JASPER ELECTRONICS
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CompactPCI®

200 Watt – 3U 4HP, 3U 6HP

Power Supplies

(PICMG® COMPLIANT*)

Features:

- ✓ **Standard PCI Output Voltages: 5.0V, 3.3V, ±12.0V, with Variable Currents.**
- ✓ **Hot Swap, N+1 Redundant with Internal OR-ing Diodes.**
- ✓ **Input: >.99 Power Factor Corrected AC 90-264V, or DC 36-72V.**
- ✓ **Current Sharing on 5.0Vand 3.3V Outputs.**
- ✓ **Standard 47 Pin Connector Configuration.**
- ✓ **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 Approved.**

**CompactPCI® and PICMG® are registered trademarks of the PCI Industrial Computer Manufacturers Group.*

Cat.# 02127-004 B

GENERAL PRODUCT SPECIFICATIONS:

-INPUT-

Voltage/Current ..... **AC** 90-264V, 47-63Hz, 1 Phase, or **DC** 36-72V, 6.5A max.

Fusing ..... 10.0A Internal line fuse provided, non-user serviceable.

AC Power Factor ..... Meets Harmonic Correction per IEC 1000-3-2. 0.99 line PFC typical at AC 115V, full load.

Efficiency..... **AC** 70% typical at 115V, full load. **DC** 65% typical at 48.0V

Inrush Current ..... Soft start, ~25ºC cold start current: **AC** 30.0A (rms) @ 230V, **DC** 15.0ApK @ 48V.

EMI Filtering..... Meets IFCC Level A, and EN 55022 Level A.

-OUTPUTS-

Voltage/Current (V/A) V1 V2 V3 V4

AC: **HPCI204-1022-4** 5.0/30, 3.3/20, +12/5.0, –12/1.0.
Total continuous loading on all outputs not to exceed 200W.
Combined load on V1 + V2 not to exceed 150W.

DC: **HDPCI204-1022-4** 5.0/30, 3.3/20, +12/5.0, –12/1.0.
Total continuous loading on all outputs not to exceed 200W.
Combined load on V1 + V2 not to exceed 150W.

Line Regulation ..... At the sense point over full input range, <±1%, sense leads connected.

Load Regulation ..... **AC**: typical, V1, V2 ±0.5%; V3 ±1.0%; V4 ±3.0%. **DC**: typical, V1 ±1.0%; V2 ±1.5%; V3, V4 ±4.0%.

Minimum Loading ..... 5% minimum on V1.

Stability ..... Output drift <±0.2% after 20 minute warm-up.

Temp. Coefficient ..... 0º - 50ºC, after 20 minute warm-up. **AC**: <±0.04%/ºC; **DC**: <±0.02%/ºC.

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 connection for ±10% current sharing between any number of units in development. Consult factory for availability.

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.

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.

Over/Under Shoot ..... None at turn-on or turn-off.

Under Voltage Warning… Any output dropping below 10% of nominal triggers the power fail warning signal.

Over Temperature Protection..... Non-crowbar type. Any output that exceeds 25% ±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 DC input causes a TTL compatible signal to go low. 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.

-OPERATING ENVIRONMENT-

Operating Temperature .. **AC** -30º to +50ºC ambient; **DC** 0º to +50ºC at full load, with specified airflow. Derates linearly to 50% at +70ºC.

Cooling, 3U 4HP..... A minimum of 800 lfm direct forward airflow required to achieve full rated power and specified MTBF. Consult factory for derating guidelines with reduced or reversed airflow.

Cooling, 3U 6HP..... A minimum of 400 lfm direct forward airflow required with the optional external heatsink.

Relative Humidity..... Up to 90% RH, non-condensing.

Operational Vibration ..... 0.75G peak, 5 – 500Hz along three orthogonal axis.

Storage Temperature..... -40º to 85ºC.

Altitude ..... Operating to 10,000 ft; Storage to 30,000 ft.

MTBF ..... Designed for 150,000 hrs at 25ºC.

