KEY FEATURES

- U Bracket Medical Switching Power Supply
- Remote ON/OFF Function
- 200 Watt with Free Air Convection
- 500 Watt with 30CFM FAN
- Built-in 12V/0.3A Auxiliary Output
- Standby 5V@1A with Fan, @0.4A without Fan
- High Efficiency up to 93%
- With P.F.C. Function >0.94
- Ultra Compact Size: 5.5 x 3.25 x 1.66 Inches
- 3-Year Product Warranty

M500W SERIES

E199779 LEVEL3 E308218
(except for 15S)

ELECTRICAL SPECIFICATIONS

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

Model No			FSP500MWVS012U	FSP500MWVS015U	FSP500MWVS024U	FSP500MWVS048U
Max Output Wattage (W)			500 W (30CFM FAN)			
Max Output Wattage (W)			Others: 190 W (115 VAC) / 200 W (230 VAC)			
			15S: 170 W (115 VAC) / 180 W (230 VAC)			
Input	Voltage		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)			
	Leakage Current		< 0.1 mA max. (Input-Output)			
	Power Factor (at 230 VAC)		PF>0.94 at Full Load			
Output	Voltage (V.DC.)		12V	15V	24V	48V
	Voltage Accuracy		±2%			
	Voltage Adj. Range (V.DC)		±4% Output Voltage			
	Current (with 30CFM FAN) (A) max		41.5	33.3	20.8	10.41
	Current (Free air Convection) (A) max	at 115 VAC	15.83	11.33	7.91	3.96
		at 230 VAC	16.6	12	8.33	4.17
	Line Regulation (115-264 VAC)		±0.5%			
	Load Regulation (10-100%) (typ.)		±1%			
	Minimum Load		3%			
	Maximum Capacitive Load		5,000μF	3,750μF	2,500μF	1,250μF
	Ripple & Noise (typ.)		160mV	160mV	240mV	480mV
	Efficiency (at 230 VAC)		90.5%	90.5%	92%	93%
	Hold-up Time (at 115 VAC)		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 (V.AC)		4000VAC or 5656VDC			
	Input-PE (V.AC)		2000V			
	Output-PE (V.AC)		1500V			
Environment	Operating Temperature		-30°C…+70°C (with derating)			
	Storage Temperature		-35°C…+85°C			
	Temperature Coefficient		±0.03%/°C (0~50°C)			
			±0.06%/°C (-30~0°C)			
	Altitude During Operation		5000m			
	Humidity		95% RH			
	Atmospheric Pressure		56 kPa to 106 kPa			
	MTBF		>160,000 h @ 25°C (MIL-HDBK-217F)			
	Vibration		10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.			

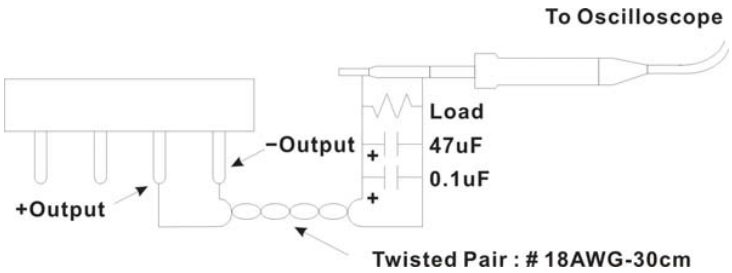
ELECTRICAL SPECIFICATIONS

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

Model No.		FSP500MWVS012U	FSP500MWVS015U	FSP500MWVS024U	FSP500MWVS048U
Physical	Dimension (L x W x H)	5.5 x 3.25 x 1.66 Inches (139.7 x 82.55 x 42.1 mm) Tolerance ± 0.5 mm			
	Weight	580 g			
	Cooling Method	Free convection / 30 CFM FAN			
Safety	Approval	Others: UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2			
		15S: UL / IEC / EN 60601 3.1rd Edition			
EMC	Conducted and Radiated EMI	EN55011 / conducted class B, Radiated Class A			
	EMS	EN60601-1-2 4th edition			

NOTE

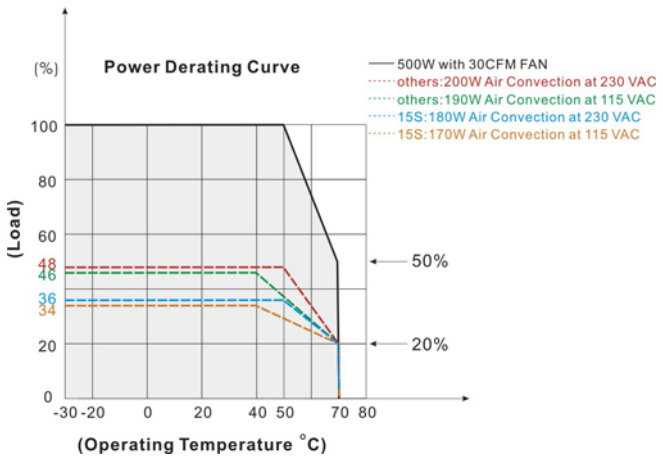
1. Ripple & Noise are measured at 20MHz of bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor.

