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
- N+1 Redundancy/Hot-Swappable
- Active Current Sharing
- EMI Meet EN55022 / FCC Class A
- Using 125°C Long Life Solid Capacitors

CE

Specification

Input

Input Voltage	Typical 90-264VAC
Input Frequency	47-63Hz
Input Current	3.03A at 115VAC 1.49A at 230VAC
Soft Star	Installed
Inrush Current	14.8Arms at 230VAC
Input Connector	Positronic 47-pin PCIH47M400A1
Earth Leakage Current	1.33mA at 230VAC

Output

Output Connector	Positronic 47-pin PCIH47M400A1
Line Regulation	Typical 0.2%
Load Regulation	V1/V2 typical ±1%, V3 typical ±2%, V4 typical ±5%
Noise & Ripple	Typical 1% peak to peak
Remote Sense	Available at V1,V2 & V3
Adjustability	Available at V1,V2 & V3
Current Sharing	Available at V1, V2 & V3
Output Trim	Available at V1/V2[ADJ #]

Protection

Over Voltage	Built-in at all outputs
Over Current	Installed at each rail
Over Load	Typical 120% maximum load fully protected against output
Hold-up Time (300W)	18.6mS at 115VAC/230VAC
(120W)	37.5mS at 115VAC
Over Temperature	Installed NTC and thermostat for thermal sensor at [DEG#] pin
Under-Voltage	Installed
Input Reverse Voltage	Installed
Conformal Coating	Available

General

Efficiency (300W)	Typical 88% at 230VAC
Switching Frequency	65/100/400/570KHz
Dielectric Withstand	I/P-O/P:3000VAC, I/P-G:1500VAC O/P-G:1000VAC
Circuit Topology	Resonant Half-bridge circuit
Transient Response	Peak transient < 250mV & recovers within 2mS after 25% load-change
Remote ON/OFF	Available at [INH#] & [EN#] pins
Power Fail Signal	Available at [FAL#] pin
Power OK Signal	Available for all output
Status LED	<Green> means valid input voltage <Amber> means a critical fault
N+1 Redundancy	internal OR-ing diodes
Hot-Swappable	Available
Power Density	2.2-5.5Watts/ Cubic Inch

Environmental

Operating Temperature	-40 °C to +85 °C with de-rating
Storage Temperature	-45°C to +90 °C
Cooling	300W: 400-600LFM moving air 120W: Convection air (Fanless)

Safety/EMC

Emissions (conducted)	EN55022 / FCC Class A
Harmonic Current	IEC61000-3-2
Safety Standard	IEC 60950-1 Class I
CE Standard	Meet Level 3 Criteria A
Vibration	Six degree-of-freedom random 10Hz-150Hz, 10G
Radiated Susceptibility	EN61000-4-3 Level X (20V/m)
Surge	EN6100-4-5 Level 3, L-L 2KV, L-G 2KV
Conducted Disturbance	EN61000-4-6 Level X (20V/m)

Notes:

(1) All measurement are at nominal input, full load and +25℃ 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°C OS-CON Long-life Solid capacitors are installed in secondary circuits.

Version B edited on Nov. 7, 2016

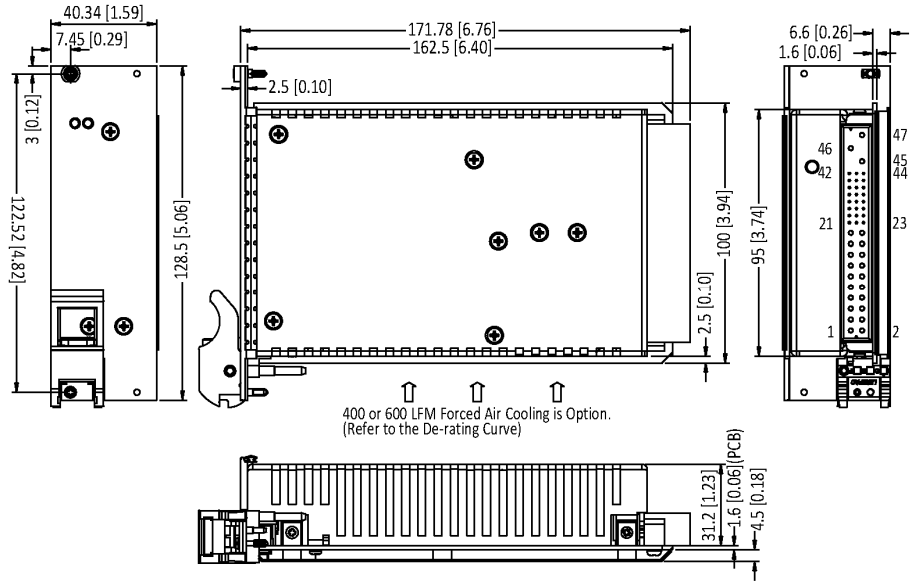
Output voltage & current rating chart

Quad Output

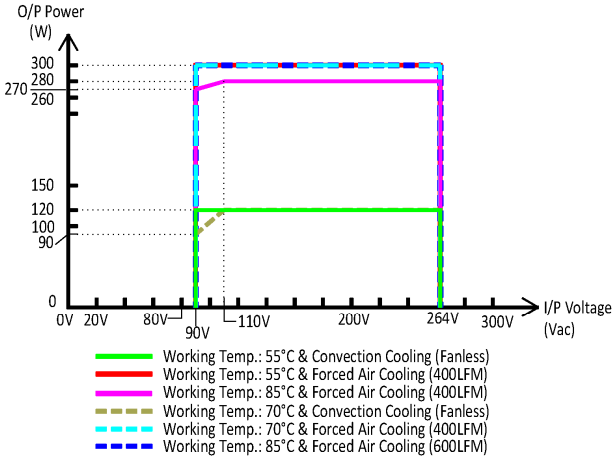
Model No.	Volt.	Volt.	Min. (Redundant)	Min. (Single Unit)	Typ. (Convection-cooled)	Typ. (Forced-cooled)	Max. (Convection-cooled)	Max. (Forced-cooled)	Peak
HARC255P-490(E)	V1	+5VDC	0.5A	0A	10A	20A	10A	33A	35A
	V2	+3.3VDC	0A	0A	5A	20A	10A	33A	35A
	V3	+12VDC	0A	0A	4A	11A	10A	20A	23A
	V4	-12VDC	0A	0A	0.5A	1A	2A	2A	3A

Notes: (1) Maximum o/p power: 110-120W for convection cooling, 150-300W for 400 or 600LFM Forced air cooling.
(2) Maximum load is the continuous operating load of each rail. But the maximum load of each rail can't be drawn from all outputs at the same time.
(3) Total combined current of V1 & V2 should be ≦ 50A.
(4) Minimum load is only required when PSUs do run in parallel.

Mechanical Dimensions (All dimensions are in mm[inch])



Derating Chart



Immunity to environmental conditions

Standard / Condition	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

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**