

PDAM500 Power Supply Series (500W)



Features:

- UL/IEC/EN 60601 3.1 Edition
- UL/IEC/EN 62368-1 Safety Approvals
- High power density: 500W in 3" x 5" footprint
- Open Frame or Enclosed Versions Available
- Remote ON/OFF Function
- Built-in 12V/0.3A Auxiliary Output
- Standby 5V @ 1A with Fan, @ 0.4A without Fan
- High Efficiency up to 93%
- P.F.C. Function >0.94



Description:

The PDAM500 series of compact, open-framed AC-DC switching power supplies offers a high power density to fit in a small space. This dense 3" x 5" platform offers up to 500W of continuous power across a wide range of operating temperatures, all while maintaining a low emissions profile. All models meet FCC, EN55011, and EN55032 emission limits, and comply with UL, IEC, CE, and more.

Model ¹	Output Voltage	Maximum Load Convection ²	Maximum Load with 30CFM Forced Air	Output Load Regulation	Ripple & Noise ⁶	Average Efficiency (230 VAC)	Fan Output	+5VSB Output ⁷
PDAM500-12A	12V	20A	41.5A	±1.2%	160mV	90.5%	12A/0.3A	5V/1A
PDAM500-13A	15V	14.66A	33.3A	±1%	160mV	90.5%	12A/0.3A	5V/1A
PDAM500-14A	24V	10A	20.8A	±1%	240mV	92%	12A/0.3A	5V/1A
PDAM500-18A	48V	5A	10.41A	±1%	480mV	93%	12A/0.3A	5V/1A

NOTES:

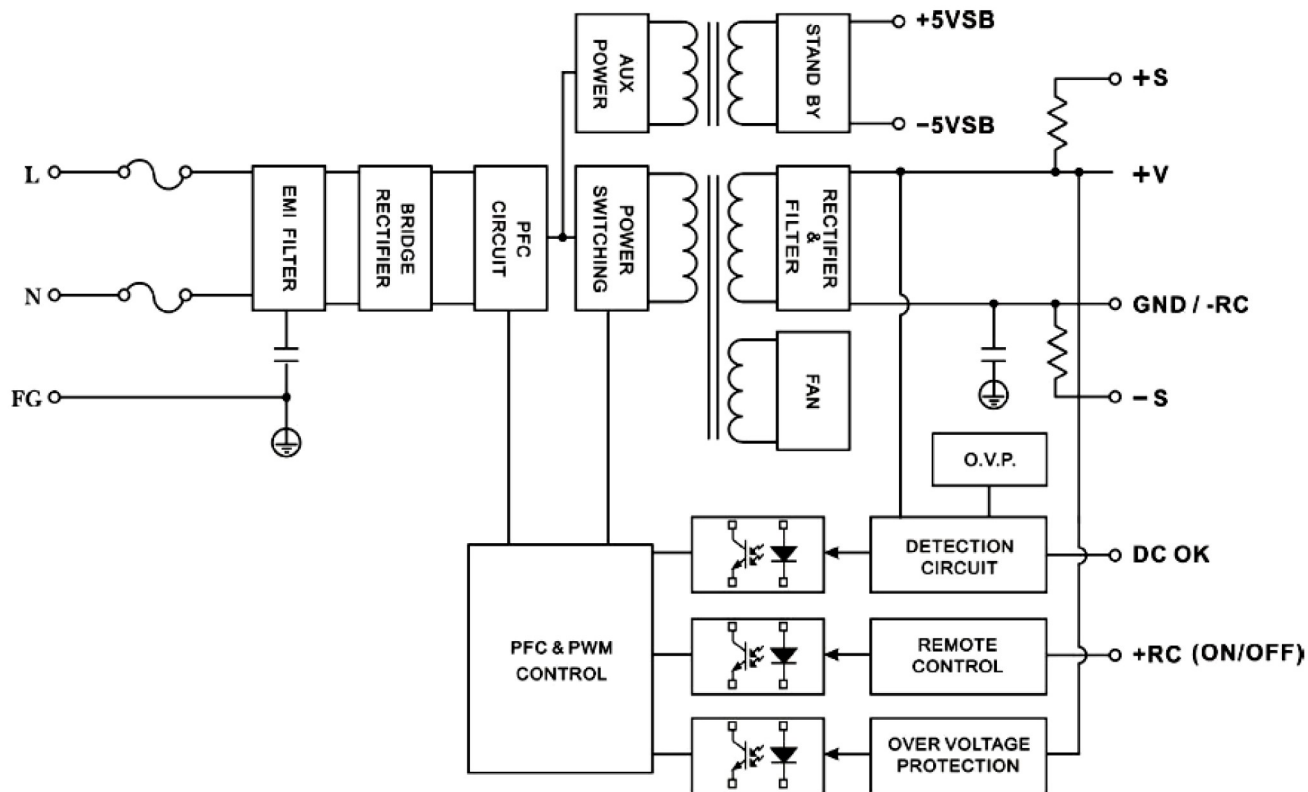
1. All models are available in an enclosed version (e.g. PDAM500-12A would be PDAM500-12C)
2. Listed values are taken at 230VAC. At 115VAC, 19.16A, 9.58A, and 4.8A for the models listed as shown.
3. Recommended to add Varistor 14S471K at L/N input side in parallel.
4. Hold-up Time measured at 90% Vout
5. Main Vout >3% Load, 12V (Aux) / 0.3A.
6. Measured at 20MHz bandwidth with a 47uF electrolytic capacitor and 0.1uF ceramic capacitor in parallel at the output connector.
7. 400mA convection rated.

