

**JASPER
ELECTRONICS**



FEATURES

- Standard PCI Output Voltages: 5.0V, 3.3V, $\pm 12.0V$, with Variable Currents
- Hot Swap, N+1 Redundant with Internal OR-ing Diodes
- .99 Power Factor Corrected AC 90-264V Input, DC 36-72V (48V nom), or DC 18-32V (24V nom)
- Current Sharing on 5.0V and 3.3V Outputs
- Standard 47 Pin or 32 Pin DIN Connector Configurations
- Custom Configurations To Meet User Specified Requirements
- Excellent Performance, Competitively Priced
- 2 Year Warranty
- Complies With All Requirements Of PICMG Power Interface Specifications
- Fully Compliant with the EU RoHS Directive**
- cULus, TUV, CE Marked



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CompactPCI® Series

175 Watt and 200 Watt Power Supplies

(PICMG® COMPLIANT)



COMPACTPCI® SERIES FRONT VIEW

GENERAL OVERVIEW

Jasper's Compact PCI Power Supplies comply with the industry standard PICMG requirements and are available in AC or DC input, from 175W to 500W DC output.

FEATURES ON SELECT MODELS INCLUDE:

- AC/DC: 90-264 VAC Input – 175, 200, 250, 300, 350, & 500 Watt Models – 3U & 6U x 8HP
- DC/DC: 36-72V DC Input – 175, 200, 250, 300, 350, & 500 Watt Models – 3U & 6U x 8HP
- PICMG 2.11 Compliant
- Active PFC
- UL/CSA, NEMKO/TUV & CE Certified
- RoHS Compliant
- Current Sharing on 3.3, 5 & +12V Rails
- Hot Swap & ORing Diodes N+1 Operation
- Standard 47 Pin Output Connector with 38 & 32 Pin Options (Some Models)
- Models can be ruggedized against high shock, vibration, and humidity to meet MIL-STD-810 requirements
- Customizing To Meet Your System Requirements Is Our Specialty



ISO9001:2015

Rev C-November-15-2023

TECHNICAL SPECIFICATIONS

INPUT				
Voltage/ Current	AC 90-264V, 47-63Hz, 1 Phase, 2.8A max @ 175W, 3.2A max @ 200W output			
	DC 36-72V (48V nom), 6.9A max @ 175W, 7.9A max @ 200W output			
Fusing	Internal line fuse provided, non-user serviceable. AC- 3.15A, 250V 36V DC- 10.0A; 24V DC - 30.0A			
AC Power Factor	0.99 line PFC typical at AC 115V, full load			
AC Inrush Current	Thermistor soft start. ~25°C AC cold start current 15Apk @ AC 115V; 30Apk @ AC 230V			
Transient Protection	MOV. Withstands transients as specified by IEEE C62.41 3KV (<i>differential and common mode</i>)			
EMI Filtering	Meets IFCC Level B, and EN 55022 Level B (<i>conducted</i>)			
Efficiency	70% typical at AC 115V, full load			
Redundant/Hot Swap	Full power N+1 redundant, hot swap capable			
OUTPUT				
Voltage/Current (V/A)	V1	V2	V3	V4
Model PCI174-1022	5.0/25	3.3/20	+12/6.0	-12/1.0
Model DPCI174-1022	5.0/25	3.3/20	+12/6.0	-12/1.0
Total loading on all outputs not to exceed 175W. Combined load on V1 + V2 not to exceed 30A.				
Model PCI204-1022	5.0/30	3.3/25	+12/6.0	-12/1.0
Model DPCI204-1022	5.0/33,	3.3/33	+12/6.0	-12/1.0
Total loading on all outputs not to exceed 200W. Combined load on V1 + V2 not to exceed 38A.				
Model PCI204-1022 / P*	5.0/25	3.3/25	+12/6.0	-12/1.0
Model DPCI204-1022 / P*	5.0/25	3.3/33	+12/6.0	-12/1.0
Total loading on all outputs not to exceed 200W. Combined load on V1 + V2 not to exceed 35A				
Line Regulation	At the Sense Point, Over Full Input Range <±1%, sense leads connected			
Load Regulation	Output voltage droops with increasing load			
	0.25V min load to full load	0.15V no load to full load	0.25V no load to full load	N/A
Remote Sense	V1, V2, V3 outputs compensate for up to 0.25V total line drop in the load cables. Outputs are internally sensed if leads are opened			
*Minimum Loading	5% minimum on V1 for standard models. None required for option “P” models			
Over/ Under Shoot	None at turn-on or turn-off			
Stability	Output drift <±0.2% after 20 minute warm-up			
Temperature Coefficient	<±0.02%/°C, 0° - 50°C, after 20 minute warm-up			
Dynamic Response	Less than 3% deviation with a 25% load change at 1A/μsec. Output returns to within 1% in less than 300μsec			
Ripple and Noise (PARD)	For all outputs, 50mV max or 1% peak-to-peak nominal, which ever is greater, DC to 20MHz bandwidth with a coaxial probe and 0.1μF/22μF capacitors at the output terminals			
Current Sharing/ Parallel N+1 Operation	V1, V2, V3 Outputs. Droop method standard. Optional single wire design in development. Consult factory for availability			

