



**UNIVERSAL AC INPUT HARMONIC CORRECTION
AC-DC HOT-SWAP LOW VOLTAGE CompactPCI
PENTA OUTPUT 200 WATTS ACTIVE CURRENT SHARING
SWITCHING POWER SUPPLIES HAC203P SERIES**



FEATURES:

- 200W 3U X 9HP EUROCARD PACKAGE
- MEET IEC 61000-3-2 HARMONIC CORRECTION
- INTERNAL OR-ING DIODES FOR N+1 REDUNDANCY
- HOT-SWAPPABLE
- THIRD-WIRE CURRENT SHARING
- EMI MEET EN 55022 / FCC CLASS A
- CE MARKING COMPLIANCE
- FULLY COMPLIANT WITH PICMG

SPECIFICATION

INPUT SPECIFICATION

Input Voltage: Typ. 90-264Vac.
Power Factor Correction: Meet Harmonic Correction IEC 61000-3-2. Power Factor typ. 0.97-0.98.
Input Connector: Positronic 47-pin PCIH47M400A1.
Input Frequency: 47-63Hz.
Inrush Current: 8.66Arms @ 230Vac.
Input Current: 2.5A @115Vac/1.18A @230Vac.
Dielectric Withstand: Meet IEC 60950-1 regulation.
EMI: Meet EN 55022 / FCC Class A.
Hold-up Time: 18.4mS @115Vac, 20.8mS @230Vac.
Earth Leakage: Less than 0.64mA @230Vac.
Remote ON/OFF: Available at [INH#] & [EN#] pins.
Status LED: <Green> means valid input voltage.
 <Amber> means a critical fault.
Thermal Protection (OTP): Installed NTC and thermostat for thermal sensor at [DEG#] pin.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.
Output Current: See Ratings Chart.
Output Wattage: Typ. 200W continuous.
Output Connector: Positronic 47-pin PCIH47M400A1.
Line Regulation: Typ. 0.2%.
Load Regulation: Typ. $\pm 1\%$.
Noise & Ripple: Typ. 1% peak to peak or 55mV, whichever is greater.
OVP: Built-in at all outputs.
Adjustability: Available at VO1,2,3 & 4.
Remote Sensing: Available at VO1, VO2, VO3 & VO4.
Hot-Swap: Available.
N+1 Redundancy: Installed with internal OR-ing diodes at all outputs for N+1 redundancy operation.
Current Sharing: Third-wire current sharing at VO1,2,3 & 4.
Over Current Protection (OCP): Installed at each rail.
DC OK: Available at VO1,2,3,4 & 5.
Overload Protection (OLP): Fully protected against output overload or short circuit. Typical 120-150% max. load. Consult the factory for special OLP setting.

GENERAL SPECIFICATION

Efficiency: Typ. 67-69 %.
Switching Frequency: 133K Hz.
Circuit Topology: Forward circuit.
Transient Response: Peak transient less than 50mV and recovers within 0.96mS after 25% load-change.
Safety Standard: IEC 60950-1 Class I.
Construction: Eurocard 3U X 9HP X 185mm CompactPCI format.

Operating Temperature: -5 to +50 °C at full load with specified air flow. Derates linearly to 50% at +60 °C.
Storage Temperature: -40 to +85 °C.
Temperature Coefficient: Typ. $\pm 0.02\%$ / °C.
Cooling: At least 14CFM moving air is required to achieve full rating power 200W in a confined area.
Power Density: 2.85 Watts/ Cubic Inch.

Note: Due to requests in market and advances in technology, specifications subject to change without notification.



In application

OUTPUT VOLTAGE / CURRENT RATINGS CHART

PENTA OUTPUT

MODEL NO.	MAIN +VO1★@#≡○				AUX. +VO2★@#≡○▲				AUX. +VO3★@#≡○▲				AUX. +VO4★@#≡○▲				AUX. VO5★○●◇			
	Min.	Typ.	Volt.	Max.	Min.	Typ.	Volt.	Max.	Min.	Typ.	Volt.	Max.	Min.	Typ.	Volt.	Max.	Min.	Typ.	Volt.	Max.
HAC203P-P033BCEI(E)	1A	20A	3.3V	20A	0.5A	9A	5V	9A	0A	12A	2.5V	12A	0A	17A	1.5V	17A	1A	2A	12V	2A

Symbol: "★" OVP built-in. "@" Adjustable. "#" Remote sensing. "≡" 3rd-wire Load Sharing. "◇" Floating.

