Call U.S.: (954) 346-2442 • sales@unipower-corp.com
Call U.K.: +44(0) 1903 768200 • info@unipower-europe.com

PowerCassette®: 1U HIGH RACK-MOUNT DC/DC CONVERTERS

48VDC to 12 or 24VDC at 700 Watts with Hot Swap

FEATURES

- Isolated 5V, ¼ A Standby Output
- Hot-Swap Operation
- 12 or 24 VDC Output
- Up to 2100 Watts System Output
- Remote Output Adjustment
- Wide Range 40 to 60VDC Input
- Integral LED Status Indicators
- -20^{0}C to +70^{0}C Operating
- I^{2}C Serial Data Bus Option
- Up to 8.8 Watts/Cubic Inch Power Density
- Low Profile: 1.6 Inches High
- Single Hot-Swappable Connector
- Reverse Air Flow Option
- Staged Pin Engagement
- ORing Diode on Output
- 1U, 19” Rack/Shelf Holds 3 Units
- 19- or 23-Inch Rack Mounting
- Active Current Sharing
- Optimized Thermal Management
- No Minimum Load
- Control & Monitoring Features

TPCMQ48 Series

1U High
1.6” x 5” x 10”
(41 x 127 x 254 mm)

Three-Unit Rack/Shelf
TPCMQR1U3-48

CE
LVD73/23/EEC

TWO-YEAR WARRANTY
Patent Protected

STANDARD MODULES

MAX. OUTPUT POWER	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT VOLTAGE	MODEL NUMBER
650W 650W	12VDC 13.6VDC	54.2A 47.8A	40-60VDC 40-60VDC	TPCMQ48-12/54 TPCMQ48-13/48
700W 700W	24VDC 27.2VDC	29.2A 25.7A	40-60VDC 40-60VDC	TPCMQ48-24/29 TPCMQ48-27/26

NOTE: The table does not show the independent 5V, ¼A standby output which is standard on all models.

SYSTEM RACK/SHELF (See Page 3)

MODEL	WIDTH	HEIGHT	NO. OF MODULES
TPCMQR1U3-48	19” (483 mm)	1.72” (43.7 mm)	3

NOTE: System rack and hot-swap modules must be ordered separately. Brackets are available for mounting the 19-inch rack/shelf.

OPTIONS

CODE	DESCRIPTION	OUTPUT DERATING
R	Reverse Air Flow (Back to Front)	20%
Z	I^{2}C Serial Data Bus	N/A

NOTE: Add Option Code as suffix to model no. on both module and rack/shelf. Contact factory on availability of Option Z.

SAFETY STANDARDS

UL60950-1
CSA22.2, No. 60950-1
EN60950-1

www.unipowercorp.com or www.powercassette.com

UNIPOWER CORPORATION

SPECIFICATIONS, TPCMQ48 SERIES DC/DC CONVERTERS

Typical at Nominal 24VDC Input, Full Load and 25°C Unless Otherwise Noted.

OUTPUT SPECIFICATIONS

Total Output Power, Continuous, Max.	650-700 Watts
Voltage Adjustment Range, Min.	-25% to +10%
Total Regulation[1]	2.0%
Total Regulation, Standby Supply	5.0%
Ripple & Noise, Pk-Pk[2]	200mV
Voice Band Noise	<32dBrnC
Dynamic Response[3]	300µS
Temperature Coefficient	±0.02%/°C
Minimum Load	0A
Current Limit	105% Rated Current
Overload Protection	Auto Recovery
Overvoltage Protection	Latched Shutdown
Remote Sense	Up to 0.25V Per Wire
Current Share	±10% Full Load Rating
Standby Output	+5V, 250mA
Output Power Good Signal	Logic Low
Input Power Fail Signal	Logic High
Inhibit	Logic Low
Enable	Logic Low
Thermal Warning	Logic High

INPUT SPECIFICATIONS

Input Voltage Range	40-60VDC
Inrush Current Limiting	10A Peak
Input EMI Filter	Standard
Analog Voltage Adjust	0 to +5V
Input Immunity, Conducted	
Fast Transients, Line-Line	±500V (EN61000-4-4)
Surges, Line-Line	±500V (EN61000-4-5)
Surges, Input Ground	±500V (EN61000-4-5)
Input Protection	Internal Fuse, 30A

