' as shown. To specify a complete model number see the configuration guide later in this manual.

Table 2. Available Combinations

8.0 FRONT PANEL DESCRIPTION

The front panel of the circuit breaker distribution section, shown in Figure 4 below, can accommodate up to 6 hydraulic magnetic circuit breakers rated from 1A to 50A.

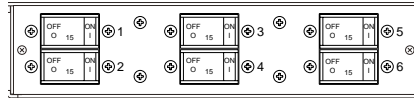


Figure 4. Distribution Section Front Panel View

The front panel of the GMT fuse distribution section, shown in Figure 5 below, can each accommodate up to 10 GMT Fuses rated from ½A to 12A.

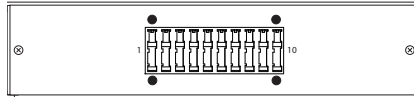


Figure 5. GMT Fuse Section Front Panel View

The front panel of the LVD section, shown in Figure 6 below, incorporates a 70A LVD hydraulic magnetic circuit breaker and (optionally) a 70A ByPass magnetic circuit breaker.

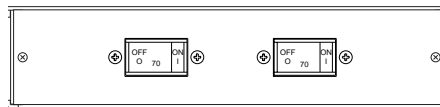


Figure 6. LVD Front Panel View

The center section has two green/red LEDs, one for the A side (left) and the other for the B side (right). At the bottom of this center section is a slot for a wallet and designator card. This card permits the recording of each output circuit by number.

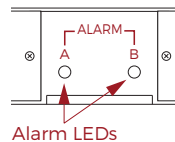
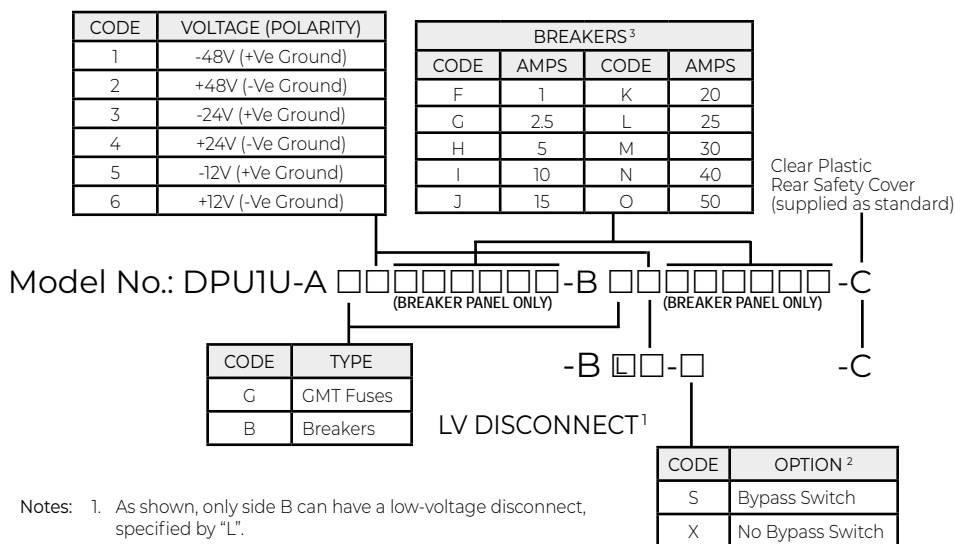


Figure 7. Center Section Front Panel View

8.1 Configuration Details



- Notes:**
1. As shown, only side B can have a low-voltage disconnect, specified by "L".
 2. A bypass switch must also be designated YES or NO.
 3. For a breaker panel, each breaker must be specified with highest current in position 1 down to lowest current in position 6.

GMT FUSES (ORDER SEPARATELY)

AMPS	PART NUMBER	COLOR
½	401-1500-0010	Red
¾	401-1500-0020	Brown
1	401-1500-0030	Gray
1⅓	401-1500-0040	White
2	401-1500-0050	Orange

Table 3. GMT Fuse Values

UNIPOWER recommends Bussman fuses which can be ordered using the part numbers shown.

9.0 BACK PANEL DESCRIPTION

9.1 Figure 8 shows the back of the DPU1U combination panel with the LVD section fitted on the B side. The A side inputs are at the right end with side A outputs to the left of them. B side inputs and outputs are to the left and right of the left section respectively.