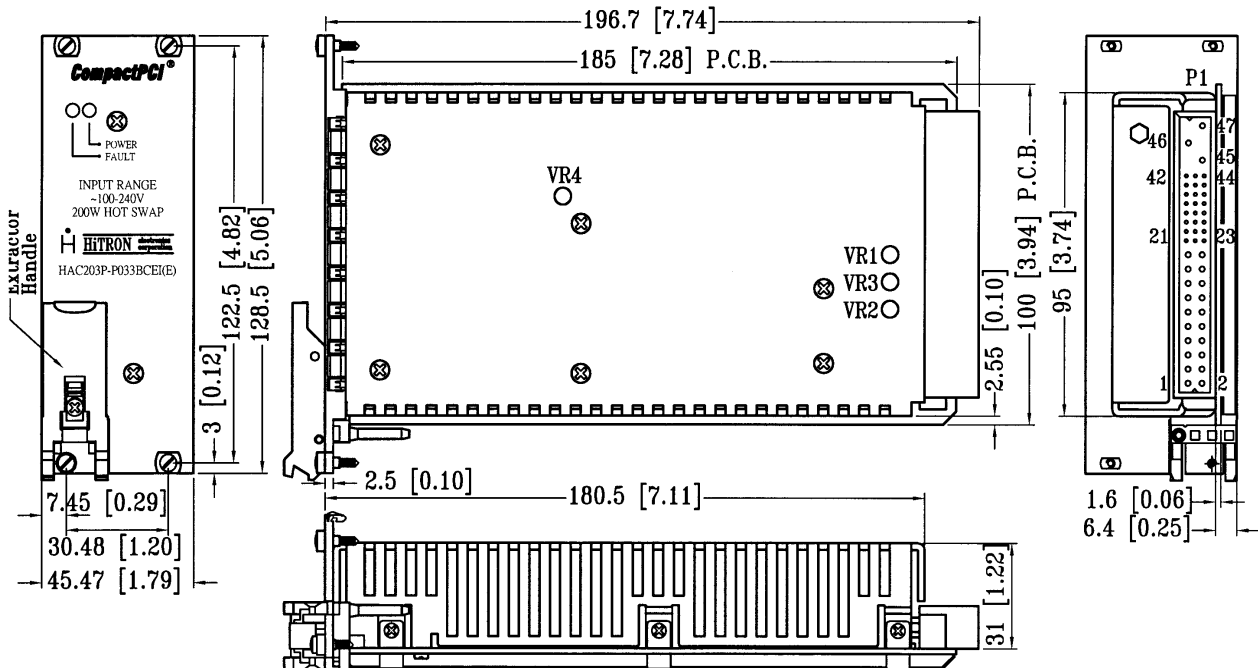
"○" Installed with Or-ing diode. "▲" Magnetic Amplifier. "●" Installed with Post Regulator.

Remark: Peak load less than 60sec. with duty cycle <10%.

Max. load is the continuous operating load of each rail. But the max. load of each rail can't be drawn from all outputs at the same time.

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 666.0 g (23.5 Oz.)



INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

ASSIGNMENT	AC INPUT			PENTA OUTPUT															
	L	N	G	V1	V2	V3	V4	DC COM	+V5	-V5	V1 S	V2 S	V3S	V4 S	-S	V1 CS	V2 CS	V3 CS	V4 CS
CNTR & PIN #	47	46	45	13,14,15,16,17,18	1	2	3,4	5,6,7,8,9,10,11,12,22,24	20	19	33	30	35	37	34	28	29	25	26
STATUS/CONTROL																			
ASSIGNMENT	EN	DEG	INH	FAL	CRD-EXEISIT 1		CRD-EXEISIT 0		SLOT_ID0		SLOT_ID1		I ² C_SDA		I ² C_SCL		NC		
CNTR & PIN #	27	38	39	42	31		32		40		41		43		44		21,23,36		

Mating connector: PCIH47F400A1.