

# HiTRON

## UNIVERSAL AC INPUT HARMONIC CORRECTION AC-DC HOT-SWAP CompactPCI QUAD OUTPUT 300 WATTS RAILWAY APPLICATION SHARING SWITCHING POWER SUPPLY HARC255P-490(E)



### FEATURES:

- 300W 3U X 8HP CPCI PACKAGE
- WIDE OPERATING TEMP. -40°C TO +85 °C
- DESIGN TO MEET EN50155
- SUITABLE FOR CPCI Express APPLICATION
- MEET IEC 61000-3-2 HARMONIC CORRECTION
- N+1 REDUNDANCY/HOT-SWAPPABLE
- ACTIVE CURRENT SHARING
- EMI MEET EN 55022 / FCC CLASS A
- USING 125°C LONG LIFE SOLID CAPACITORS

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typ. 90-264Vac.  
**PFC:** Meet Harmonic Correction IEC 61000-3-2.  
**Input Connector:** Positronic 47-pin PCIH47M400A1.  
**Input Frequency:** 47-63Hz.  
**Inrush Current:** 14.8Arms at 230Vac.  
**Input Current:** 3.03A at 115Vac/1.49A at 230Vac.  
**Soft Star:** Installed.  
**Under-Voltage Protection (UVP):** Installed.  
**Input Reverse Voltage Protection:** Installed.  
**Dielectric Withstand:** Meet IEC 60950-1 regulation.  
**I/P-O/P:** 3000Vac, I/P-GND:1500Vac, O/P-GND:1000Vac.  
**EMI:** Meet EN 55022 / FCC Class A.  
**Hold-up Time:** 18.6mS at 115Vac & 230Vac for 300W  
 37.5mS at 115Vac for 120W.  
**Earth Leakage Current:** 1.33mA at 230Vac.  
**Radiated Susceptibility:** EN61000-4-3 Level X (20V/m).  
**Surge:** Meet EN6100-4-5 Level 3, L-L 2KV, L-G 2KV.  
**Conducted Disturbance:** EN61000-4-6 Level X (20V/m).  
**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.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typ. 120W(Fanless) and 300W(Forced air)  
**Output Connector:** Positronic 47-pin PCIH47M400A1.  
**Line Regulation:** Typ. 0.2%.  
**Load Regulation:** Typ. ±1% for V1 & V2, Typ.±2% for V3,  
 Typ. ±5% for V4.  
**Noise & Ripple:** Typ. 1% peak to 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/VO2.[ADJ #]  
**Remote Sensing:** Available at VO1,VO2 & VO3.  
**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.  
**Power OK Signal:** Available for all output.  
**Over Current Protection (OCP):** Installed at each rail.  
**Overload Protection (OLP):** Fully protected against output  
 overload or short circuit. Typical 120% max. load.  
 Consult the factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 88% at 230Vac (300W).  
**Switching Frequency:** 65/100/400/570KHz.  
**Circuit Topology:** Resonant Half-bridge circuit.  
**Transient Response:** Peak transient less than 250mV and  
 recovers within 2mS after 25% load-change.  
**Safety Standard:** IEC 60950-1 Class I.  
**Vibration:** Six degree-of-freedom random,10Hz-150Hz, 10G.

**Operating Temperature:** -40 °C to +85 °C with de-rating.  
 (Please refer to de-rating chart and note).  
**Storage Temperature:** -45°C to +90 °C.  
**Cooling:** 400-600LFM moving air is required at 300W.  
 Convection air (Fanless) is achieved at 120W.  
**Power Density:** 2.2-5.5Watts/ Cubic Inch.  
**CE Standard:** Meet Level 3 Criteria A.  
**Conformal Coating.**

NOTE: (1)All measurement are at nominal input, full load and +25°C unless otherwise specifications.

(2)Due to requests in market and advances in technology, specifications subject to change without notification.

(3)A warm-up time 10 minutes is required after cold start at temperature from -40 °C to +0°C.

(4)Tantalum capacitors connected to system is suggested for bettering Ripple & Noise against operating temperature from -40°C to +0°C.

(5)125 Degree C OS-Con long life Solid capacitors are installed in the secondary side.

