

16.6-110VDC Input DC-DC Converter hot-swappable CompactPCI Serial Dual output (with 5V standby) 312 Watts Railway application active current sharing switching power supplies HDRC300S-110J-D120E



Features

- 3U x 8HP package
- 132 Watt (Fanless) & 312 Watt (forced air)
- Wide operating temperature -40°C to +85 °C
- N+1 redundancy, hot-swappable & active current sharing
- 80 Plus efficiency
- CPCI Serial standard compliance
- CE marking level 3 compliance
- EN50155 Class S2 & C2 compliance



Specification

Input

Input Voltage	16.6-160VDC, nominal 110VDC
Input Current	Typical 3.1A at 110VDC
Inrush Current	Peak 27A at nominal 110VDC
Input Connector	FCI 51939-667LF

Output

Output Connector	FCI 51939-667LF
Line Regulation	Typical 1%
Load Regulation	V1 typical $\pm 1\%$, V2 typical $\pm 5\%$
Total Regulation	V1 typical $\pm 2\%$, V2 typical $\pm 6\%$
Noise & Ripple	1% pk to pk or 120mV, whichever is greater

Remote Sense	Available at V1
Adjustability	Available at V1
Current Sharing	Available at V1

Protection

Over Voltage	Built-in at all outputs
Over Current	Installed
Over Load	Typical 160% max. load fully protected against output overload or short circuit
Over Temperature	Installed NTC for thermal sensor at [DEG#] pin

I/P Under & Over Volt.	Installed
I/P reverse voltage	Installed

General

Conformal Coating	Available
Efficiency	Typical 91% at 110VDC(312W)

General

Switching Frequency	100, 65, 80, 400KHz 100KHz at nominal I/P 110VDC
Dielectric Withstand	I/P-O/P: 3000VAC I/P-GND:1500VAC O/P-GND:1000VAC

Remote ON/OFF	Available
Power Fail Signal	Available at [FAL#] pin
DC OK	Available
N+1 Redundancy	Internal OR-ing diodes
Hot-swappable	Available
Power Density	2.4-5.7 Watts/Cubic Inch

Environmental

Operating Temperature	-40°C to +85°C with air flow and derating (note 3 & derating Chart)
Storage Temperature	-45°C to +90°C
Cooling	150-312.5W: 200-600LFM Fan 132.5W: Convection air (Fanless)

Safety/EMC

Emissions (conducted)	CISPR EN55032 Class A
Safety Standard	IEC62368-1 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	EN61000-4-5 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°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°C OS-CON Long-life Solid capacitors are installed in secondary circuits.

Output voltage & current rating chart

Dual Output

Model No.	V1 ★@≡○#					Standby V2 ★○				
	Min.	Typ.	Volt.	Max.	Peak	Min.	Typ.	Volt.	Max.	Peak
HDRC300S-110J-D120E	0A/0.5A	25A/10A	+12V	25A/10A	28A	0A	2.5A	+5V	2.5A	3A

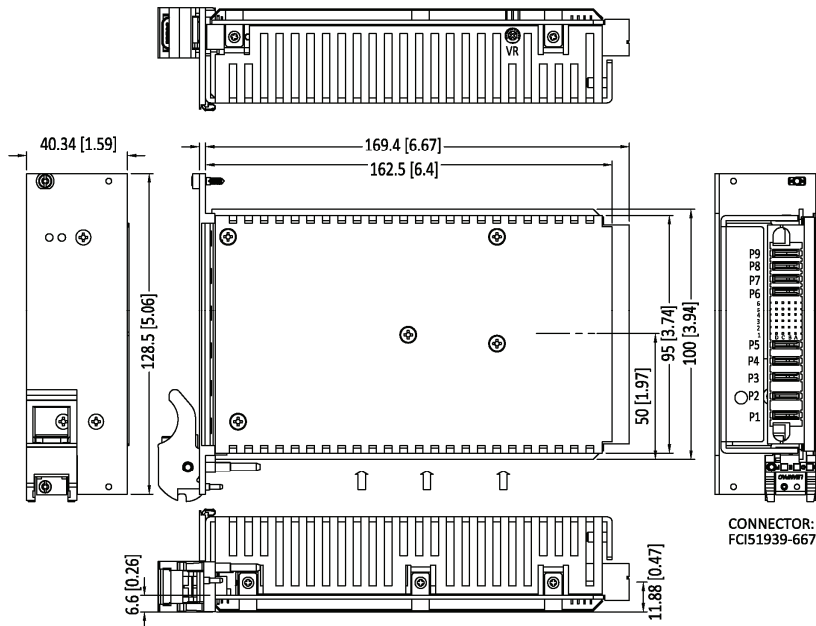
Symbol: "★" OVP built-in. "@" Adjustable. "#" Remote sensing. "≡" Active Load Sharing. "○" Installed with Or-ing diode.

