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Unit F Reme Drive
EX14 1SE

HiTRON

16.6-160VDC INPUT RANGE DC-DC CONVERTER HOT-SWAP CompactPCI QUAD OUTPUT 300 WATTS RAILWAY SWITCHING POWER SUPPLIES HDRC255P-110J-490(E) SERIES

FEATURES:

- **300W 3U X 8HP CPCI PACKAGE**
- **16.6-160VDC 10:1 WIDE INPUT RANGE**
- **DESIGN TO MEET EN50155**
- **SUITABLE FOR CPCI Express APPLICATION**
- **WIDE OPERATING TEMP. -40°C TO +85 °C**
- **N+1 REDUNDANCY/HOT-SWAPPABLE**
- **ACTIVE CURRENT SHARING**
- **USING 125°C LONG LIFE SOLID CAP.**
- **CE MARKING Level 3 COMPLIANCE**
- **FULLY COMPLIANT WITH PICMG**

SPECIFICATION

INPUT SPECIFICATION

Input Voltage: Typ. 16.6-160Vdc, nominal input 110Vdc.
Input Connector: Positronic 47-pin PCIH47M400A1.
Inrush Current: Peak 27A at nominal 110Vdc.
Input Current: F-L/120W:6A at 24Vdc, 1.3A at 110Vdc.
F-L/300W:7.5A at 48Vdc, 3.3A at 110Vdc.
No-Load:0.35A at 24Vdc, 0.45A at 110Vdc.
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.
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.
<Red> means a critical fault.
Thermal Protection (OTP): Installed NTC & 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.-Peak.
OVP: Built-in at all outputs (Latch).
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 device at all outputs for N+1 redundancy operation.
Current Sharing: Active current sharing for V1/2/3 outputs.
Power OK Signal: Available for all outputs.
Over Current Protection (OCP): Installed in 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. 85% at 24Vdc (120W).
Typ. 88% at 48Vdc and 89% at 110Vdc (300W).
Switching Frequency: 120K Hz at nominal I/P 110Vdc.
Circuit Topology: Resonant Forward circuit.
Transient Response: Peak transient less than 300mV and recovers within 3mS for 25% load-change.
Vibration: Six degree-of-freedom random,10Hz-150Hz, 10G.
Safety Standard: IEC 60950-1 Class I.
Operating Temperature: -40 °C to +85 °C with de-rating.
(Please refer to de-rating chart).
Storage Temperature: -45°C to +90 °C.
Cooling: 400-600LFM moving air is required at 150-300W.
Convection air (Fanless) is achieved at 110-120W.
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℃ 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.

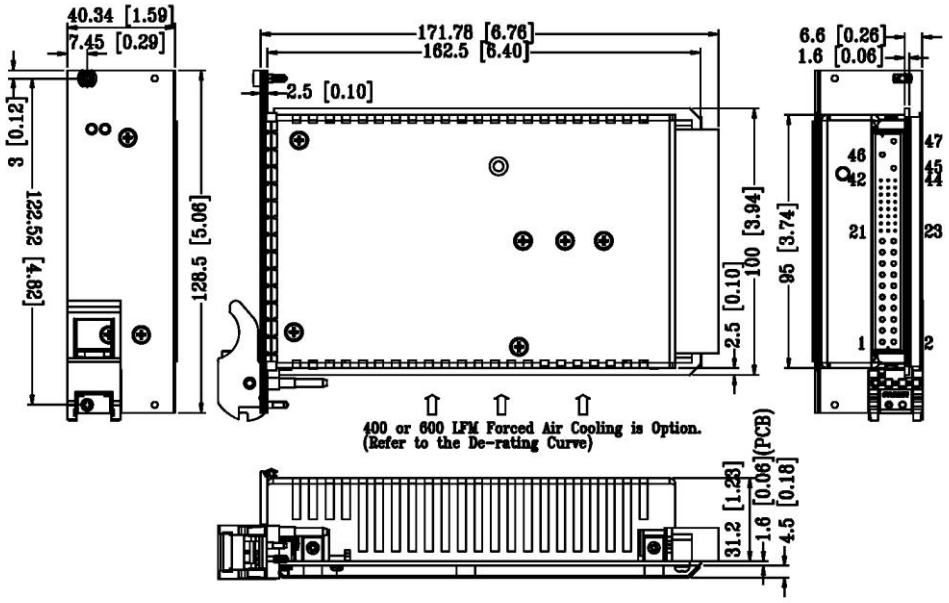
OUTPUT VOLTAGE / CURRENT RATINGS CHART

QUAD OUTPUT

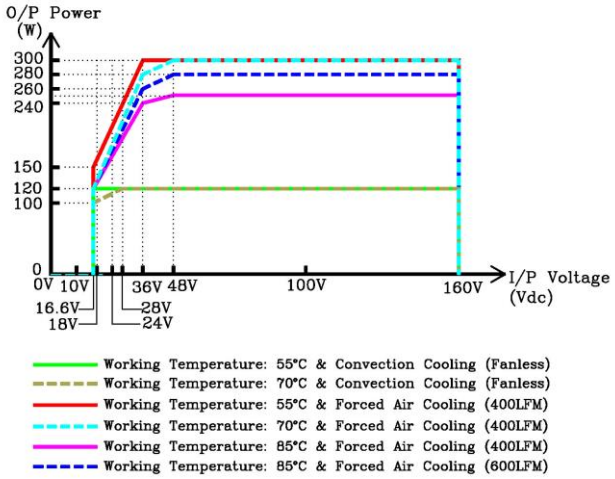
MODEL NO.	O/P Volt.	Volt.	Min.	Typ.	Max.	Peak
HDRC255P-110J-490(E)	VO1	+5Vdc	0A	10A/20A	33A	35A
	VO2	+3.3Vdc	0A	5A/20A	33A	35A
	VO3	+12Vdc	0A	4A/11A	20A	23A
	VO4	-12Vdc	0A	0.5A/1A	2A	3A

Remark: 1.Max. o/p power: 110-120W for convection cooling, 150-300W 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 ≦ 50A.

MECHANICAL DIMENSIONS: MM [INCHES]



DERATING CHART



IMMUNITY TO ENVIRONMENTAL CONDITIONS

Condition \ Standard	EN5015512.2.1 & 12.2.6	EN5015512.2.4
I/P: 24-110Vdc O/P: 120W(Fanless)	Pass Class S2 & Class C2	Pass Class TX & Column 1 Pass Class TX & Column 2 Pass Class TX & Column 3
I/P: 24-110Vdc O/P: 300W	Pass Class S2	Pass Class TX & Column 1
I/P: 24-110Vdc O/P: 150 -300W	Pass Class S2	Pass Class TX & Column 1 Pass Class TX & Column 2
I/P: 24-110Vdc O/P: 120-300W	Pass Class S2	Pass Class TX & Column 3 Pass Class TX & Column 4

INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

Assignment	-Vin	+Vin	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**