POLYTRON DEVICES

DATA SHEET

500 Watts

PFUIE500 SERIES

KEY FEATURES

- Universal Input 90-264Vac
- High Efficiency up to 91.5%
- Safety Approval to UL / IEC / EN 62368-1
- -30°C to +70°C Wide Range Operation Temperature
- Operating Altitude 5000M
- Active PFC Function
- I/O Isolation 4000VAC
- Standby 5V@1A
- 3-Year Product Warranty

ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		PFUIE500-12S	PFUIE500-24S	PFUIE500-48S
Max Output Wattage (W)		500 W		
Input	Voltage (Note 3)	90-264 VAC or 127-370 VDC		
	Frequency (Hz)	47-63 Hz		
	Current (Full load)	<6.3 A max. (115 VAC) / <3.15 A max. (230 VAC)		
	Inrush Current (<2ms) (Clod Start)	< 40 A max. (115 VAC) / < 80 A max. (230 VAC)		
	Power Factor (at 230 VAC)	PF>0.94 at Full Load		
Output	Voltage (V.DC.)	12V	24V	48V
	Voltage Adj Range (V.DC.)	±5% Output Voltage		
	Voltage Accuracy	±2%		
	Current (with 30CFM FAN) (A) (max.)	41.6	20.8	10.41
	Line Regulation (100-264 VAC)	±1%		
	Load Regulation (10-100%) (typ.)	±1%		
	Minimum Load	1%		
	Maximum Capacitive Load	5,000μF	2,500μF	1,250μF
	Ripple & Noise (typ.) (Note 1)	160mV	240mV	480mV
	Efficiency (at 230VAC)	90%	90.5%	91.5%
	Hold-up Time (at 115 VAC) (Note 2)	8 ms min.		
Protection	Over Power Protection	Auto recovery		
	Over Voltage Protection	Auto recovery		
	Overt Temperature Protection	Auto recovery		
	Short Circuit Protection	Protection level 1 (nominal)：Continuous, Auto recovery		
		Protection level 2 (instantaneous high current)：Latch		
Isolation	Input-Output (Note 5)	4000VAC or 5656VDC		
	Input-PE (Note 5)	2000VAC or 2828VDC		
	Output-PE (Note 5)	1500VAC or 2121VDC		
Environment	Operating Temperature	-30°C…+70°C (with derating)		
	Storage Temperature	-30°C…+85°C		
	Temperature Coefficient	±0.03%/°C (0~50°C)		
		±0.06%/°C (-30~0°C)		
	Altitude During Operation	5000m		
	Humidity	95% RH		
	MTBF	>160,000 h @ 25°C (MIL-HDBK-217F)		
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)		
	Shock	IEC60068-2-27		

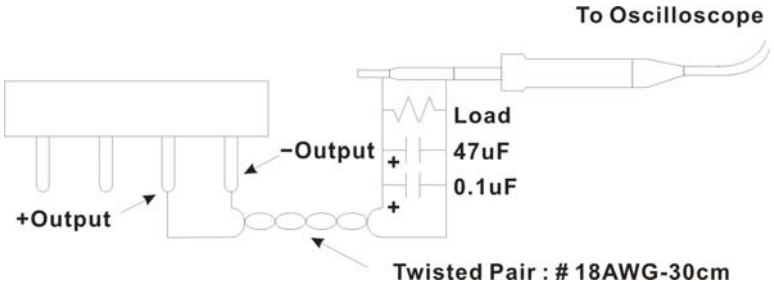
ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		PFUIE500-12S	PFUIE500-24S	PFUIE500-48S
Physical	Dimensions (L x W x H)	5.11 x 3.25 x 2.42 Inches (129.7 x 82.55 x 61.4) Tolerance ±0.5 mm		
	Weight	In Progress		
Safety	Approval	UL / IEC / EN 62368 (In Progress)		
EMC	Conducted EMI	EN55032 Class B (In Progress)		
	Radiated EMI	EN55032 Class A (In Progress)		
	EMS	EN55035 (In Progress)		

NOTE

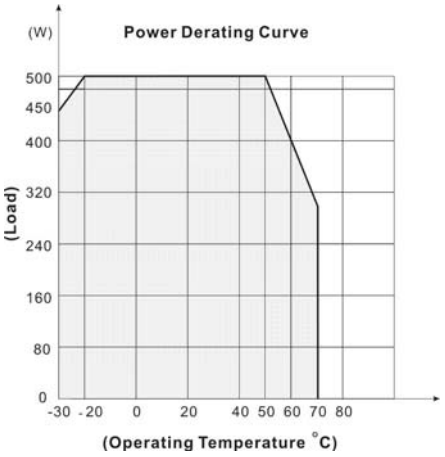
1. Ripple & Noise are measured at 20MHz of bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor.