-INTERCONNECT-

I/O Connector. Refer to JE Outline Configuration Drawing #02638-000 or the chart in this catalog for pin function identification-

47 Circuit..... Positronic Ind. P/N PCIH47M400A1. Mates with PI P/N PCIH47F300A1.

Note: Use of the specified mating connector is required to insure proper "make/break" sequential contact sequence.

-MECHANICAL-

Outline..... 3U x 4HP front panel. Refer to JE Outline Dwg #02638-000 or the Mechanical Outline in this catalog. Complies with pending PICMG CompactPCI PSU specifications.

Retaining Latches..... Supplied with a single Rittal #3686.135 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.

Weight ..... Approx: 1.8 lbs / 1.06 kg.

-SAFETY-

Recognized to U.S. and Canadian Bi-National Standard CSA C22.2 No. 60950 / UL 60950, Third (3rd) Edition (cULus); TUV approved to EN60950:2000.

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47 Pin I/O Connector Functions:

PIN#	SEQ(1)	FUNCTION	
01-04	2	+5.0V	V1 Output.
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. Close 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.

PIN#	SEQ(1)	FUNCTION	
34	2	S-RTN	Sense Return for V1, V2, V3.
35	**3**	ISHR-1	+5.0V (V1) Current Share (opt. C only).
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 (V2) Current Share (opt. C only).
42	2	PF	Power Fail Signal.
43	2	N/C	No Connection (Reserved).
44	**3**	ISHR-3	+12.0V (V3) Current Share (opt. C only).
45	**1**	PE	Protective Earth (chassis) Ground.
46	2	Input Pwr	DPCI: +DC Power Input.
47	2	Input Pwr	DPCI: -DC Power Input.

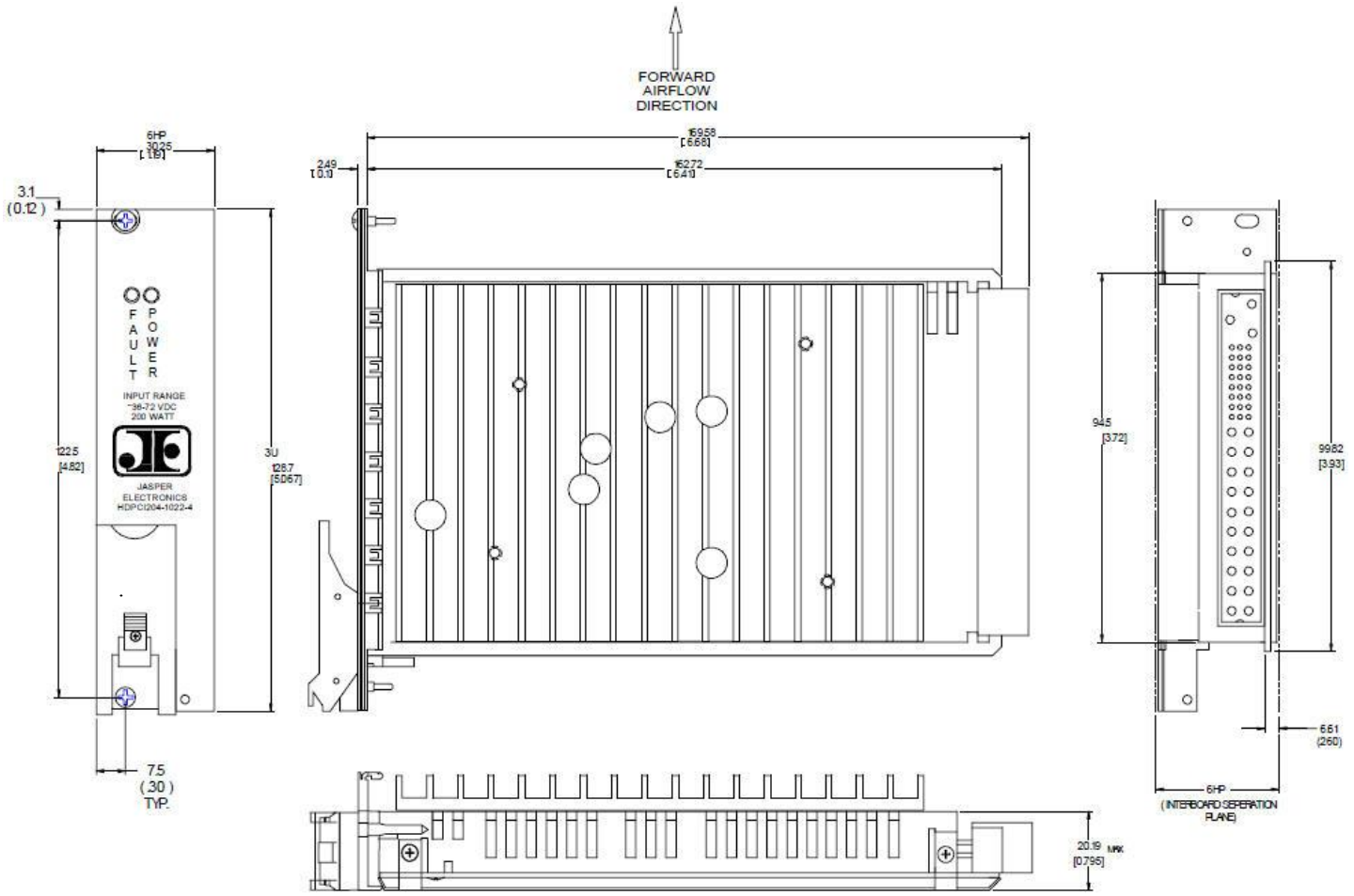
(1) Contact mating sequence. 1= First to make/Last to break.

