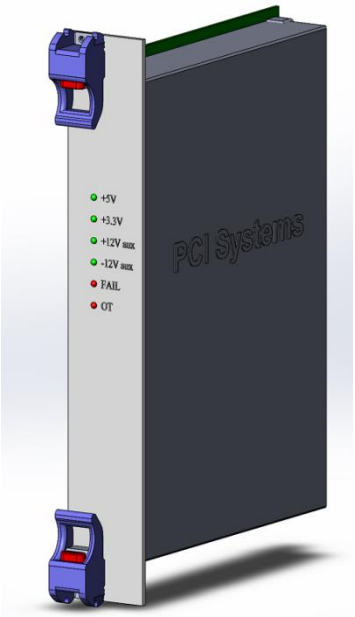
Datasheet

CompactPCI POWER SUPPLY



Key Features:

- 85-264VAC Continuous Input Voltage
- 3000V Isolation Between Input /Output
- Active Input EMI Filtering
- Transient forward looking/cut-off technology
- 4 Voltage output Rails
- 700W Maximum Continuous Power
- 85% Typical Efficiency
- -10°C to 75°C Operating Temperature
- CompactPCI 8HP 6U Form Factor
- Active PFC input stage
- 4 fans inside for low thermal deration
- SMART internal managing functions

CompactPCI 6U ISOLATED 700W 85VAC to 265VAC POWER SUPPLY

This 6U power supply works with **85VAC to 265VAC input** and can be used for input frequencies from **47Hz to 63Hz** and isolates the input voltage ground from the output voltage ground. The power supply is **conduction cooled**, uses **poly-phase** technology on all voltage rails and can provide up to **700 watts.** It is suitable for use in **mission critical rugged applications**.

Overview	
P/N	**PCI_800.302**
Hold Up time	**25ms**
CompactPCI Compliant	**cPCI**
Size	**6U**
Temp. Range	**-10 +75 C**
Input (AC or DC)	**AC**
Input Range (AC)	**85-265**
Active EMI Filtering	**YES**
Power (W, max.)	**700**
Efficiency (%, typ.)	**85**
# of outputs	**4**

OUTPUTS (Total output not to exceed 700W)	
VS1,V@A	**+5@100A**
VS2, V@A	**+3.3V@100A**
AUX, V@A	**+12@3A**
AUX, V@A	**-12@3A**

FEATURES	
Over-current Protection	**YES**
Over-voltage Protection	**YES**
Over-temperature Protection	**YES**
Current Sharing	**no**
Remote Sense	**YES**
Standard Control	**YES, cPCI**
Extended Control	**YES, PCI Systems**

COMPLIANCE	
cPCI	**YES**
MIL-STD-704 (B-F)	**YES**
MIL-STD-461	**YES**
MIL-STD-810G	**YES**
* ESD Protection	**YES**
* Shock	**YES**
* Vibration	**YES**
* Rapid Decompression	**YES**
* Corrosion Resistance	**YES**
* Fungus Resistance	**YES**
* Altitude	**YES**
* Humidity	**YES**

INPUT CHARACTERISTICS					
Parameter	*Min.*	*Typ.*	*Max.*	*Units*	*Notes*
Absolute Maximum Ratings					
Input Voltage					
- *Non-Operating*			**360**	Vrms	
- *Operating*			**264**	Vrms	Continuous
- *Operating Transient Protection*			**280**	Vrms	100ms transient
Isolation Voltage			**3000**	V	
Operating Temperature	**-40**		**85**	C	
Storage Temperature	**-40**		**105**	C	
Electrical Characteristics					
Input Voltage					
- *Continuous*	**85**		**264**	Vrms	
- *Transient*	**85**		**280**	Vrms	Transient for 100 ms
Under-Voltage Lockout					
- Turn-On Input Voltage Threshold		**80**		Vrms	

INPUT VOLTAGE SPIKES SUPPRESSION (Vin Centered)	
+/- 450V, 100 us	**MIL-STD-1275D**
+/- 490V, 10 us	**MIL-STD-461C (CS06); DEF-STAN 61-5**
+/- 450V, 5 us	**MIL-STD-461C (CS06)**
+/- 600V, 10 us	**RTCA/DO-160E**