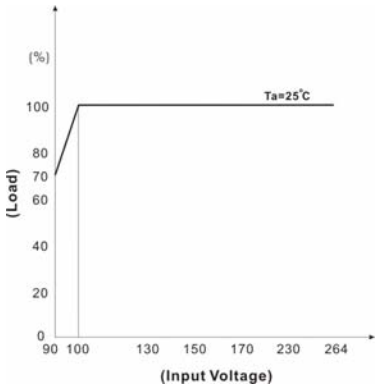
A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected to AC ground.

2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2~13.3V
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Polytron Devices.
6. **CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.**

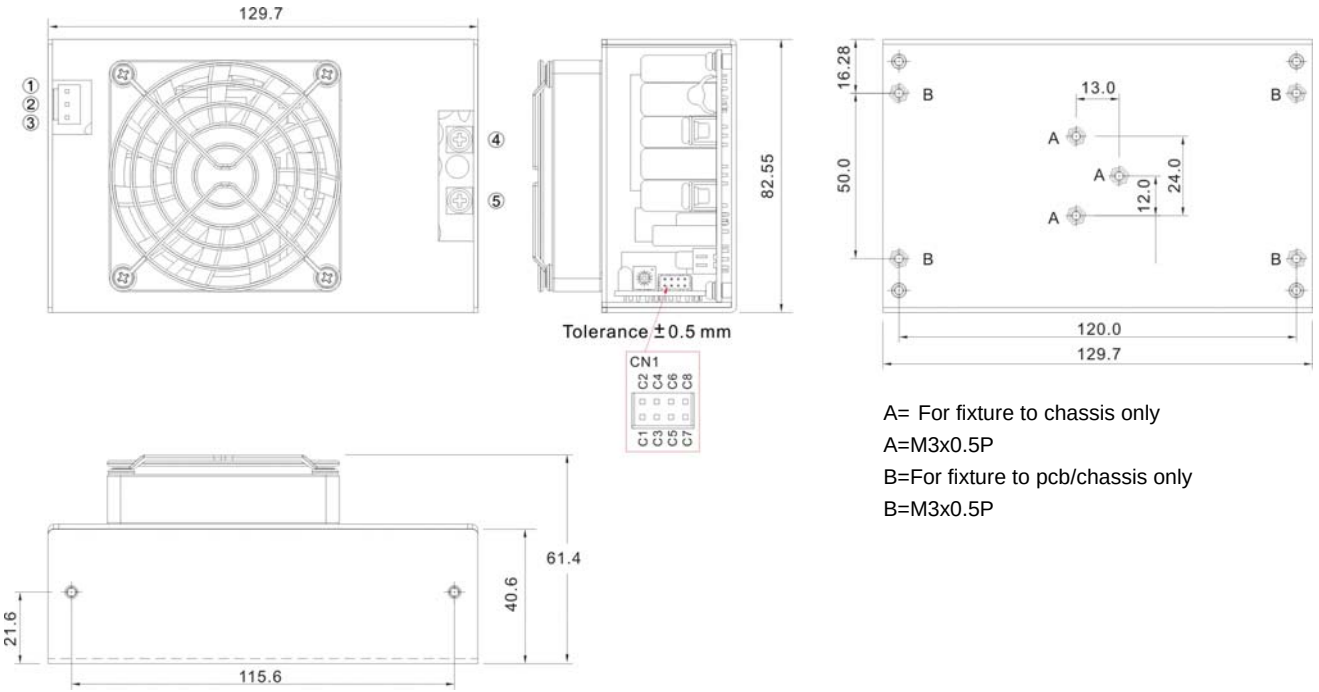
DERATING



If input voltage is lower than 100VAC, please refer to the output derating V.S. input voltage curve for details



MECHANICAL DIMENSIONS (Top View)



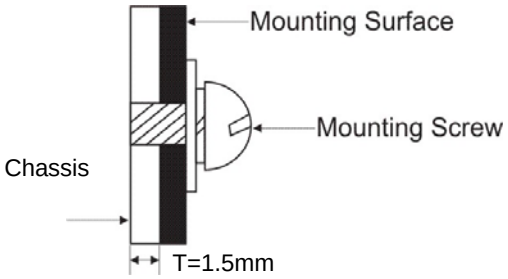
A= For fixture to chassis only
A=M3x0.5P
B=For fixture to pcb/chassis only
B=M3x0.5P

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

ASSEMBLY INSTRUCTIONS

*U Case T=1.5mm

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



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				

Connector Pin (FAN)					
Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+12V	8821-2	8820T	XHP-2	SXH-002T-P0.6
F2	GND				