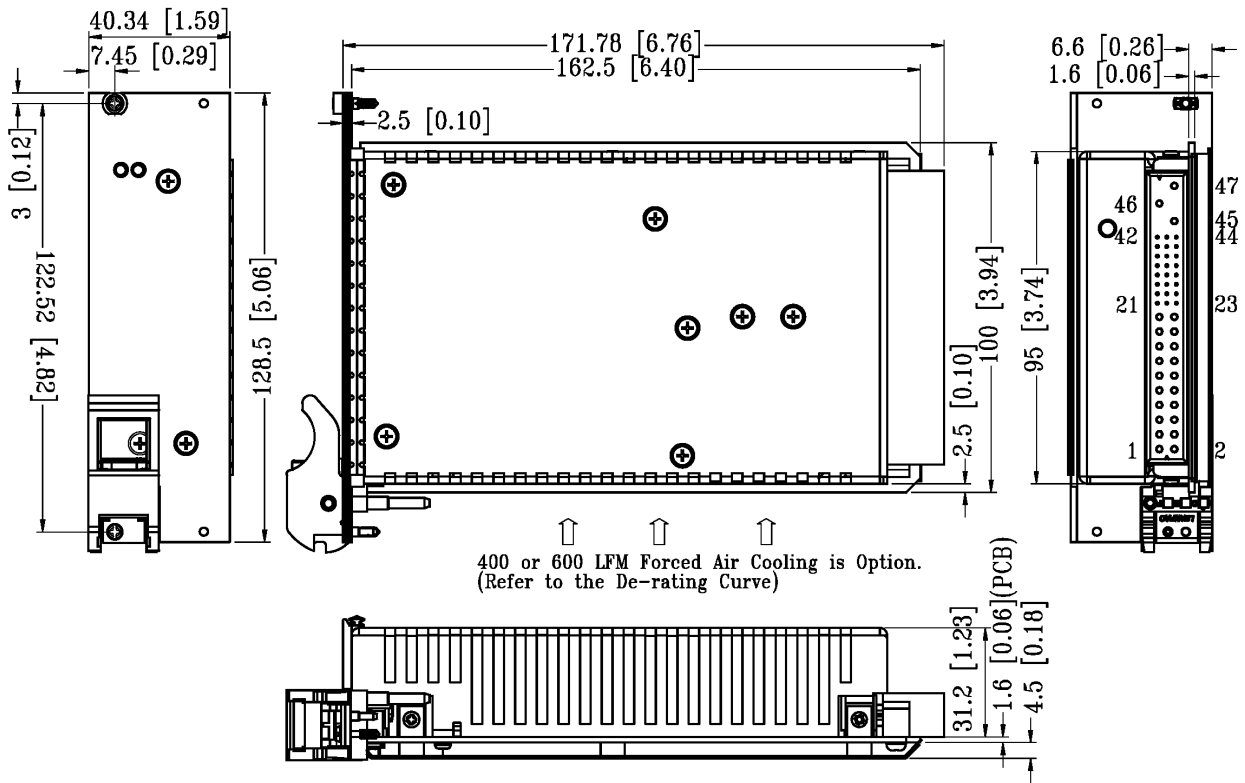
## OUTPUT VOLTAGE / CURRENT RATINGS CHART

### QUAD OUTPUT

MODEL NO.	O/P Volt.	Volt.	Min.	Typ.	Max.	Peak
<b>HARC255P-490(E)</b>	VO1	+5Vdc	0A/0.5A	10A/20A	33A	35A
	VO2	+3.3Vdc	0A	5A/20A	33A	35A
	VO3	+12Vdc	0A	4A/11A	20A	23A
	VO4	-12Vdc	0A	0.5A/1A	2A	3A

**Remark:** 1.Max. o/p power: 120W for convection cooling, 300W for 400 or 600LFM Forced air cooling.  
 2.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.  
 3.Total combined current of VO1 & VO2 should be  $\leq 50A$ .  
 4.Min. load is only required when PSUs do run in parallel.