GENERAL SPECIFICATIONS

Efficiency[4]	82-88% at Full Load
Switching Frequency,	210kHz Nominal
Isolation, Class I, min.[5]	
Input-Output	2121VDC
Input-Ground	1000VDC
Output-Ground	100VDC
MTBF (Bellcore)	200,000 Hours
Safety Standards..	EN60950, UL1950, CSA22.2 No.950

ENVIRONMENTAL SPECIFICATIONS

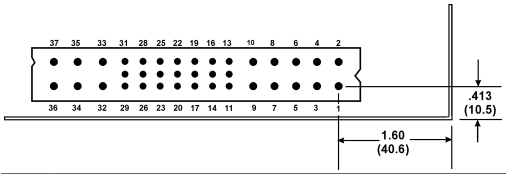
Operating Temperature	-20°C to 70°C Ambient
Derating	2.5% / °C, 50°C to 70°C
Storage Temperature	-40°C to +85°C
Cooling	Integral Ball Bearing Fans

PHYSICAL SPECIFICATIONS

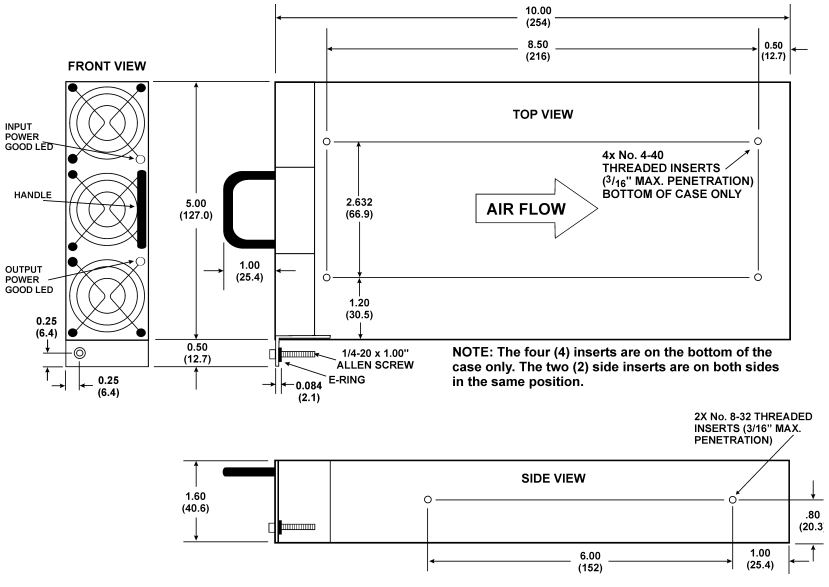
Case Material, Module & Rack/Shelf	Aluminum
Dimensions, Inches(mm), Module	1.6 H x 5.0 W x 10.0 D (40.6 x 127 x 254)
Rack/Shelf	1.72H x 19.00 W x 11.56 D (44 x 483 x 294)
Weight, Module	3.15 lbs. (1.43 kg.)
Rack/Shelf	4.15 lbs. (1.88 kg.)

NOTES:
1. No load to full load, including line regulation and load regulation.
2. Whichever is greater. 20MHz bandwidth. Measure with 0.1µF ceramic and 10µF tantalum capacitors in parallel across the output.
3. <4% deviation recovering to within 1% for 25% load change.
4. Typical efficiency is at low end of range for 12V output and at high end of range for 24V output.
5. Input-output isolation figure is for isolation components only. 100% production Hipot tested input to ground.

CONNECTOR: POSITRONICS PCIM37W16RM400A1
MATE: PCIM37W16RF400A1



CASE OUTLINE



PIN CONNECTIONS			
PIN	**FUNCTION**	**PIN**	**FUNCTION**
1	+V Out	14	Output Power Good/ADD GA1
2	+V Out	15	Input Power Fail
3	+V Out	16	V Trim
4	V Return	17	Overtemp. Warning/ADD GA0
5	V Return	18	Current Share
6	V Return	19	Current Monitor/ADD GA2
7	Enable	20	+ 5V Standby
8	+Sense	21	Standby Return
9	- Sense	22	Chassis Ground
10	Inhibit	23	Chassis Ground
11	Spare/SDA	24	- DC Input
12	Spare/SCL	25	- DC Input
13	- Sense	26	+ DC Input

***NOTES:** For unit to operate, pin 7 must be at logic LO or shorted to pin 9. For proper operation the following pins must be connected together: All V Out pins (1-3); all V Return pins (4-6). Pins 11, 12, 14, 17 & 19 carry I²C functions when the I²C option is fitted.

MATING INTERFACE BOARD
Order Kit Number 009-0280-0009

ALL DIMENSIONS IN INCHES (mm).
All specifications subject to change without notice.