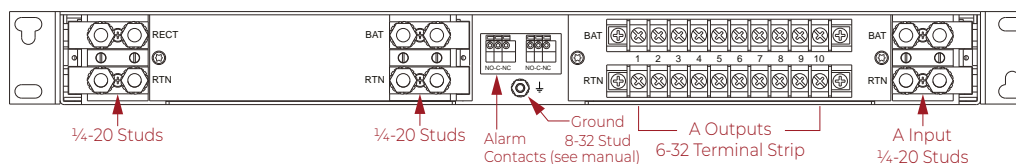


Figure 8. Back Panel View with LVD

Figure 9 shows the back combination panel with two distribution sections fitted. Inputs are at the left and right ends of the back panel. Side B outputs are at two rows of barrier terminal strips on the left side, and side A outputs are the same on the right side.

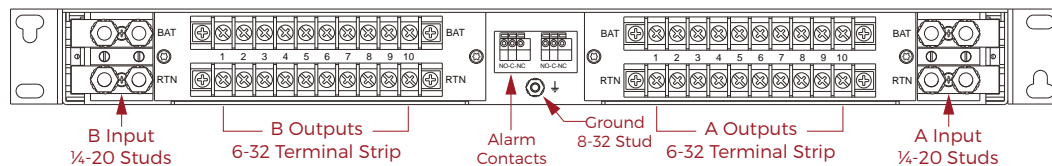


Figure 9. Back Panel View with Dual Distribution

At the center of the back panel are two spring clamp terminal blocks for the Form C relay contact outputs. Below these is a chassis ground terminal.

9.2 Input Connections (also Output Connections for LVD). See Figure 10. The DC power inputs to the combination panels are made by means of crimp type lugs or direct connection to 1/4-20 studs to two copper bus bars on side A and side B. The upper bus bar is the battery connection (whether + or -) and the lower bus bar is the return (whether + or -).

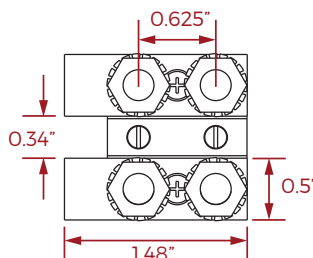


Figure 10. Input Bus Bar Detail

9.3 Crimp Type Lugs. A list of compatible crimp type lugs is shown in the following table for AWG wire sizes from no. 1 to 8 and one- or two- hole lugs. These lugs can be ordered directly from the manufacturer, Panduit Corp., using the model numbers shown in table 4.

A standard kit of four two-hole crimp type lugs for no. 6 AWG copper wire is available from UNIPOWER. Order kit no. 775-1434-0000.

WIRE AWG	.25DIA. HOLES	PANDUIT CORP. PART NUMBER	UNIPOWER PART NUMBER
8	1	LCA8-14-L	625-1665-0010
	2	LCD8-14A-L	625-1665-0110
6	1	LCA6-14-L	625-1665-0020
	2	LCD6-14A-L	625-1665-0120
4	1	LCA4-14-L	625-1665-0030
	2	LCD4-14A-L	625-1665-0130
2	1	LCA2-14-Q	625-1665-0040
	2	LCD2-14A-Q	625-1665-0140
1	1	LCA1-14-E	625-1665-0050
	2	LCD1-14A-E	625-1665-0150

Table 4. Input Cable Lug Sizes & Types

9.4 Output Connections. Output connections for A and B loads are shown in Figure 11. There are 10 sets of barrier terminal strip connections for each side, A and B. The connections are numbered to correspond with the numbers of the front panel breakers. The upper strip connections are from the battery through the breakers; the lower strip connections are the returns. Side B is on the left and side A on the right, as shown.

Each terminal is a no. 6-32 screw and is rated at 30 amperes. Wire sizes from no. 10 AWG up to no. 22 AWG may be used for connections. Figure 10 below shows detailed spacing of the terminals.

When circuit breaker distribution fitted with either 40A or 50A breakers the additional load rating is accommodated by fitting adaptors that bridge two barrier strip terminals and provide a single #10-32 screw. Minimum wire size for these connections is 8 AWG.

A maximum of two high current breakers is allowed.