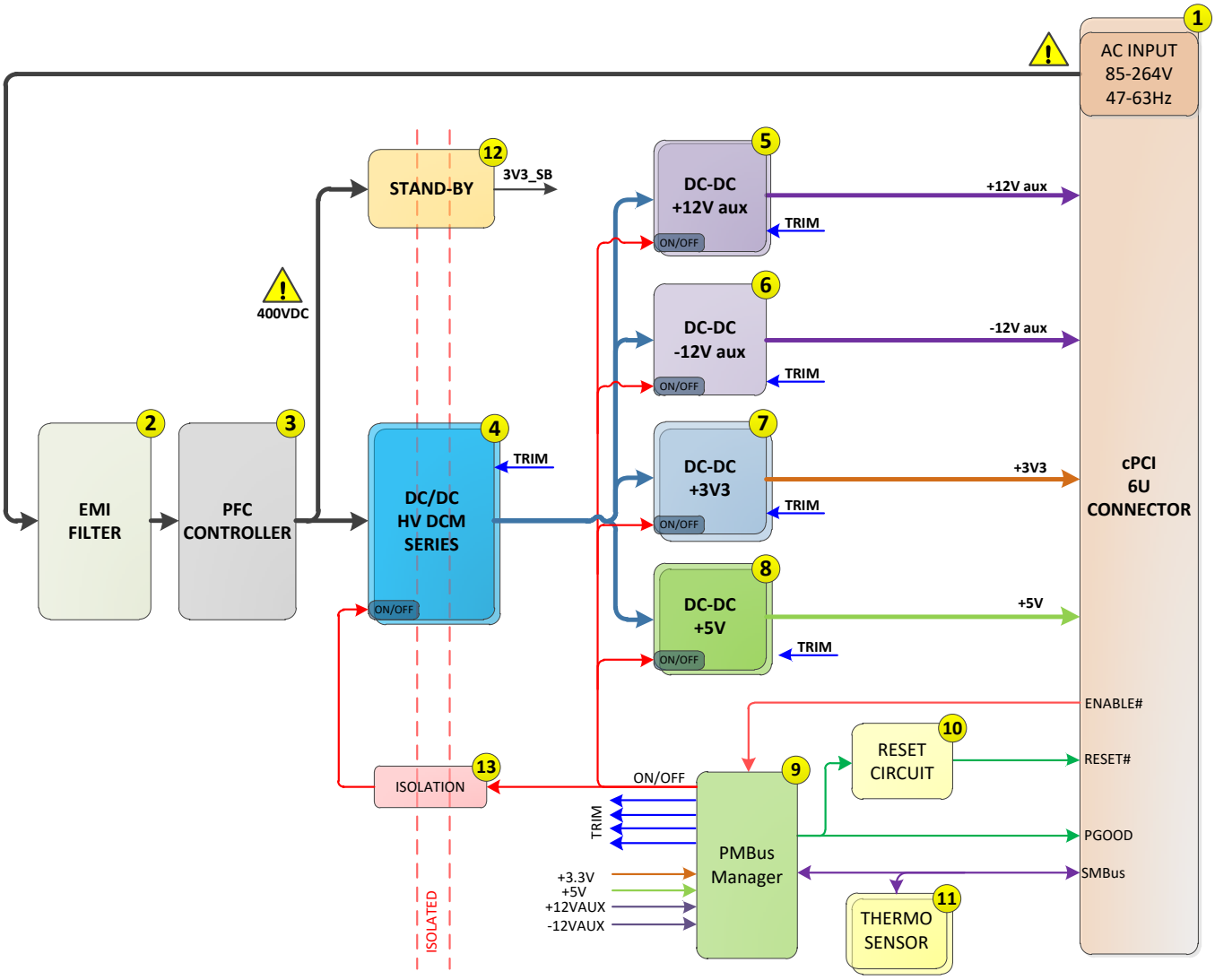
OUTPUT CHARACTERISTICS							
Parameter			*+5V*	*+3.3V*	*+12V aux*	*-12V aux*	*Notes*
Output Voltage Set Point, V			**5**	**3.3**	**12**	**-12**	Vin = 115VAC
- Drift -40 deg.C to 85degC +/- %			**0.01**	**0.01**	**0.01**	**0.01**	Vin = 115VAC
Output Voltage Trim Range, V			**5**	**3.3**	**12**	**-12**	Over Line/load/temp.
			+/- 10%	+/- 10%	+/- 10%	+/- 10%	Over Line/load/temp.
Output Voltage Ripple (pk-pk), mV			**40**	**80**	**80**	**80**	Full load with 1 uF + 10 uF tantalum capacitor
Operating Current Range, A			**0-100**	**0-100**	**0-3**	**0-3**	**700W** Total, maximum combined Output
Over-Voltage Protection, V			**5.6**	**3.6**	**13**	**-13**	
Current Limit Inception, A			**105**	**105**	**3.1**	**3.1**	
Maximum Output Capacitance, mF			**10**	**10**	**1**	**1**	