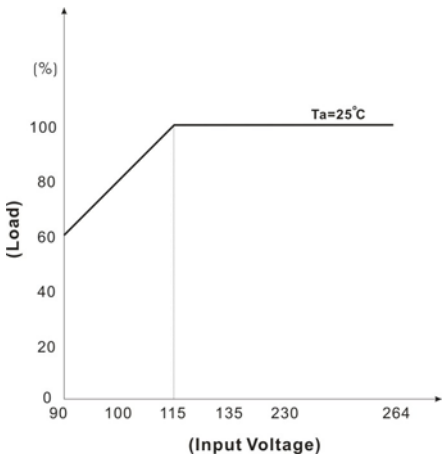


A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating.
The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible.
The oscilloscope bandwidth should be at 20MHz and connected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

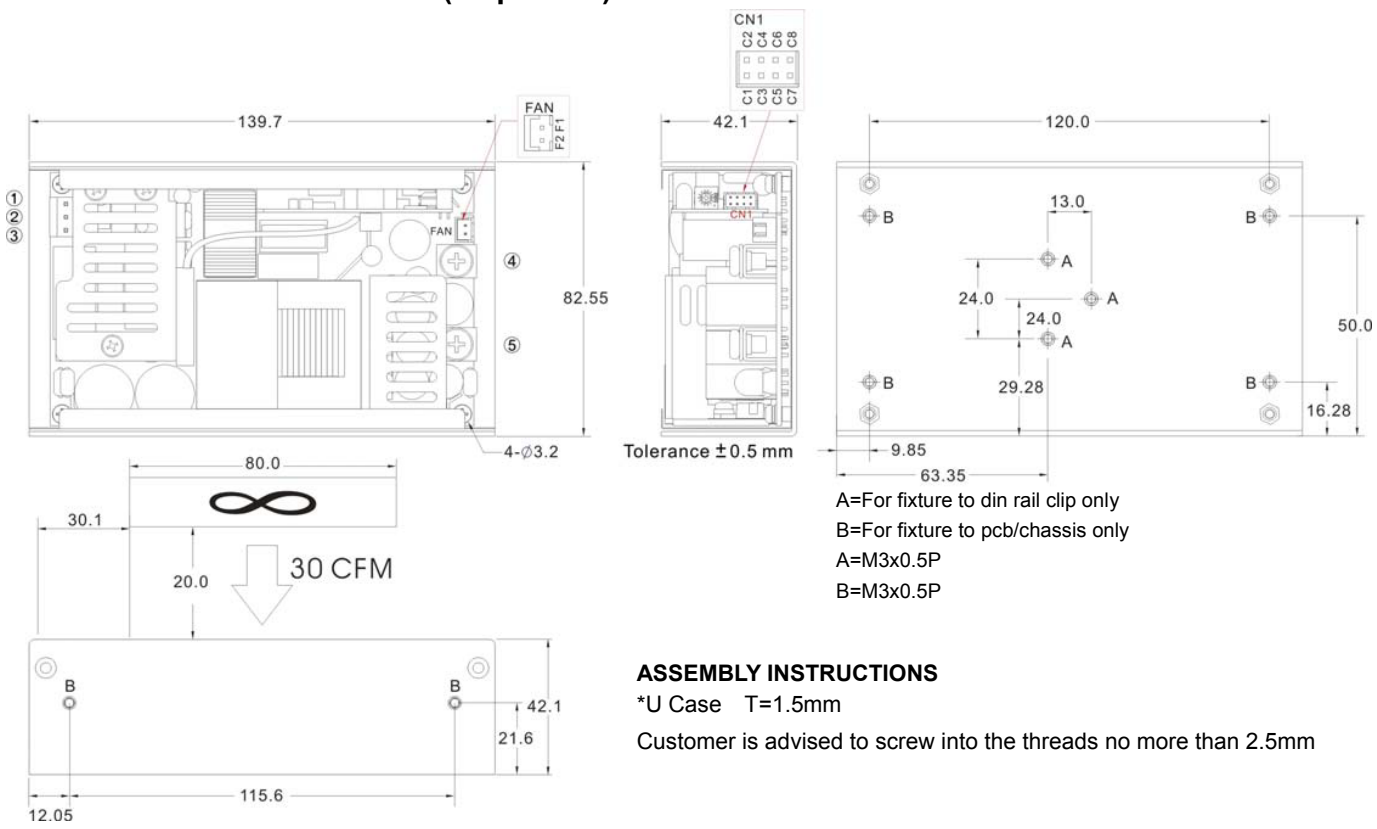
2. Hold-up Time measured at 90% Vout.
3. Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2~13.3V
4. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors within Arch power supply.

DERATING





MECHANICAL DIMENSION (Top View)



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

ASSEMBLY INSTRUCTIONS

*U Case T=1.5mm

Customer is advised to screw into the threads no more than 2.5mm

PIN#	Single	Mating Housing	Terminal
A	PE		
AC Input Connector Pin : Alex 9397-3			
1	AC IN (N)	Alex 9396-3 or equivalent	Alex 96T Series or equivalent
2	NO PIN		
3	AC IN (L)		
DC Output Connector Pin			
4	+DC OUT	M5 Pan HD screw in 2 positions	
5	-DC OUT	Torque to 8 lbs-in(90 cNm) max.	

