



FEATURES



- 3Ux8HP package
- 300W power at 0-55°C
- PICMG 2.11 Compliant
- Widerange 90-264VAC Input
- Active power factor correction to EN61000-3-2
- Class B conducted EMI performance
- 47-pin I/O Connector
- 81% efficiency
- Full power with just 250lfm airflow
- Hot-swap capable

DESCRIPTION

The cPCI-A-3U-300C is a high-reliability, 300W, continuous power, 3Ux8HP CompactPCI™ power supply developed for chassis' with airflows as low as 250lfm. The use of 2 converters operating in parallel for the 3.3V and the 5V outputs enables maximum current draw on the two outputs simultaneously. Compliant with the PICMG 2.11 standard.

With a widerange input of 90-264VAC, safety agency approvals to UL60950 and EN60950, EMI compliance to Class B FCC and EN55022 standards, the cPCI-A-3U-300C was designed with globally-deployed systems in mind. Additional features include remote sense compensation, unit enable control (EN#), output inhibit control (INH#), output fault signal (FAL#), and thermal warning signal (DEG#). LEDs are provided for visual indication of input power presence and output fault condition.

SELECTION GUIDE

Model Number	Power	Output Current ¹				 For full details go to www.murata-ps.com/rohs	
		5V	3.3V	12V	-12V		
CPCI-A-3U-300C	300W	30A	40A	5A	0.5A	Yes	Yes

INPUT CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Input Operating Voltage		90		264	Vac
Input Frequency		47		63	Hz
Input Current				5.0	A _{rms}
Power Factor			0.98	0.99	
Inrush Current	230Vac			50	A _{pk}

OUTPUT CHARACTERISTICS

Output	Nominal Voltage	Output Current		Load Regulation ¹	
		Min	Max		
V1 ²	+5.0Vdc	0A	30A	±1%	
V2 ²	+3.3Vdc	0A	40A	±1%	
V3 ²	+12Vdc	0A	5A	±4%	
V4 ²	-12Vdc	0A	0.5A	±4%	
Parameter	Conditions	Min	Typ	Max	Units
Line Regulation	All outputs		0.5		%
PARD (V1 & V2) ⁵	20MHz bandwidth			90	mV _{p-p}
PARD (V3 & V4) ⁵	20MHz bandwidth			120	mV _{p-p}
Hold-up Time	230VAC, full load		14		msec
Turn-on Delay				2	sec
Rise Time	10% to 90% of full value		30		msec
Transient Response	ΔV, 50% load step			±5	%V _{nom}
	Settling time			500	μsec
Over-Voltage and Short Circuit Protection ⁶	V1, V2, & V3: Latching	110		130	%V _{nom}
Remote Sense Compensation ³	V1, V2		300		mV
Current Share Tolerance ⁴	V1, V2			±10	%
Isolation	Pri-Sec	3			kVac
	Pri-Chassis	1.5			kVac
	Sec-Chassis	100			Vdc

- Notes:
1. Total power limited to 300W.
 2. Maximum combined power from V1 & V3 not to exceed 185W. Maximum combined power for V2 & V4 not to exceed 140W.
 3. Maximum voltage compensation for cable losses.
 4. Tolerance applicable up to 6 parallel units. Single wire current share on V1 & V2 for 50% to 100% load.
 5. Measured across 10μF tantalum load capacitor paralleled with 0.1μF ceramic capacitor.
 6. Automatic recovery upon removal of overload condition.

GENERAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Efficiency	Full load, 240Vac		81		%
Switching Frequency	Main Converter		68		kHz
MTBF	Calculated per Bellcore standard B332 Gb 30°C	300			khrs
Weight	Unpackaged		840		g

PROTECTION

Parameter	Conditions/Response	Inception			Units
		Min	Typ	Max	
Inrush Current Limit	230VAC			50	A _{rms}
Input Protection	Internal line fuse			6.3	A _{rms}
Over-voltage Protection	V1, V2, & V3 with latched shutdown	110		130	%V _{nom}
Parameter	Conditions/Response				
Output Overload Protection	Outputs are individually protected against overloads and indefinite short circuit with automatic recovery upon removal of the fault condition.				
Hot-Swap Capability	Protected by internal ORing diodes				
Output Fault Isolation	Output isolation devices are present in all outputs to isolate faults within a failed power supply.				
Thermal Shutdown	Automatic recovery upon restoration to operational temperatures				