Mechanical Outline

Option "A" 3U 6HP Configuration

(Dimensions in millimeters [inches])

(Not to Scale)



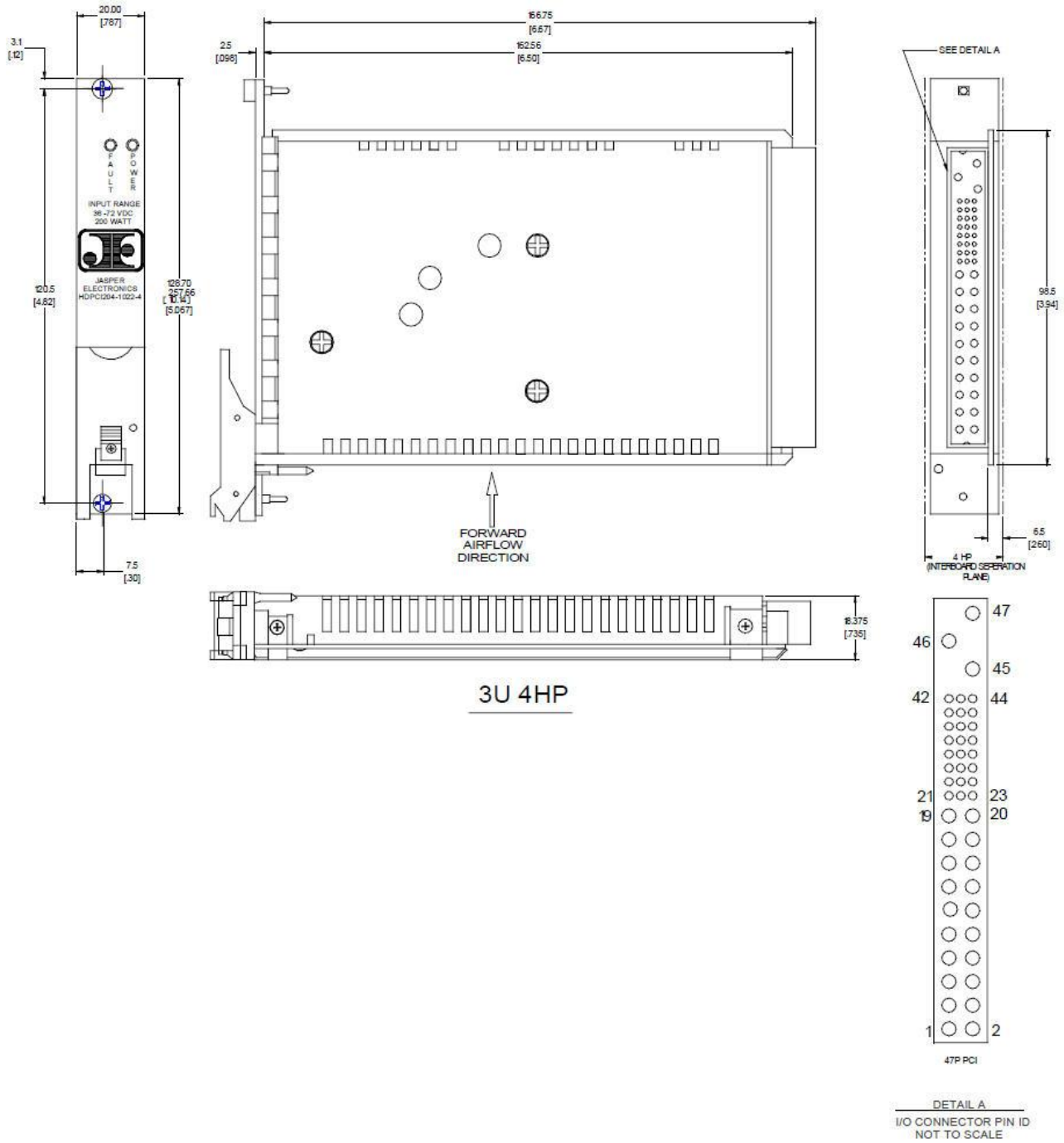
3U 6HP

Mechanical Outline

Standard 3U 4HP Configuration

(Dimensions in millimeters [inches])

(Not to Scale)



-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. This warranty applies only to defects that result in a failure to perform to published specifications. 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.

ORDERING INFORMATION:

A 3- to 6-character option code is required following the base model description to define the desired model configuration. Codes added in the following sequence, 1 from each category as required:

HD	PCI204-1022-	(1)-	(2)	(3)	4)	(5)	-(6)	(7)
Size/Input: H – 4HP[(1)] D – DC	Base Model w/ V_{out} Code. 204 – 200W	4- Connector Type	Current Share	Latch Type	Front Overlay Type	External Heatsink	-MXXXX User Specified Config.	G RoHS Compliant Model

[(1)]H also required for 6HP option "A" configuraton.

- ∗ Configuration Options -

Option: Code:

(1) Connector Type..... 4 = 47 pin PICMG standard. No other options currently available.

(2) Current Sharing.....Blank = Standard configuration. Droop method (no code letter required);
C = Optional single wire I-SHR for V1, V2, V3. (New: Consult factory for availability).

(3) Latch Type ..... S = Standard Type VII (Telecom).
O = Optional Type IV
N = None provided.

(4) Overlay..... S = Standard, with JE logo, model designation, etc.
B = Blank overlay applied; no logo, model designation, etc.
N = No overlay provided;
M = Custom overlay – User specified. See (6).

(5) External Heatsink……. ..A = Optional extruded aluminum, finned heatsink is secured to the cover for improved cooling in confined or high ambient environments. Increases overall width from 4HP to 6HP. 6HP front panel installed;

(6) 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 2, 3 and 4 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.)

(7) RoHS Compliant..... G = Required code. All Jasper products in this series are fully compliant with the requirements of Directive 2002/95/EC Restrictions of Hazardous Substances (RoHS) and are identified with the letter code "G" in the JE part number and 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.

Examples:		
	HPCI204-1022-4-SSG	AC input, 4HP
	HDPCI204-1022-4-SSAG	DC input, 6HP
	HDPCI204-1022-4-M2297G	Custom