MODULE QUALIFICATION	
Test Name	*Method*
Random Vibration	**MIL-STD-810, 514.6 - Procedure I, Class V3**
Shock	**MIL-STD-810, 516.6 - Procedure I, VI, Class OS2**
Altitude	**MIL-STD-810, 500.5 - Procedure I, II, III**
Fungus Resistance	**MIL-STD-810, 508.6**
Corrosion Resistance	**ASTM G85, Annex A4**
Humidity	**MIL-STD-810, 507.5 - Procedure II**
High Temperature	**MIL-STD-810, 501.5 - Procedure I, II**
Low Temperature	**MIL-STD-810, 502.5 - Procedure I, II**
Temperature Cycling	**MIL-STD-202, 107 - Class C4**
ESD	**EN61000-4-2, Level 4; 15kV Air Discharge**

RELIABILITY CHARACTERISTICS

Calculated MTBF per MIL-HDBK-217F (GB) at 70 deg C. 4.1 280.000 Hrs.
Calculated MTBF per MIL-HDBK-217F (GM) at 70 deg C.0.92 230.000 Hrs.

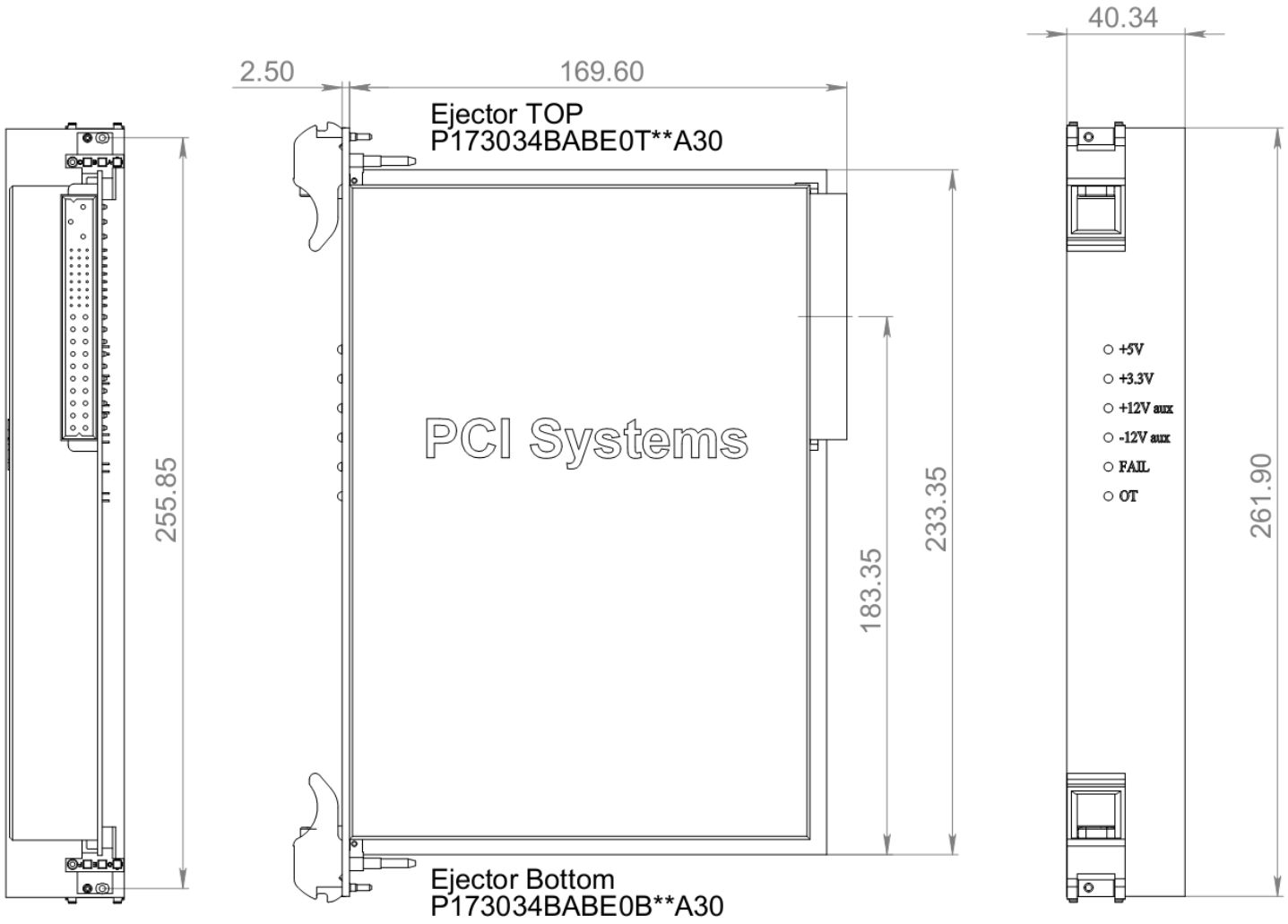
Block Diagram:

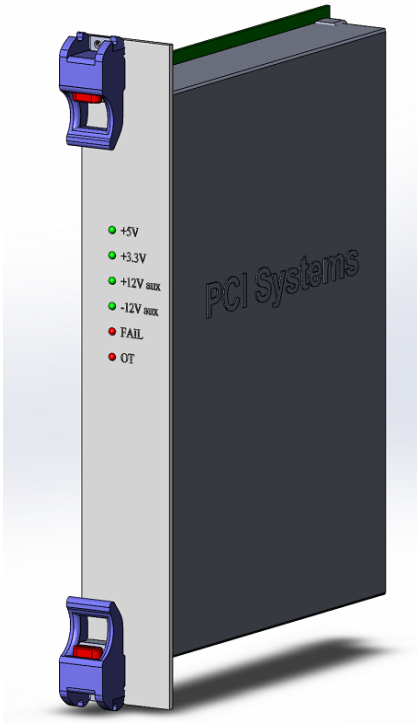


OUTPUT CONNECTOR - Positronic-PCIH47M400A1/AA
PIN ASSIGNMENT

Pin	Pin Type	Signal Name	Description
1-4	Normal	V1	V1 Output (+5V)
5-12	Normal	RTN	V1 and V2 Return (GND)
13-18	Normal	V2	V2 Output (+3.3V)
19	Normal	RTN	V3 Return (GND)
20	Normal	V3	V3 Output (+12V)
21	Normal	V4	V4 Output (-12V)
22	Normal	RTN	Signal Return (GND)
23	Normal	RTN	Signal Return (GND)
24	Normal	RTN	V4 Return (GND)
25	Normal	GA-0	Geographic ADD-0(option)
26	Normal	Reserved	Reserved
27	Short	EN#	Enable (set to GND)
28	Normal	GA-1	Geographic ADD-1(option)
29	Normal	NC	Not Connected
30	Normal	V1 Sense	V1 Remote Sense
31	Normal	GA-2	Geographic ADD-2(option)
32	Normal	NC	Not Connected
33	Normal	V2 Sense	V2 Remote Sense
34	Normal	S RTN	Sense Return
35	Normal	NC	Not Connected
36	Normal	V3 Sense	V3 Remote Sense
37	Normal	IPMB_SCL	System Manager Bus
38	Normal	NC	Not Connected
39	Normal	INH#	Open ON, Low OFF
40	Normal	IPMB_SDA	System Manager Bus
41	Normal	NC	Not Connected
42	Normal	FAL#	Fail Signal
43	Normal	IPMB_PWR	Power – System Manager
44	Normal	NC	Not Connected
45	Long	Chassis GND	Chassis GND (safety ground)
46	Long	AC Neutral	AC input Neutral
47	Long	AC Line	AC Input Line