*Specifications subject to change without notice.

Hold-Up Time	Outputs remain in regulation >10mSec for 175W models or >8mSec for 200W models minimum following loss of AC power at low line, full load
Over Current/ Short Circuit Protection	Current limit on all outputs. Automatic recovery when overload is removed
Over Temperature Protection	Internal temperature sensing. Causes all outputs to shut down. Automatic recovery
Under Voltage Warning	Any output dropping below 10% of nominal triggers the power fail warning signal
Over Voltage Protection	Non-crowbar type. Any output that exceeds 25% \pm 10% of nominal Vout will cause all outputs to latch off. Remote inhibit, enable or input recycle required to reset
SIGNALS, INDICATORS AND CONTROLS	
Remote Enable	Enabled by closed circuit or TTL logic 0. Disabled by open circuit or TTL logic 1
Remote Inhibit	Enabled by open circuit or TTL logic 1. Disabled by closed circuit or TTL logic 0
Power Fail Warning	Loss of input AC causes a TTL compatible signal to go low >4msec prior to any output dropping out of regulation. At AC turn-on, signal stays low until all outputs are in regulation. PF signal also triggered by an under voltage condition on any output
LED Indicator	Dual LEDs. Green indicates input power ON and outputs within regulation. Off or Amber indicates input and/or output power fault
MECHANICAL	
Outline	3U x 8HP front panel. Refer to JE Outline Dwg #02102-000 or the Mechanical Outline in this catalog. Complies with all current PICMG® CompactPCI PSU specifications
Weight	Approx: 1.8 lbs / 1.06 kgs.
Retaining Latches	Supplied with a single Rittal #3688.779 Type VII (Telecom) Lower Latch. Other manufacturers and types available. Consult factory
Guide Rails	Supplied with .260[6.61] offset guide rails for use with Rittal 3687.832 (or equivalent) PSU guides
Front Panel Overlay	Supplied with Lexan overlay and JE Logo. May be deleted, or supplied with customer specified logo or other information. Consult factory
OPERATING ENVIRONMENT	
Operating Temperature	0° – 50°C ambient at full load, with specified airflow
Cooling	A minimum of 15 cfm / 400 lfm direct forward airflow required to achieve full rated power and specified MTBF. Consult factory for derating guidelines with reduced or reversed airflow
Relative Humidity	Up to 90% RH, non-condensing
Operational Vibration	0.75G peak, 5 – 500Hz along three orthogonal axis
Storage Temperature	-40° to 85°C
Altitude	Operating to 10,000 ft; Storage to 30,000 ft.
MTBF	Designed for 150,000 hrs at 25°C
INTERCONNECT	
I/O Connectors. Refer to JE Outline Configuration Drawing #02102-000 or the chart in this catalog for pin function identification	
47 Circuit	Positronic Ind. P/N PCIH47M400A1. Mates with PI P/N PCIH47F300A1
32 Circuit (AC only)	Contact factory
Note: Use of the specified mating connector is required to insure proper “make/break” sequential contact sequence	
SAFETY	
All AC Models	
48V DC only	Recognized to U.S. and Canadian Bi-National Standard CSA C22.2 No. 60950 / UL 60950, Third (3rd) Edition (cULus); TUV approved to TUV EN60950/A1-A4/A11. CE Marked. CB Reports available on request

*Specifications subject to change without notice.