Notes: (1) The minimum load is required when PSUs do run in parallel.

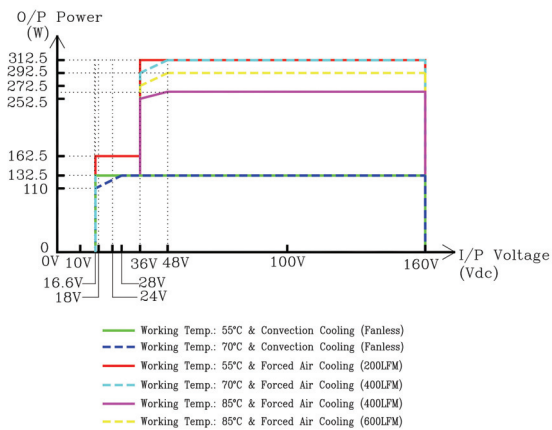
(2) Maximum output power: 132.5W for convection cooling; 150-312.5W for 200, 400 or 600LFM Forced air cooling (Refer to the derating chart).

(3) For non-standard output voltages or modification, please contact sales.

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



Derating Chart



Immunity to environmental conditions

Condition	Standard	EN5015512.2.1 & 12.2.6	EN5015512.2.4
I/P: 24-110VDC O/P: 132.5W(Fanless)		Pass Class S2 & Class C2	Pass Class TX & Column 1 Pass Class TX & Column 2
I/P: 24-110VDC O/P: 150-300W		Pass Class S2	Pass Class TX & Column 1 Pass Class TX & Column 2 Pass Class TX & Column 3
I/P: 24-110VDC O/P: 150-280W		Pass Class S2	Pass Class TX & Column 4

Pin assignment

P1	P2	P3	P4	P5	D1	D2	D3	D4	D5	D6	P6	P7	P8	P9
N/A	N/A	GND	Vin-	Vin +	N/A	FAL	PS_P	COM	DEG	5Vsb	COM	COM	V1	V1
					C1	C2	C3	C4	C5	C6				
					N/A	N/A	COM	A0	ALERT	5Vsb				
					B1	B2	B3	B4	B5	B6				
					N/A	12VCS	PSON	A1	SCL	COM				
					A1	A2	A3	A4	A5	A6				
N/A	-VS	+VS	A2	SDA	EN									

Notes: The mating connector is FCI 51940-350LF.

16.6-110VDC Input DC-DC Converter hot-swapping CompactPCI Serial Dual output (with 5V standby) 312 Watts Railway application active current sharing switching power supplies HDRC300S-110J-D120E(N)



Features

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- Wide operating temperature -40°C to +85°C
- N+1 redundancy, hot-swapping & active current sharing
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Noise & Ripple	1% pk to pk or 120mV, whichever is greater

Remote Sense	Available at V1
Adjustability	Available at V1
Current Sharing	Available at V1

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Over Voltage	Built-in at all outputs
Over Current	Installed
Over Load	Typical 160% max. load fully protected against output overload or short circuit
Over Temperature	Installed NTC for thermal sensor at [DEG#] pin

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General

Conformal Coating	Available
Efficiency	Typical 91% at 110VDC(312W)

General

Switching Frequency	100, 65, 80, 400KHz 100KHz at nominal I/P 110VDC
Dielectric Withstand	I/P-O/P: 3000VAC I/P-GND:1500VAC O/P-GND:1000VAC