STATUS & CONTROL SIGNALS & INDICATORS

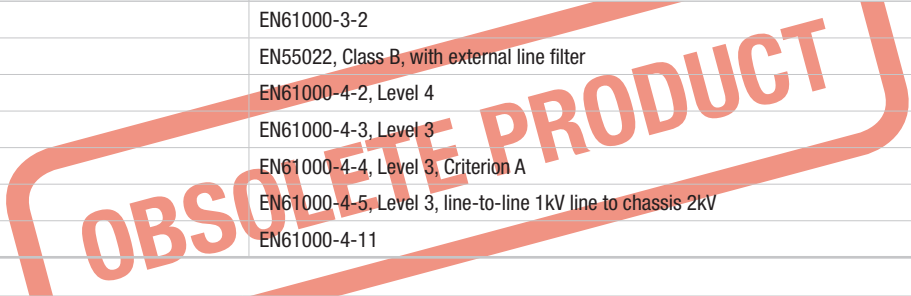
Name	Description
Enable (EN#)	Short pin on connector will enable the outputs when the mating pin is grounded. Supply will not power up until this pin is engaged to its mate in the backplane. Unit output will be inhibited as pin is disengaged from the mating connector.
Output Inhibit (INH#)	Secondary referenced; active low, TTL compatible. Logic "0" or short circuit to output return inhibits all outputs.
Output Fault (FAL#)	Secondary referenced; TTL compatible. Logic "0" denotes that one of the output voltages has fallen below the lower regulation limit.
Remote Sense (RS+, RS-)	Connection of the sense leads across the load at the desired point of regulation will compensate for voltage distribution drops up to 200mV between the output terminals of the power supply and the point of connection.
Thermal Warning (DEG#)	Secondary referenced; TTL compatible. Logic "0" denotes a thermal warning; nominally, 10°C prior to thermal shutdown.
Power Present Indicator LED	A single bi-color Indicator LED
	Green LED - indicates output in range
	Red LED - indicates one or more outputs below 10% of specified range.

ENVIRONMENTAL CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max	Units
Ambient Operating Temperature	Full load with 250LFM forced air and derating linearly above 55°C to 70°C, by 2.5% per °C	-5		55	°C
Ambient Storage Temperature		-40		85	°C
Operating Humidity	Non-condensing			95	%
Storage Humidity	Non-condensing			95	%
Altitude	Operating			6000	ft
	Storage			40000	ft

ELECTROMAGNETIC COMPATIBILITY (EMC)

Characteristic	Compliance
Input Current Harmonics	EN61000-3-2
Conducted Emissions	EN55022, Class B, with external line filter
Electrostatic Discharge (ESD)	EN61000-4-2, Level 4
Radiated Immunity	EN61000-4-3, Level 3
Conducted Immunity	EN61000-4-4, Level 3, Criterion A
Line Voltage Surge	EN61000-4-5, Level 3, line-to-line 1kV line to chassis 2kV
Line Voltage Interruptions	EN61000-4-11