32 PIN DIN I/O CONNECTOR FUNCTIONS

PIN#	SEQ ⁽¹⁾	FUNCTION	
2B	2	Input Power	Line (L) AC Power Input
5B	2	Input Power	Neutral (N) ACC Power Input
8B		N/C	No Connection
11B	1	PE	Protective Earth (chassis) Ground
13A	2	N/C	No Connection
13-18B	2	+3.3V	V2 Output
13C	3	R/EN	Remote Enable. Close circuit to GND.
14A	2	R/INH	Remote Inhibit. Close circuit to GND.
14C	2	DEG	Thermal Degrade Signal
15A	2	N/C	No Connection
15C	2	PF	Power Fail Signal
16A	2	Guide S-RTN	Sense Return
16,18C	2	N/C	No Connection
17A	2	+S1	+5.0V (V1) Remote Sense
17C	2	N/C	No Connection
18A	2	+S2	+3.3V (V2) Remote Sense
19 A,C	2	N/C	No Connection
19B	2	+12.0V	V3 Output
20A,C	2	N/C	No Connection
20B	2	-12.0V	V4 Output
22B	2	+5.0V	V1 Output
25B	2	DC Com	DC Common Return
28,31 B		N/C	No Connection

47 PIN DIN I/O CONNECTOR FUNCTIONS

PIN#	SEQ ⁽¹⁾	FUNCTION	
01-04	2	+5.0V	v1 Ouput
05-12	2	GND	V1+V2 Return
13-18	2	+3.3V	V2 Output
19	2	GND	V3 Return
20	2	+12.0V	V3 Output
21	2	-12.0V	V4 Output
22	2	RTN	Signal Return
23	2	N.C	No Connection (Reserved)
24	2	GND	V4 Return
25,26	2	N/C	No Connection (Reserved)
27	3	R/EN	Remote Enable. Closed Circuit to GND
28,29	2	N/C	No Connection (Reserved)
30	2	+S1	+5.0V (V1) Remote Sense
31,32	2	N/C	No Connection (Reserved)
33	2	+S2	+3.3V (V2) Remote Sense
34	2	S+RTN	Sense Return for V1, V2, V3
35	3	ISHR-1	+5.0V(V1) Current Share (Option C)
36	2	+S3	+12.0V (V3) Remote Sense
37	2	N/C	No Connection (Reserved)

38	2	DEG	Thermal Degrade Signal
39	2	R/INH	Remote Inhibit, Close circuit to GND
40	2	N/C	No Connection (Reserved)
41	3	ISHR-2	+3.3V (V3) Current Share (Option C)
42	2	PF	Power Fail Signal
43	2	N/C	No Connection (Reserved)
44	3	ISHR-3	+12.0V (V3) Current Share (Option C)
45	1	PF	Protective Earth (chassis) Ground
46	2	Input Power	PCI: Neutral (N) ACC Power Input DPCI: +DC
47	2	Input Power	PCI: Line (L) AC Power Input DPCI: -DC
*(1) Contact mating sequence. 1= First to make/ last to break			