Specifications	
Input	
Input Voltage	90-264VAC or 120-370VDC
Input Frequency	47-63Hz
Input Current	<6.3A @ 115VAC; <3.15A @ 230VAC
Inrush Current	<40A @ 115VAC; 80A @ 230VAC
Power Factor	>0.94 Full load (230VAC)
Output	
Total Output Power	500W
Hold Up Time	8ms min (115VAC)
Minimum Load	3%
Protection Features	
Overvoltage Protection	Auto Recovery
Overload Protection	Auto Recovery
Short Circuit Protection	Protection Level 1 (nominal): Continuous, Auto Recovery Protection Level 2 (instantaneous high current): Latch
Over Temperature Protection	Auto Recovery
Environmental	
Operating Temperature	-30°C to +70°C (with derating)
Storage Temperature	-35°C to +85°C
Temperature Coefficient	±0.03%/°C (0~50°C) ±0.06%/°C (-30~0°C)
Humidity	95% RH
Operating Altitude	<5000 meters for medical use
General Specifications	
Dimensions	3.0" x 5.03" x 1.38" 127.8mm x 76.2mm x 35.0mm
Weight	480g
MTBF	>160k hours per MIL-HDBK-217F at full load and 25°C ambient temperature
Maximum Efficiency	93%

Specifications Continued	
Safety	
Approved to USA/Canada	UL60601-1 3 rd Edition (2 x MOPP) UL62368-1 (Except 15V model)
Approved to Europe	IEC/EN60601-1 3 rd Edition (2 x MOPP) CB Report EN62368-1 (Except 15V model)
Earth Leakage Current	<0.1 mA max. 264VAC (Input-Output)
Isolation	4000VAC input to output, 2 x MOPP 2000VAC input to ground, 1 x MOPP 1500VAC output to ground, 1 x MOPP
*Consult with TT Electronics for information on additional country safety approvals	
EMC	
EMC (IEC60601-1-2:2014)	FCC Class B Radiated & Conducted EN55011/55032 Class B Radiated & Conducted
Harmonic Currents Voltage Flicker Electrostatic Discharge Radiated Immunity EFT Surge Immunity Conducted Immunity Power Frequency Magnetic Field Immunity Dips/Interruptions	IEC 61000-3-2 IEC 61000-3-3 IEC 61000-4-2: 15kV Air, 8kV contact IEC 61000-4-3: 10V/m IEC 61000-4-4: +/-2kV IEC 61000-4-5: 2005 1kV diff, 2kV com IEC 61000-4-6: 10Vrms IEC 61000-4-8: 30A/m IEC 61000-4-11: 30% reduction for 500ms, 100% reduction for 10ms.