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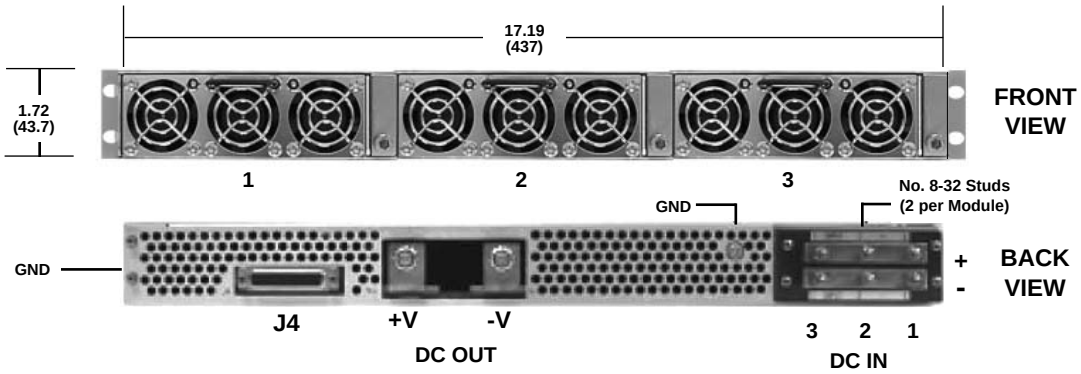
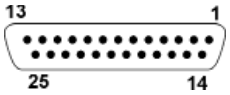
SPECIFICATIONS, TPCMQR1U3-48 RACKS/SHELVES



J4 SIGNAL CONNECTOR



Standard 25-Pin
Subminiature D Connector

J4 PIN CONNECTIONS			
PIN	**FUNCTION**	**PIN**	**FUNCTION**
1	Inhibit	14	Input Power Fail - 1
2	Overtemp. Warning - 1	15	Output Power Good - 1
3	Current Monitor - 1	16	Input Power Fail - 2
4	Overtemp. Warning -2	17	Output Power Good - 2
5	Current Monitor - 2	18	Input Power Fail - 3
6	Overtemp. Warning - 3	19	Output Power Good - 3
7	Current Monitor - 3	20	Module Present -1
8	+5V Standby	21	Module Present - 2
9	SDA	22	Module Present - 3
10	Current Share	23	- Sense
11	+Sense	24	Remote Adjust -1
12	Remote Adjust - 2	25	Remote Adjust - 3
13	SCL		

NOTE: Standby return is connected to -Sense lead. Current rating of +5Vstandby is 250mA. All signals are referenced to -Sense lead. Pins 9 and 13 are I²C outputs when that option is present.

MAXIMUM RATED OUTPUT FOR 3 MODULES		
MODULES	**NON-REDUNDANT**	**2+1 REDUNDANT**
TPCMQ48-12/24	12VDC @ 150.0A	12VDC @ 108.4A
TPCMQ48-13/48	13.6VDC @ 143.4A	13.6VDC @ 143.4A
TPCMQ48-24/29	24VDC @ 87.6A	24VDC @ 58.4A
TPCMQ48-27/26	27.2VDC @ 77.1A	27.2VDC @ 51.4A

RACK ADAPTOR MODULES & ACCESSORIES: Order by Part No.		
Type	**Function**	**PART NO.**
Relay Adaptor	Converts TTL level DC Good signal to Form-C dry contact. (See separate datasheet for details.)	009-1005-0000
SNMP Adaptor	Sends SNMP Alarm Traps over an TCP/IP Ethernet network on change of state of the DC Good signals. (See separate datasheet for details.)	009-1006-0000
I²C Adaptor	Required when using with DSC1000 Controller. Specify -Z option. (See DSC1000 Manual for full details.)	009-1001-0000
Blanking Kit	Used to blank off unused module slots. One fitted as standard.	775-1450-0010

NOTES:

1. All connections are made to the rear of the rack/shelf. The modules are 1, 2, 3, from left to right as seen from the front of the rack/shelf.
2. All module outputs are connected in parallel in the rack/shelf with active current sharing between them.
3. There is a separate DC input for each module, but the inputs may be paralleled by means of two shorting bars. Order kit no. 775-1461-0000 for the two bars.
4. The Module Present outputs (J4 pins 20, 21 & 22) are grounded (to -Sense) when the module is plugged in and open when the module is out.
5. For details on the I²C function (option Z), contact the factory.