CONFIGURATION OPTIONS

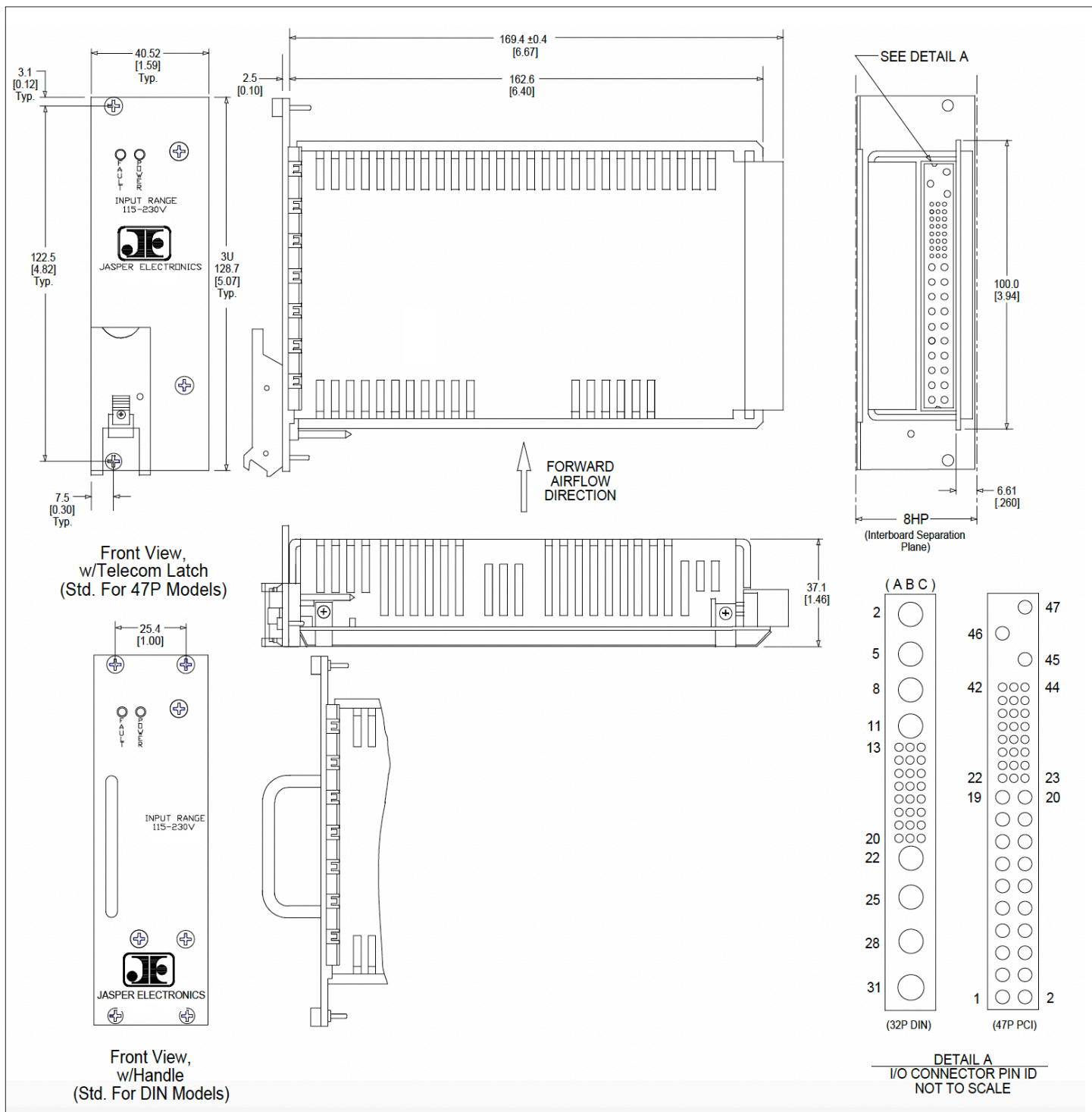
OPTION	CODE
(1) Connector Type	4 = 47 pin (PICMG standard); D = 32 pin DIN41612 (available on AC input models only).
(2) 24V DC Input	Blank = No code for AC or 48V DC input used; /24 = Required for 24V DC input models only.
(3) Current Sharing	Blank = Standard configuration. Droop method (no code letter required); C = Optional single wire I-SHR for V1, V2, V3 (47 I/O circuit models only). (Consult factory for availability.)
(4) Internal Preload	Blank = Standard configuration. Refer to minimum external preload requirements in the general specifications. P = Optional internal preload on V1.
(5) Latch Type	S = Standard Telecom Type VII; or, for 32P DIN models, standard handle; O = Optional Type IV; no options for 32P DIN models; N = None provided (no latch for 47P PCI models or handle for 32P DIN models).
(6) Overlay	S = Standard (JE Logo, model designation, etc); B = Blank (No logo, model designation, etc); N = No overlay provided; NN = No overlay; in addition, the front panel including the EMI strip is also deleted. For user provided panel or custom enclosure applications. Note: Removal of the panel does not violate safety enclosure requirements or integrity. Contact the factory for panel fastener type, max penetration depth and location information. *M = Custom – User specified. See (7).
(7) Custom Configuration	M = Modified, followed by a factory assigned 4-digit number to identify a user specified configuration. Such models may include special or non-standard features and/or options, or be in a configuration differing sufficiently from the design of the approved similar standard model from which it is derived to require re-evaluation of all or part of the design to insure continuing compliance with all safety requirements. Option codes 3,4,5,6 may not be present in the model description as these requirements are generally included in the user specification documentation on file with the factory. Consult the factory for exact requirements. (May incur additional cost. Consult factory.)
(8) RoHS 6 Compliant	G = Jasper products that are fully compliant with the requirements of Directive 2015/863/EU Restrictions of Hazardous Substances (RoHS) are identified with the letter code "G" either included in or adjacent to the model description on the unit labels and related documents (sales orders, etc). All materials, processes and packaging used in the assembly and shipping of this product comply. Available in the 2nd Quarter of 2006. Examples: PCI204-1022-4-PSNG DPCI204-1022-D-M5793 (Custom config.) DPCI174-1022-4/24-SS