Connector Pin (FAN) = Cherng Weei CX-W250-02			
PIN#	Single	Mating Housing	Terminal
F1	+12V	Cherng Weei CS-H250-02 or equivalent	Cherng Weei CS-T2501 or equivalent
F2	GND		

Connector Pin (CN1) = Cherng Weei PHD2.0 - 2x4P			
PIN#	Single	Mating Housing	Terminal
C1	-5VSB	Cherng Weei PHD2.0 - 2x4P or equivalent	Cherng Weei PHD2.0 - 2x4P or equivalent
C2	+5VSB		
C3	GND		
C4	DC OK		
C5	-RC		
C6	+RC		
C7	-S		
C8	+S		

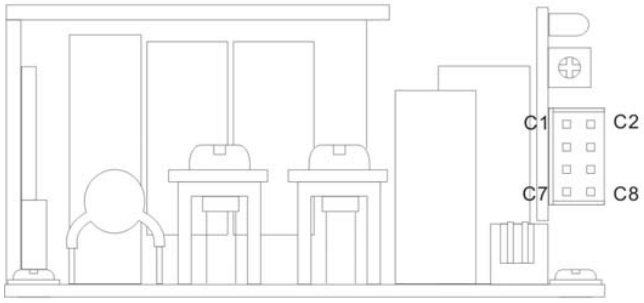
FUNCTION DESCRIPITON of CN1

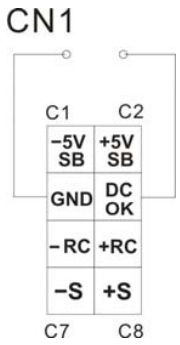
Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 4.2~5.5V, referenced to pin C1(-5VSB). The maximum load current is 1A with Fan, 0.4A without Fan..
C3	GND	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C4	DC OK	DC-OK Signal is a DC output, referenced to pin C3(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 C5 (-RC), Short: Power OFF, Open: Power ON. The input voltage must be less than 1V in order to disable VOUT and greater than 3.3V (up to 5V) to enable it.
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.
C8	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect.

FUNCTION MANUAL & APPLICATION NOTE

1. DC-OK Signal

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

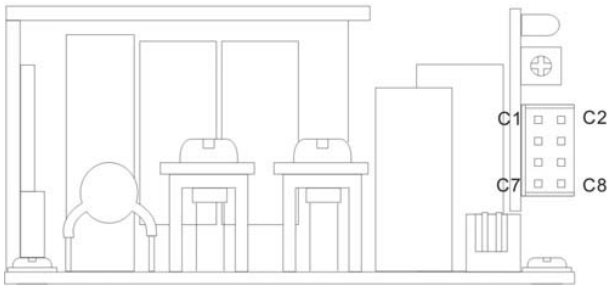


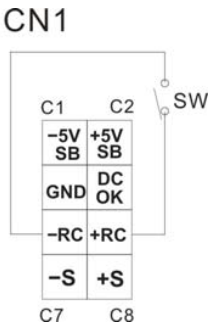


2. Remote Control

It can be turned ON/OFF by using the "Remote Control" function.

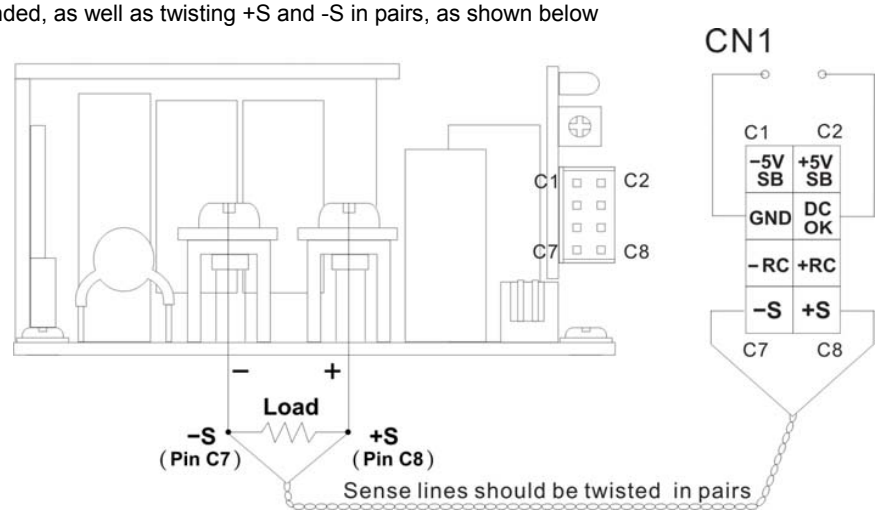
Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	ON





2. +S and -S Sense

Shorter wiring to each unit is recommended, as well as twisting +S and -S in pairs, as shown below



BLOCK DIAGRAM