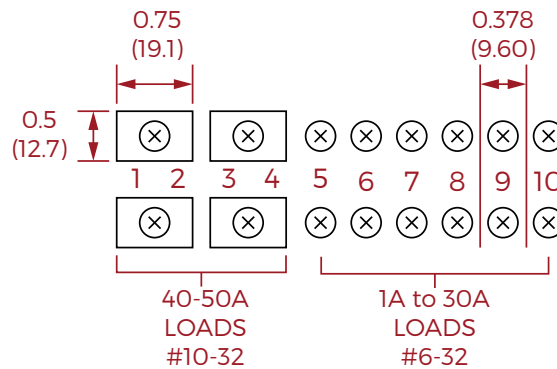


Figure 11. Output Barrier Strip Detail

9.5 Form C Relay Contact Outputs. The center of the back panel has connections to the Form C relay contact outputs for connection to external audible or visual alarm circuits. See Figure 12.

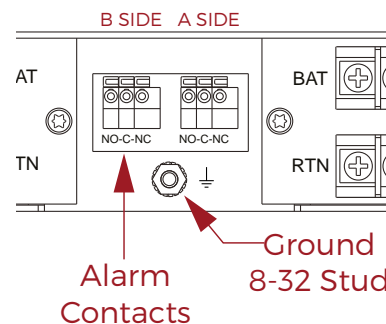


Figure 12. Alarm Contact & Ground Detail

Connection is made via two Phoenix Contact spring clamp terminal blocks. “B SIDE” is for the Form C relay contact of side B and “A SIDE” is for the Form C relay contact of side A. The terminals, viewed from left to right, are the normally open (NO) common (C) and normally closed (NC) contacts, respectively. See table 5 below.

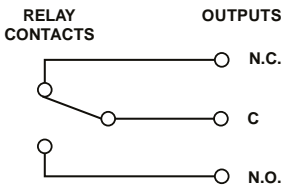
PIN	FUNCTION	CONTACT SCHEMATIC
NC	N.C. (normally closed)	
C	C (common)	
NO	N.O. (normally open)	

Table 5. Alarm Relay Contacts

“Normally Closed” and “Normally Open” are defined with the combination panel powered and providing power to all outputs, i.e. no circuit breakers tripped AND when the input power is connected to a side (A or B), the Form C relay of that side is energized. If there is either loss of input power, one or more circuit breakers trip or the relay is de-energized, the normally open contacts close and the normally closed contacts open. See table 6.

RELAY STATE MEANINGS

Relay State	Meaning
Energized (N.C. is closed)	OK
De-energized (N.C. is open)	Breaker Trip or Breaker OFF or Fuse Blown
	No Input Power

Table 6. Relay State Definitions

The ratings of the relay contacts are 0.6A at 125VAC or 2A at 30VDC. The spring clamp terminals accept wire sizes nos. 16 to 26 AWG.

- 9.6 Chassis Ground Connection.** Just below the Form C relay contact terminals is the chassis ground terminal. This terminal is a no. 8-32 stud with a nut.

NOTE THAT IT IS ESSENTIAL THAT THIS TERMINAL IS CONNECTED TO THE SYSTEM FRAME GROUND TO ENSURE SAFE OPERATION.

10.0 UNPACKING AND INSPECTION

- 10.1 This power combination panel was carefully tested, inspected and packaged for shipment from our factory. The unit and circuit breakers are shipped separately. Upon receipt of the unit it should be carefully unpacked and inspected for any damage in shipment.
- 10.2 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 rectifier system 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 material as evidence of damage for the freight carrier's inspection.
- 10.3 UNIPOWER will cooperate fully in case of any shipping damage investigation.
- 10.4 Always save the packing materials for later use in shipping the unit. Never ship the rectifier system without proper packing.

11.0 INSTALLATION

- 11.1 **Mounting.** This combination panel can be mounted in either 19- or 23-inch racks by using the supplied reversible 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.