Figure 1 is a mechanical drawing of a printed circuit board (PCB) layout. The drawing shows a rectangular board with various dimensions and features. Key dimensions include:

- Top edge dimension: $4.08 + L \times 5.08$ [0.161] [0.200]
- Top-left corner dimension: 7.62 [0.3]
- Top-right corner dimension: 122.5 [4.82]
- Right edge dimension: 37.60 [1.48]
- Bottom-right corner dimension: 3.10 [0.12]
- Bottom edge dimension: $N \times 20.32 + 7.40$ [0.800] [0.291]
- Left edge dimension: 61.25 [2.41]

The drawing also shows a central horizontal slot, a vertical slot on the right side, and a grid of circular holes. Labels include "FIRST INTERBOARD SEPERATION PLANE" and "LAST INTERBOARD SEPERATION PLANE".

COMPACTPCI® OUTLINE DRAWING



LIMITED WARRANTY POLICY

All Jasper Electronics (JE) standard model power supplies and products are guaranteed to be free of defects in workmanship and materials for a minimum of two (2) years from the date of original shipment, when operated within specification. Non-standard (custom) power supplies and products may be warranted on an individual basis. The unused portion of this warranty is fully transferable with the original equipment in which the power supply is installed. Please see our website for full warranty statement.

INNOVATIVE SPECIALTY DC POWER SYSTEMS

Standard and Custom Power Supplies from 5W to 10KW

TRAFFIC CONTROL POWER SUPPLIES



- 70W - 250W / 120 and 220 VAC Models available
- California Department of Transportation (CALTRANS) TEES 2020 and NYSDOT compliant for 332L, 334L, and 336L cabinets.
- RoHS and NEMA compliant
- Custom labeling and barcoding available optionally
- Ruggedization against shock/ vibration/ humidity optional

COMPACT PCI



- AC or DC input, 175W - 500W DC output, active PFC
- 3U x 8HP, 6U x 8HP sizes
- PICMG 2.11 compliant, UL/CSA, NEMKO/TUV/CE certified, ROHS compliant
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Industrial Computing, Military, Satellite Comm, Test, Transportation, Telecom, Aerospace

SPECIALTY HOT-SWAPPABLE POWER SUPPLIES



- 200-1500W, Universal Input, 5-54VDC Output
- Hot Swap. N+1, 90+% Efficiency
- 1U Form Factors
- 30+ Variations for Various Applications Including Nuclear
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

RACK POWER SYSTEMS



- 200W-1500W, 2-8 slots, single or mixed output voltages, up to 10KW total
- Single, dual, or individual unit AC or DC input
- Internally or externally redundant DC outputs
- Standard 19" and 23" size or user-specified configurations also available
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

CUSTOMS & MODIFIED STANDARDS



- 75W-2KW
- Single to 7 outputs
- Designed and built to custom or semi-custom specifications
- Ruggedization against shock/ vibration/ humidity optional
- Custom electrical specs, chassis, paint, labeling, connectors, interface all available

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

LOW NOISE CONVECTION COOLED POWER SUPPLIES



- 200W-500W, 90—264VAC full range input with 12-54 VDC Output
- Wide operating temperature range / high efficiency
- Small form factors
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, IT, Sensitive Electronics

MEDICAL ADAPTERS



- 6W-250W, Efficiency levels V & VI
- Desktop, Wall-mount, and Interchangeable AC plug types
- Large selection of output connectors – additional cable lengths available
- UL60601 (medical) approved adapters available
- Ruggedization against shock/ vibration/ humidity optional

MEDICAL OPEN FRAME



- 40-350W
- Nemko, UL, and CSA Approved
- Medical (BF) Safety Approved
- Class I and Class II Options
- Ruggedization against shock/ vibration/ humidity optional