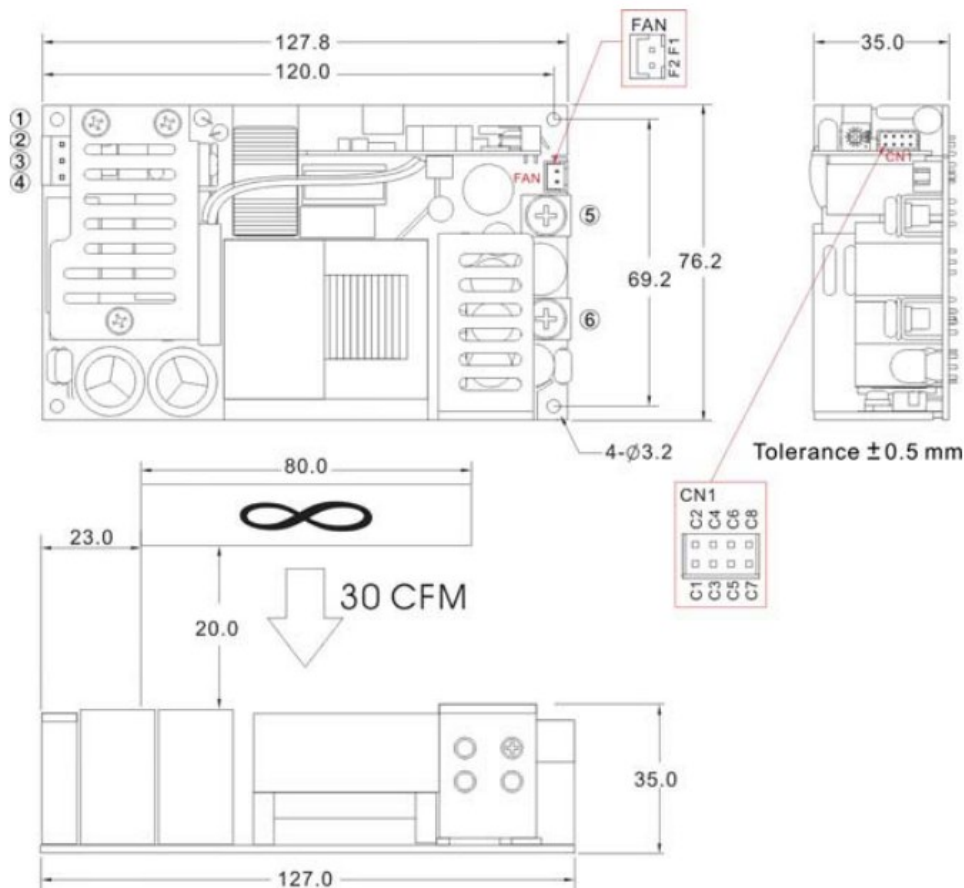
Diagrams

Block Diagram



Diagrams

Mechanical Outline (Open Frame)



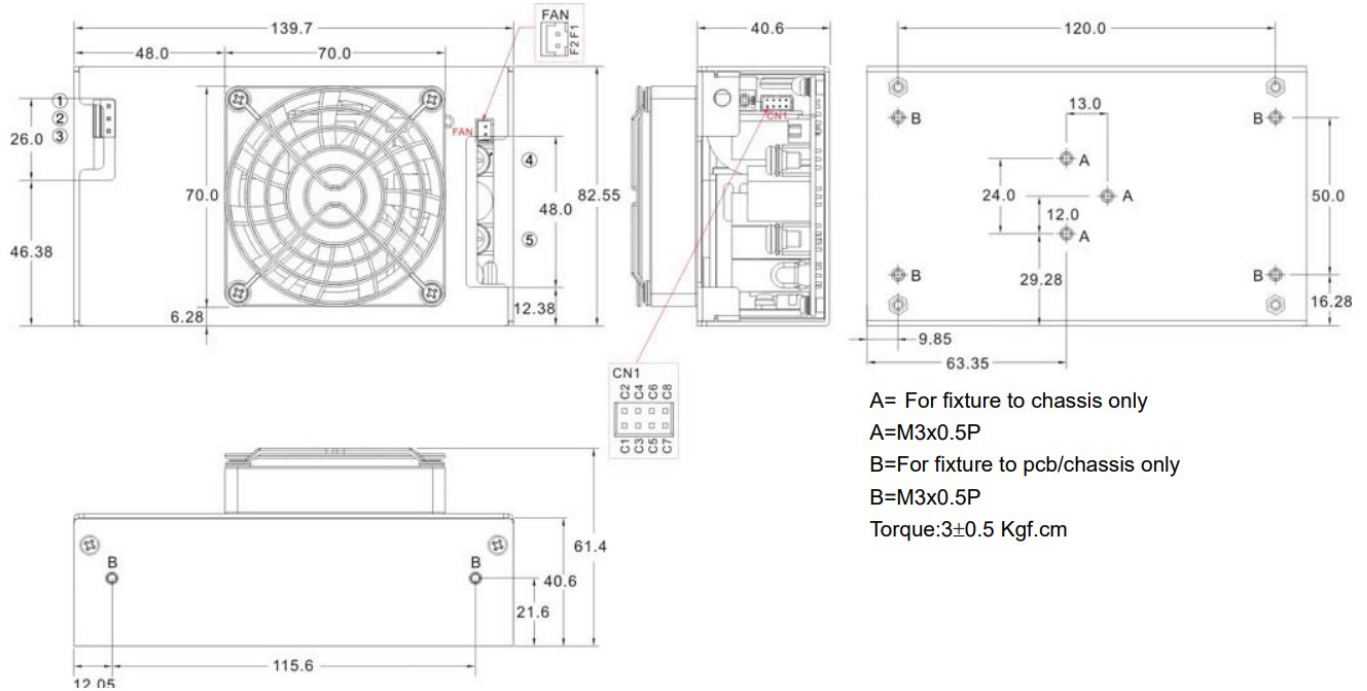
Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	PE	—	—	—	—
2	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
3	NO PIN				
4	AC IN (L)				
5	+DC OUT	Terminal : M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.			
6	-DC OUT				