Remote ON/OFF	Available
Power Fail Signal	Available at [FAL#] pin
DC OK	Available
N+1 Redundancy	Internal OR-ing diodes
Hot- swapping	Available
Power Density	2.4-5.7 Watts/Cubic Inch

Environmental

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Emissions (conducted)	CISPR EN55032 Class A
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CE Standard	Meet Level 3 Criteria A
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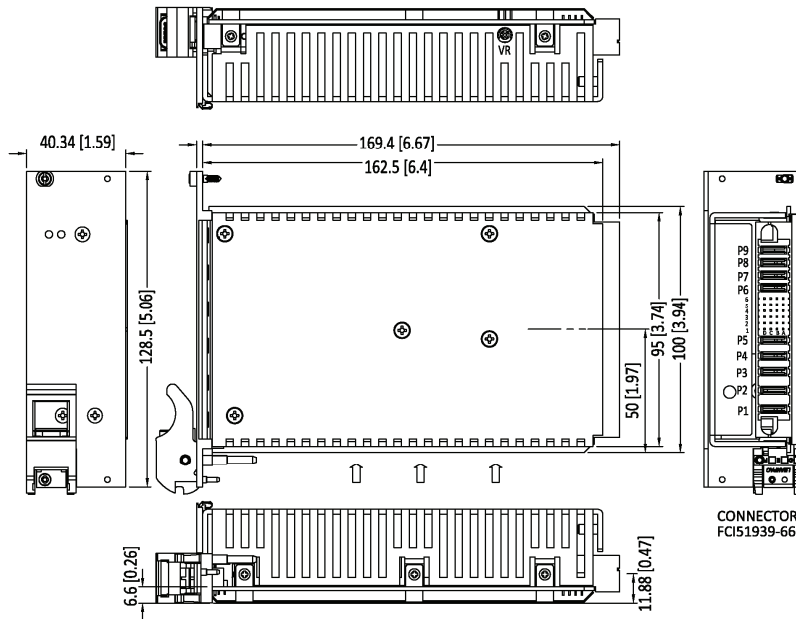
Dual Output

Model No.	V1 ★@≡○#					Standby V2 ★○				
	Min.	Typ.	Volt.	Max.	Peak	Min.	Typ.	Volt.	Max.	Peak
HDRC300S-110J-D120E(N)	0A/0.5A	25A/10	+12V	25A/10	28A	0A	2.5A	+5V	2.5A	3A

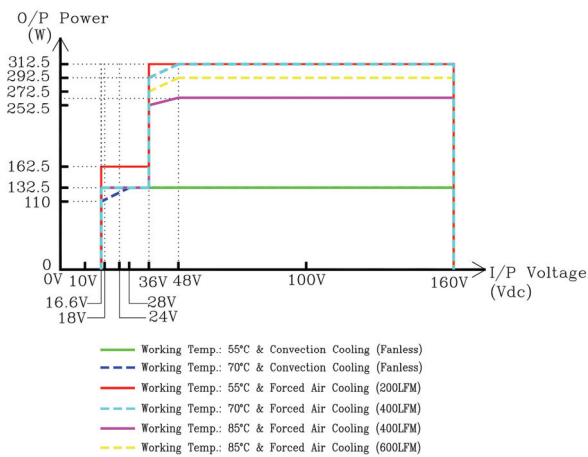
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I/P: 24-110VDC O/P: 132.5W(Fanless)	Pass Class S2 & Class C2	Pass Class TX & Column 1 Pass Class TX & Column 2
I/P: 24-110VDC O/P: 150 - 312W	Pass Class S2	Pass Class TX & Column 1 Pass Class TX & Column 2 Pass Class TX & Column 3
I/P: 24-110VDC O/P: 150-280W	Pass Class S2	Pass Class TX & Column 4

Pin assignment

P1	P2	P3	P4	P5	D1	D2	D3	D4	D5	D6	P6	P7	P8	P9
N/A	N/A	GND	Vin-	Vin +	N/A	FAL	PS_P	COM	DEG	5Vsb	COM	COM	V1	V1
					C1	C2	C3	C4	C5	C6				
					N/A	ALERT	COM	A0	N/A	5Vsb				
					B1	B2	B3	B4	B5	B6				
					N/A	12VCS	PSON	A1	SCL	COM				
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