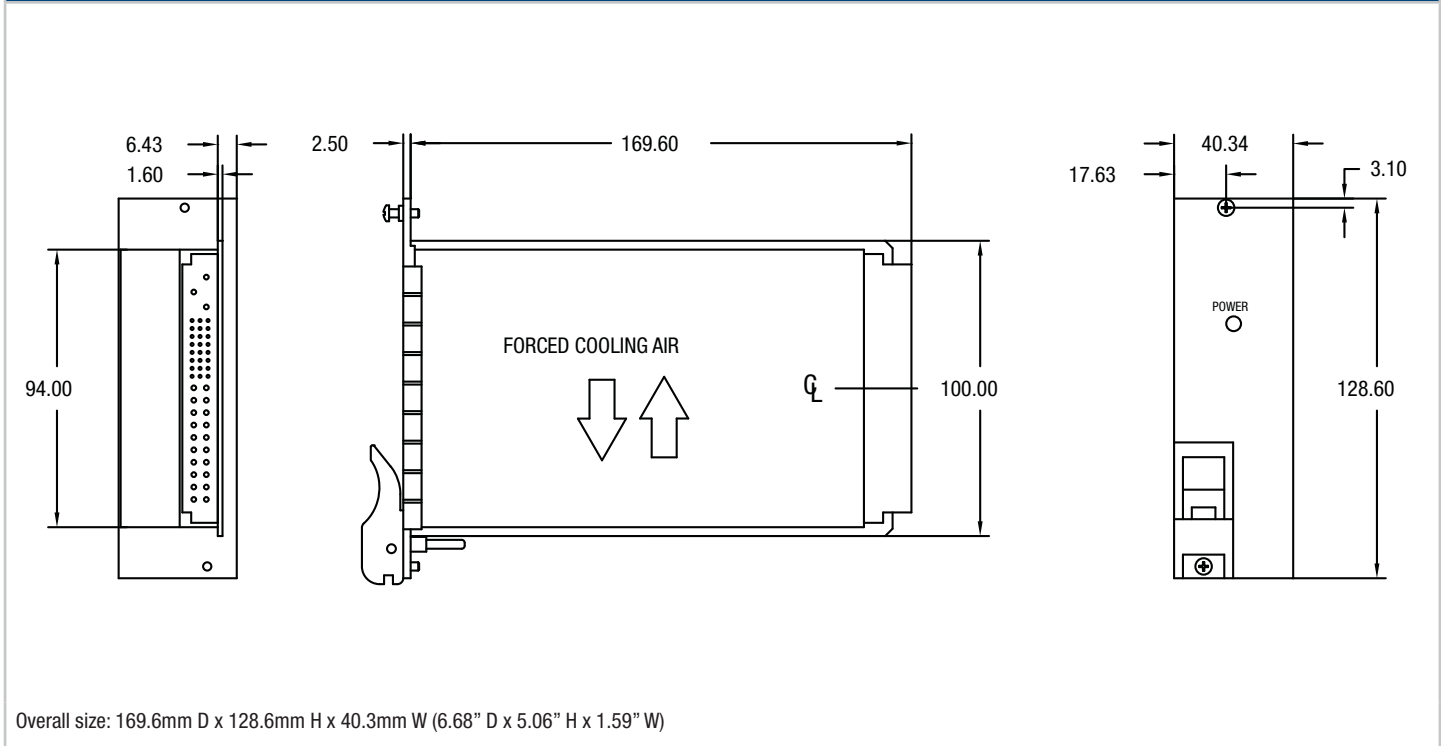
CERTIFICATIONS

Agency/Characteristic PENDING	Standard
UL	UL60950-1
CSA	CSA C22.2-234, Level 3 (per cUL)
CE	EN-60950, Class 1, SELV CE-Mark
RoHS	EN Directive 2002/95/EC; self-certified

SAFETY AGENCY RATINGS


Input Voltage	100-240Vac
Input Current	5A

MECHANICAL DIMENSIONS



CONNECTOR			
Pin ¹	Staging ²	Signal Name	Description
1-4	M	V1	V1 Output
5-12	M	RTN	V1 and V2 Return
13-18	M	V2	V2 Output
19	M	RTN	V3 Return
20	M	V3	V3 Output
21	M	V4	V4 Output
22	M	RTN	Signal Return
23	M	RESERVED	Reserved
24	M	RTN	V4 Return
25	M	GA0	Geographic Address Bit 0
26	M	RESERVED	Reserved
27	S	EN#	Enable
28	M	GA1	Geographic Address Bit 1
29 ³	M	V1ADJ	V1 Adjust
30	M	V1 SENSE	V1 Remote Sense
31	M	GA2	Geographic Address Bit 2
32 ³	M	V2ADJ	V2 Adjust
33	M	V2 SENSE	V2 Remote Sense
34	M	S RTN	Sense Return
35	M	V1 SHARE	V1 Current Share
36	M	V3 SENSE	V3 Remote Sense
37 ³	M	IPMB SCL	IPMB Serial Clock Line
38	M	DEG#	Degrade Signal
39	M	INH#	Inhibit
40 ³	M	IPMB SDA	IPMB Serial Data Line
41	M	V2 SHARE	V2 Current Share
42	M	FAL#	Fail Signal
43 ³	M	IPMB PWR	IPMB Power Input
44 ³	M	V3 SHARE	V3 Current Share
45	L	CGND	Chassis Grnd (Safety Grnd)
46	M	ACN/+DC IN	AC Input Neutral/+DC Input
47	M	ACL/-DC IN	AC Input Line/-DC Input

RoHS COMPLIANT INFORMATION



This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. The pin termination finish on this product series is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The series is backward compatible with Sn/Pb soldering systems.

For further information, please visit www.murata-ps.com/rohs

OBSOLETE PRODUCT

- Notes:
1. Pin numbers correspond to the female backpane connector.
 2. "L" denotes long pin length (first mate, last break)
 "M" denotes medium pin length
 "S" denotes short pin length (last mate, first break)
 3. This function not used in the cPCI-A-3U-300C Series.



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