Connector Pin (FAN)					
Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+12V	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	GND				

Connector Pin (CN1)					
Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
C1	-5V SB	PHD-H20-2X4P	PHD-T20	PHDR-08VS	SPHD-001T-P0.5
C2	+5V SB				
C3	GND				
C4	DC-OK				
C5	-RC				
C6	+RC				
C7	-S				
C8	+S				

Diagrams

Mechanical Outline (Enclosed)



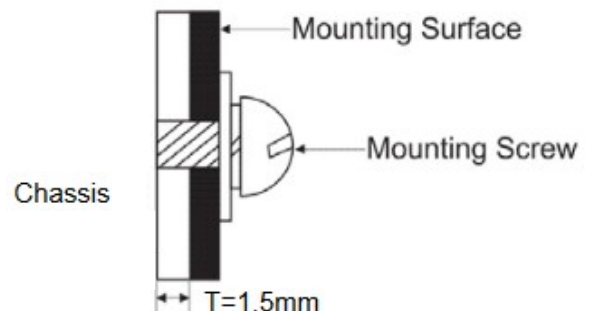
A= For fixture to chassis only
 A=M3x0.5P
 B=For fixture to pcb/chassis only
 B=M3x0.5P
 Torque:3±0.5 Kgf.cm

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PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
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PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
C1	-5V SB	PHD-H20-2X4P	PHD-T20	PHDR-08VS	SPHD-001T-P0.5
C2	+5V SB				
C3	GND				
C4	DC-OK				
C5	-RC				
C6	+RC				
C7	-S				
C8	+S				

Customer is advised to screw into the threads no more than 1.5mm



Diagrams

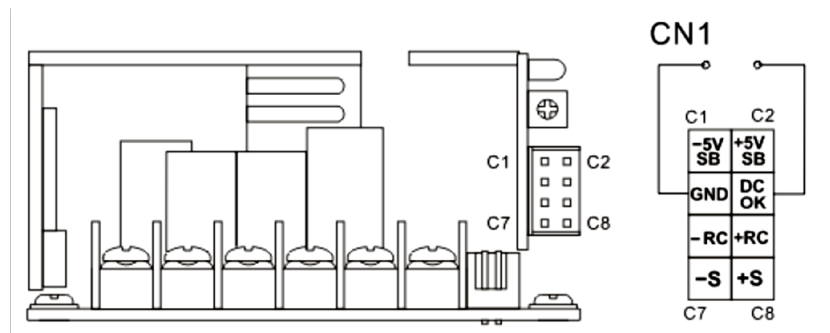
Function Description of CN1

Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 3.7~6V, referenced to pin C8 (+5VSB). The maximum load current is 0.6A.
C3	GND	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C4	DC OK	DC-OK signal is a DC output, referenced to pin C6 (DC-OK GND).
C5	-RC	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C4 (-RC), Short: Power OFF, Open: Power ON.
C7	-S	Negative sensing. The -S Signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.
C8	+S	Positive sensing. The +S Signal should be connected to the negative terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.

Function Manual & Application

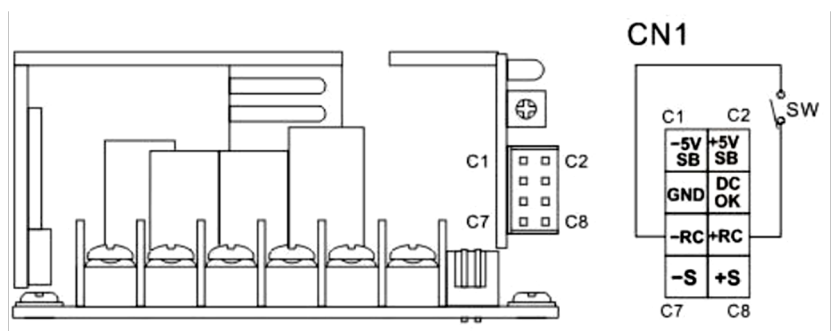
1. DC-OK Signal

Between DC-OK and GND	Output Status
3.7~6V	ON
0~1V	OFF



1. Remote Control

Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	ON



Diagrams

Power Derating