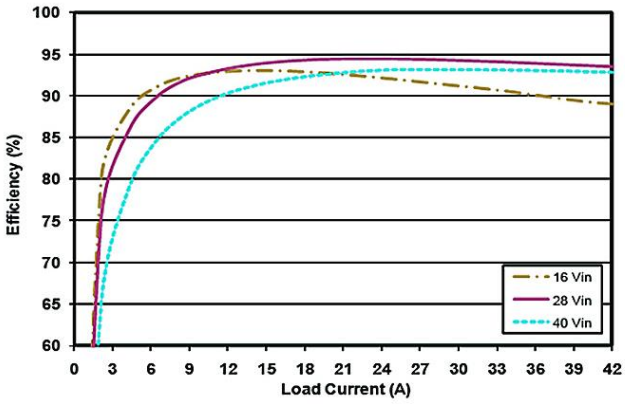
MECHANICAL SPECIFICATOIN



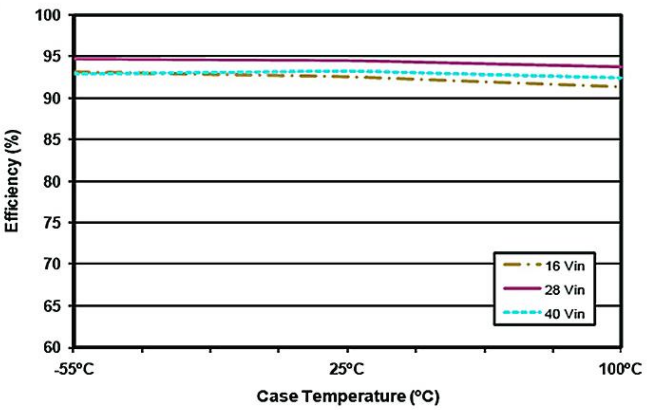


Pin-out: **As per cPCI specification**
Mechanical Dimensions: **8HP approx. 40mm width**

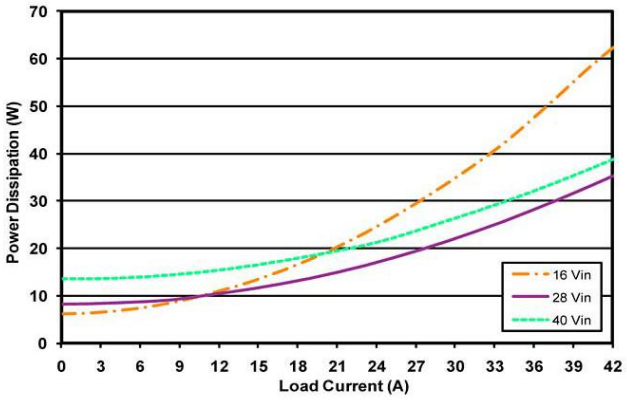
Efficiency for internal DC-DC stages:



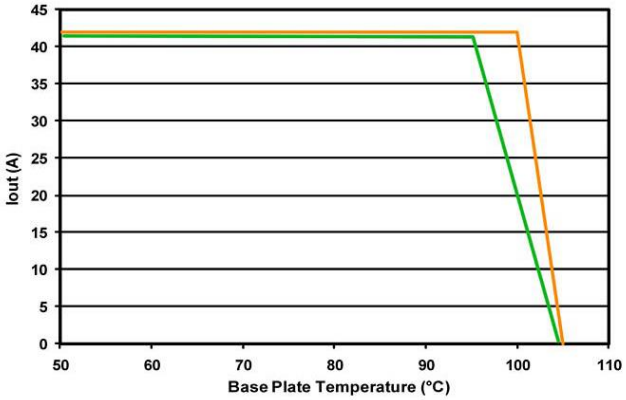
Efficiency at nominal output voltage vs. load curent for min, nom, max input V at 25°C



Efficiency at nominal output voltage and 60% rated power vs. case temp for min, nom, max input voltage



Power Dissipation at nominal output voltage vs. current at module cover 25°C (Delta T to wedgelock 7C°)



Thermal derating max current vs. temp at module cover. (Delta T to wedgelock 7C°)

ORDERING INFORMATION:

PCI_800.302	6U cPCI 700W 85-230VAC 50/60Hz Isolated Rugged Power Supply
PCI_800.302_C	Version with Conformal Coating
PCI_800.302_AIR	air cooled 6U cPCI 700W 85-230VAC 50/60Hz Isolated Rugged Power Supply
PCI_800.302_C_AIR	Version with Conformal Coating

Release_November_29_2017