- 11.2 **Power Connections.** Input connections should be made with one- or two-terminal crimp type lugs using copper wire size from no. 1 to 8 AWG, depending on current and wire loop distance. See Sections 9.2 and 9.3. Output connections are made to the barrier terminal strips. See Section 9.4 and Figure 10.
- 11.3 **Alarm Connections.** Form C relay contact output connections are made to the spring clamp terminal blocks. See Section 9.5. The chassis ground connection is made to the no. 8-32 stud. See Section 9.6. This safety ground connection should be made before operating the panel.
- 11.4 **Checking Connections.** Carefully check the polarity of input connections to the combination panel and output connections to the load before operating the panel. Reverse connections will not harm the combination panel as it is POLARITY NEUTRAL. However it may cause serious harm to the load. Check to make sure that the chassis safety ground connection is made. Make sure that all connections are clean and secure to minimize contact resistance.
- 11.5 **Rear Safety Cover.** Once all of the above have been completed, fit the clear plastic safety cover to the back of the unit using the supplied mounting studs and screws. Instruction for fitting the mounting studs the panel are included in the accessory kit.

12.0 SETUP AND TESTING

It is not necessary to have the combination panel mounted in a rack for initial testing. This can be done on a bench. It is also not necessary to have loads connected to the panel for this testing.

12.1 Distribution Sections

12.1.1 With the input power source off, connect the input wires to the A side of the combination panel. Connect ground to the chassis ground terminal. Insert all fuses into fuse holders or set all circuit breakers to on.

12.1.2 Turn on the input power source. The A side LED should be green. If it is red, one of the fuses is blown or a circuit breaker is tripped. If the LED is off, there is no input power to the unit. Check the output voltage at each set of output terminals with a digital voltmeter.

12.1.3 With the A side LED green, use an ohmmeter to check the Form C relay contact outputs. Measure the resistance between C and N.C. This should read “open”. Measure the resistance between C and N.O. This should read “short”.

12.1.4 On the A side insert a blown fuse into fuse no. 1 position or trip circuit breaker no. 1. The A side LED should turn red. On the side A alarm terminals, measure the resistance between C and N.O. This which should read “open”. Measure the resistance between C and N.C. This should read “short”. Replace the blown fuse with a good one or reset the circuit breaker.

12.1.5 On the A side check each succeeding fuse by replacing it with a blown fuse, or breaker by tripping it, and verify that the LED turns red. It is not necessary to recheck the Form C relay contacts.

12.1.6 Repeat the same tests of Sections 12.1.1 through 12.1.5 on the B side of the combination panel when another distribution section is fitted. Refer to table 5.

12.2 LVD Section

12.2.1 Set an unconnected bench-type DC power supply with digital voltage display to 48VDC if a 48V LVD is being set up or to 24VDC if a 24V LVD is being set up. Turn the power supply off.

12.2.2 Connect the power supply the input bus bars on the back of the LVD section. Connect the minus output to REC and the plus output to RTN. It is not necessary to make connection to the Battery or Load bus bars terminals for this test. Make sure the battery circuit breaker is “on”. If there is a bypass switch make sure it is “off”.

12.2.3 Turn the power supply on. The LED for side B (right one) should be off. Reduce the power supply output voltage slowly while observing the output voltage. At approximately 42.5V for the 48V version or 21.5V for the 24V version the red LED should turn on. With an ohmmeter, measure the resistance between side B alarm terminals N.O. and C. It should measure a short.

12.2.4 Increase the power supply output voltage slowly while observing the voltage. At approximately 49.0V for the 48V version or 24.5V for the 24V version the red LED should turn off. With an ohmmeter, measure the resistance between side B alarm terminals N.C. and C. It should measure a short.

12.2.5 With the red LED off, move the battery circuit breaker to the off position. The red LED should turn back on. With an ohmmeter, measure the resistance between side B alarm terminals N.O. and C. It should measure a short.

12.2.6 Turn off the power supply and disconnect from the panel. It is now ready for operation in the telecom system.

12.3 The combination panel may now be connected to its intended application.

12.4 If the combination panel did not operate properly in the above tests, go back and double check the connections and the polarity of the input source to make sure it is correct.

Please note that there are no user serviceable parts inside and that opening the unit will void the warranty.

Product support can be obtained using the following addresses and telephone numbers.

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Manufacturing facility:
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Toll Free: 1-800-440-3504

Web site – www.unipowerco.com

When contacting UNIPOWER, please be prepared to provide:

1. The product model number, spec number, S build number, and serial number
- see the equipment nameplate on the front panel
2. Your company's name and address
3. Your name and title
4. The reason for the contact
5. If there is a problem with product operation:
 - Is the problem intermittent or continuous?
 - What revision is the firmware?
 - What actions were being performed prior to the appearance of the problem?
 - What actions have been taken since the problem occurred?

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