

# HiTRON

## UNIVERSAL AC INPUT HARMONIC CORRECTION AC-DC HOT-SWAP CompactPCI QUAD OUTPUT 400 WATTS ACTIVE CURRENT SHARING SWITCHING POWER SUPPLIES HAC400P SERIES



### FEATURES:

- 400W 6U X 8HP 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 / CLASS B
- CE MARKING COMPLIANCE
- FULLY COMPLIANT WITH PICMG

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typ. 90-264Vac.  
**Input On/Off switch:** Option.  
**Power Factor Correction:** Meet Harmonic Correction IEC 61000-3-2. Power Factor typ. 0.99.  
**Input Connector:** Positronic 47-pin PCIH47M400A1.  
**Input Frequency:** 47-63Hz.  
**Inrush Current:** Typ. 30Arms @ 230Vac.(Active).  
**Input Current:** 5.1A@115Vac/2.6A @230Vac.  
**Dielectric Withstand:** Meet IEC 60950-1 regulation.  
**Transient Protection:** MOV withstands transient as specified by EN 61000-4-4 level 3.  
**EMI:** Meet EN 55022 Class B.  
**Hold-up Time:** 30ms @ 115Vac, 34ms @ 230Vac.  
**Remote ON/OFF:** Available at [INH#] & [EN#] pins.  
**Power Fail Signal:** Available at [FAL#] pin.  
**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.  
**Leakage Current:** Typ. 0.7mA @ 230Vac.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Power:** Typ. 400-450W continuous.  
**Output Connector:** Positronic 47-pin PCIH47M400A1.  
**Line Regulation:** Typ. 0.1%.  
**Load Regulation:** VO1 typ.  $\pm 1.0\%$ , VO2 typ.  $\pm 1.5\%$ , VO3 typ.  $\pm 3.0\%$ , VO4 typ.  $\pm 3.0\%$ .  
**Noise & Ripple:** 1% peak-peak or 50mV, whichever is greater.  
**OVP:** Built-in at all outputs.  
**Adjustability:** Available at VO1, 2 & 3.  
**Output Trim:** Electrical trim available at VO1/2. [ADJ #].  
**Remote Sensing:** Available at VO1, VO2 & VO3.  
**Hot-Swap:** Available.  
**N+1 Redundancy:** Installed with internal OR-ing diodes at all outputs and third-wire current sharing method for N+1 redundancy operation.  
**Current Sharing:** Third-wire current sharing at VO1, 2 & 3.  
**DC OK Signal:** Available for all outputs.  
**Power OK Signal:** Available for all outputs.  
**Over Current Protection (OCP):** Installed at each rail.  
**Overload Protection (OLP):** Fully protected against output overload or short circuit. Typ. 120-130% max. load. Consult the factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 76-81 %.  
**Switching Frequency:** 120K Hz.  
**Circuit Topology:** Forward circuit.  
**Transient Response:** Peak transient less than 250mV and returns to within 1% less than 1.0mS for 25% load-change.  
**Safety Standard:** IEC 60950-1 Class I.  
**Construction:** Eurocard 6U X 8HP X 160mm CompactPCI format. Front Panel with Extractor handle.  
**Operating Temperature:** 0 to +50 °C at full load with specified air flow. Derates linearly to 50% at +70 °C.  
**Storage Temperature:** -40 to +85 °C.  
**Temperature Coefficient:** Typ.  $\pm 0.04\%$  / °C.  
**Cooling:** At least 600LFM/20CFM moving air is required to achieve full rating power 400W in a confined area.  
**Power Density:** 3.98 Watts/ Cubic Inch.

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



For the details of safety approval, please consult the factory.

