

# HiTRON

## UNIVERSAL AC INPUT HARMONIC CORRECTION AC-DC HOT-SWAP CompactPCI QUAD OUTPUT 500 WATTS ACTIVE CURRENT SHARING SWITCHING POWER SUPPLIES HAC500P SERIES



### FEATURES:

- 500W 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 A
- 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:**  $\leq 30.6A(\text{rms}) @ 230\text{Vac}$ .  
**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 A.  
**Hold-up Time:** 22.4ms @ 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. 500W continuous.  
**Output Connector:** Positronic 47-pin PCIH47M400A1.  
**Line Regulation:** Typ. 0.1%.  
**Load Regulation:** VO1 & VO2 typ.  $\pm 0.5\%$ .  
 VO3 typ.  $\pm 1.0\%$ , VO4 typ.  $\pm 3.0\%$ .  
**Noise & Ripple:** Typ. 1% peak-peak or 50mV, whichever is greater.  
**OVP:** Built-in at all outputs.  
**Adjustability:** Available at VO1,2,3 & 4.  
**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. 77-80 %.  
**Switching Frequency:** 120K Hz.  
**Circuit Topology:** Forward circuit.  
**Transient Response:** Peak transient less than 250mV and returns to within 1% less than 0.5ms for 50% 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:** -30 to +50 °C at full load with specified air flow. Derates linearly to 50% at +70 °C.  
**Storage Temperature:** -30 to +85 °C.  
**Temperature Coefficient:** Typ.  $\pm 0.04\% / ^\circ\text{C}$ .  
**Cooling:** At least 800LFM moving air is required to achieve full rating power 500W in a confined area.  
**Power Density:** 5.0 Watts/ Cubic Inch.

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



# 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. |
| HAC500P-490 | 4A              | 50A  | +5V   | 60A  | 0A               | 30A  | +3.3V | 60A  | 0A               | 10A  | +12V  | 14A  | 15A | 0A             | 3A   | -12V  | 4A   | 5A  |

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

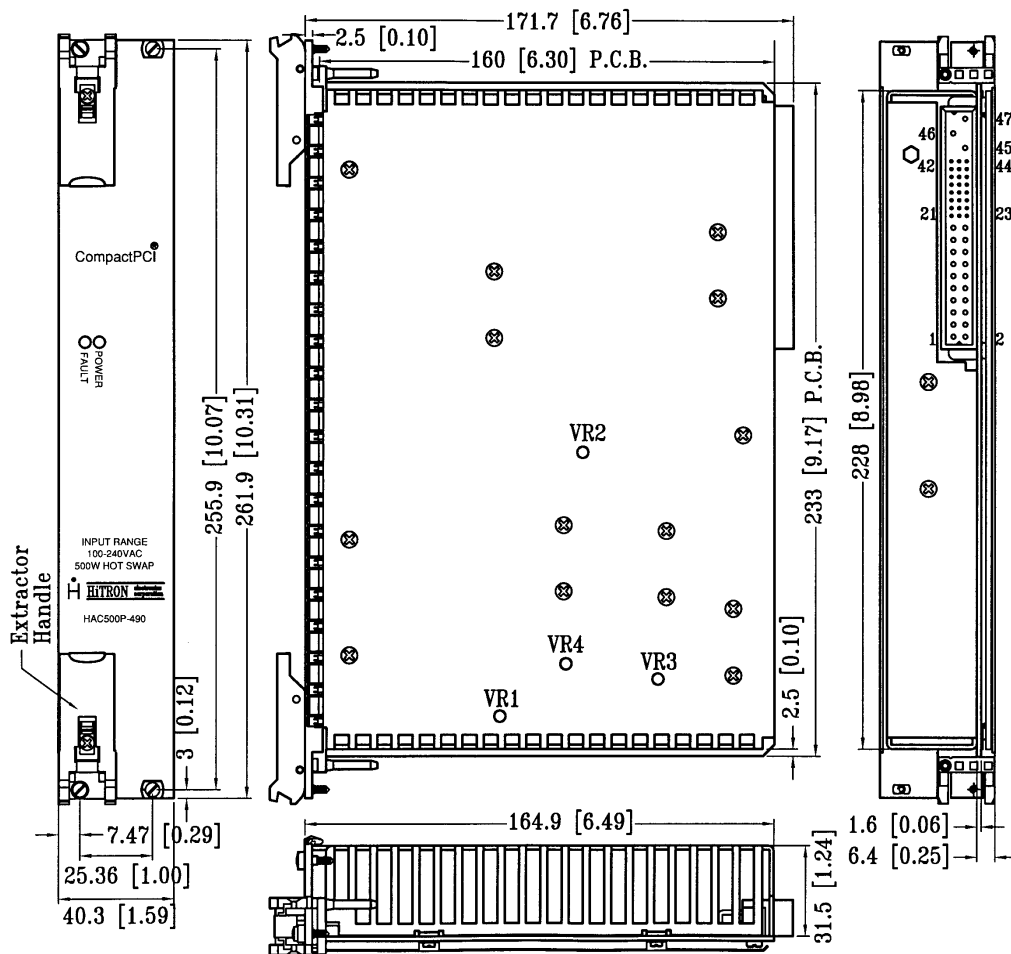
"⊙" Installed with Or-ing diode. "▲" Magnetic Amplifier. "●" Installed with Post-regulator.

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.

## 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.