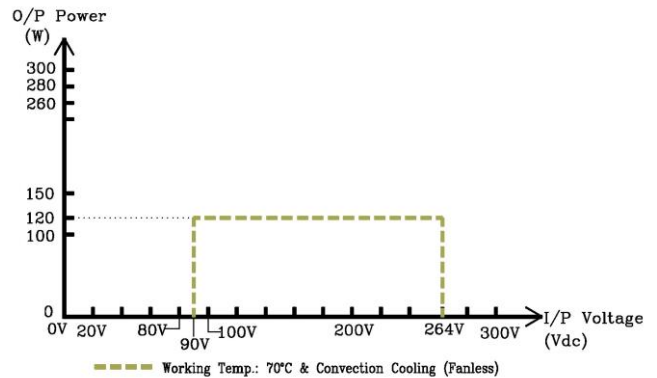
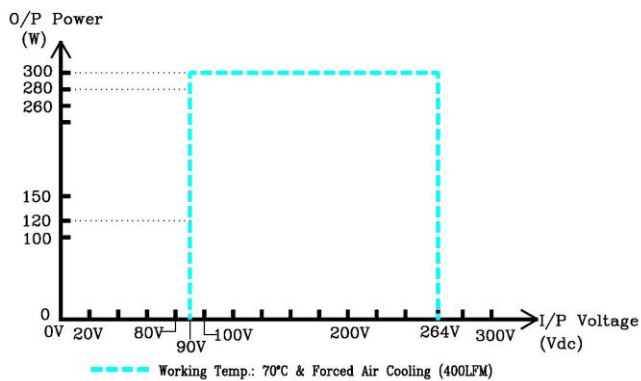
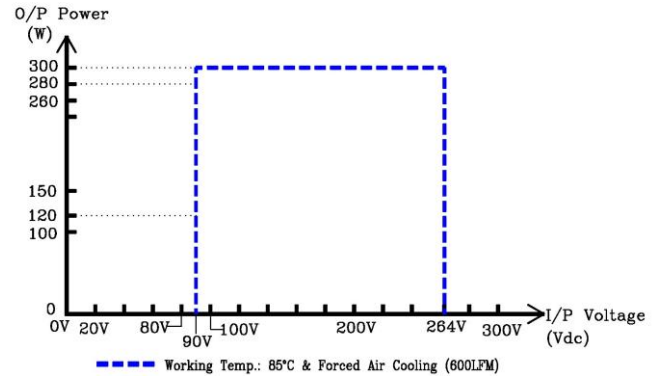
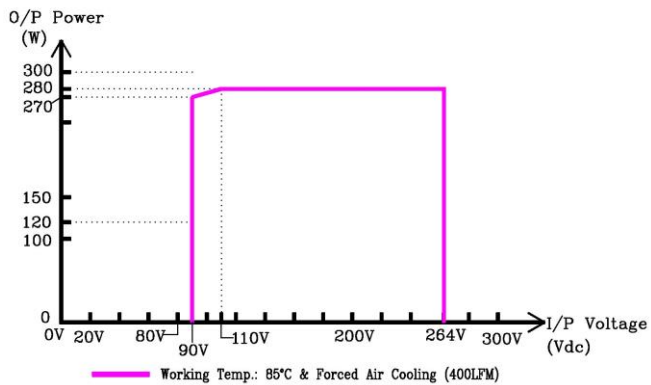
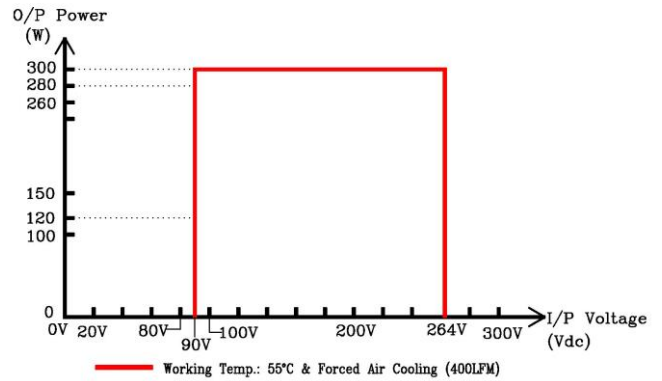
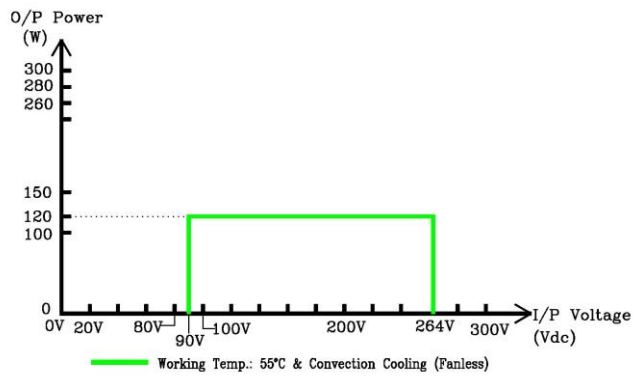
### MECHANICAL DIMENSIONS: MM [INCHES]



### IMMUNITY TO ENVIRONMENTAL CONDITIONS

Condition \ Standard	EN5015512.2.1 & 12.2.6	EN5015512.2.4
I/P: 90-264Vac Typ. 115Vac O/P: 120W(Fanless)	Pass Class S2 & Class C2 (Dip only)	Pass Class TX & Column 1 Pass Class TX & Column 2 Pass Class TX & Column 3
I/P: 90-264Vac Typ. 115Vac O/P: 300W	Pass Class S2 (Dip only)	Pass Class TX & Column 1
I/P: 90-264Vac Typ. 115Vac O/P: 300W	Pass Class S2 (Dip only)	Pass Class TX & Column 1 Pass Class TX & Column 2
I/P: 90-264Vac Typ. 115Vac O/P: 300W	Pass Class S2 (Dip only)	Pass Class TX & Column 3
I/P: 90-264Vac Typ. 115Vac O/P: 280W	Pass Class S2 (Dip only)	Pass Class TX & Column 4

## DERATING CHART



## INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

Assignment	L	N	GND	V1	V1 S+	V1 Adj.	V1 C.S.	V2		V2 S+	V2 Adj.
Pin #	47	46	45	1,2,3,4	30	29	35	13,14,15,16,17,18		33	32
Assignment	V2 C.S.	V1/V2 S-	V3	V3 S+	V3 C.S.	V4	DC COM	EN#	DEG#	INH#	FAL#
Pin #	41	34	20	36	44	21	5,6,7,8,9,10,11 12,19,22,24	27	38	39	42