# OUTPUT VOLTAGE / CURRENT RATINGS CHART

## QUAD OUTPUT

MODEL NO.	MAIN +VO1 @★#≡○				AUX. +VO2 ▲@★#≡○				AUX. +VO3 ▲#≡○★@					AUX. -VO4 ▲○★				
	Min.	Typ.	Volt.	Max.	Min.	Typ.	Volt.	Max.	Min.	Typ.	Volt.	Max.	Pk.	Min.	Typ.	Volt.	Max.	Pk.
HAC400P-490	4.0A	40A	+5V	55.0A	0A	20A	+3.3V	55A	0A	10A	+12V	14A	15A	0A	3A	-12V	4A	5A

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

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

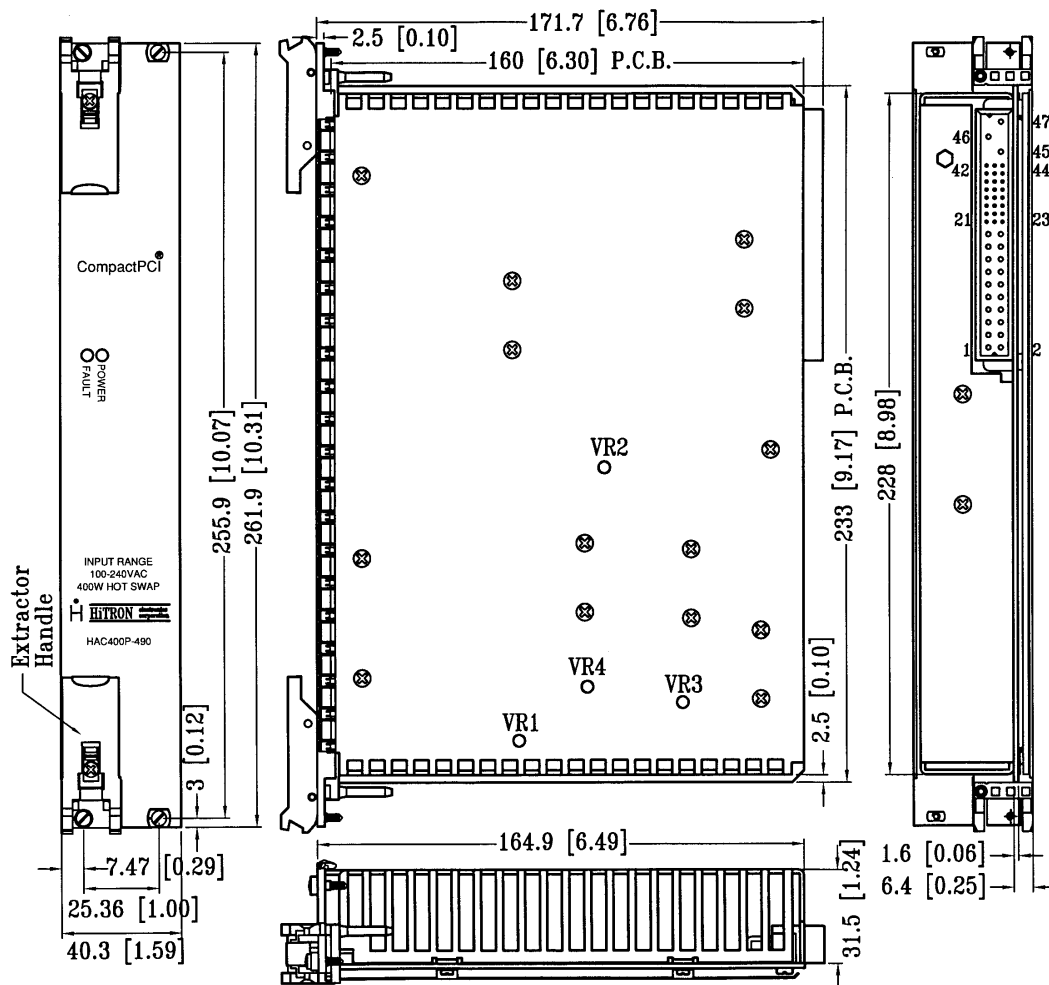
Remark: Peak load less than 60sec. with duty cycle <10%.

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.

Total max. power of VO1 and VO2 should be less than 300W.

## MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 1.7kg (3.75 lb.)



## INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

ASSIGNMENT	AC INPUT			QUAD OUTPUT												STATUS/CONTROL					
	L	N	G	VO1	S+	S-	Adj.	C.S.	VO2	S+	Adj.	C.S.	VO3	S+	C.S.	VO4	DC COM	EN#	DEG#	INH#	FAL#
CNTR & PIN #	47	46	45	1,2,3,4	30	34	29	35	13,14,15,16,17,18	33	32	41	20	36	44	21	5,6,7,8,9,10,11,12,19,24	27	38	39	42

Mating connector: PCIH47F400A1.