

KEY FEATURES

- Open Frame Switching Power Supply
- Remote ON/OFF Function
- 240 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 92%
- With P.F.C. Function >0.95
- Ultra Compact Size: 5.0 x 3.0 x 1.4 Inches
- 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.			AQF500-12S		AQF500-24S		AQF500-48S	
Max Output Wattage (W)			500 W (30CFM FAN)					
Max Output Wattage (W)			230 W (115 VAC) / 240 W (230 VAC)					
Input	Voltage		90-264 VAC or 120-370 VDC					
	Frequency (Hz)		47-63 Hz					
	Current (Full load)		< 6.0 A max. (115 VAC) / < 3.0 A max. (230 VAC)					
	Inrush Current (<2ms) (Clod Start)		< 35 A max. (115 VAC) / < 70 A max. (230 VAC)					
	Leakage Current		< 0.5 mA max.					
	Power Factor		PF>0.95 at Full Load					
Output	Voltage (V.DC.)		12V		24V		48V	
	Voltage Accuracy		±2%					
	Voltage Adj. Range (V.DC)		11.52~12.48		23.04~24.96		46.08~49.44	
	Current (with 30CFM FAN) (A) max		41.5		20.8		10.41	
	Current (Free air Convection) (A) max	at 115 VAC	19.16		9.58		4.8	
		at 230 VAC	20		10		5	
	Line Regulation (115-264 VAC)		±1%					
	Load Regulation (10-100%) (typ.)		±1.2%		±1%			
	Minimum Load		3%					
	Maximum Capacitive Load		10,000µF		5,000µF		2,500µF	
	Ripple & Noise (typ.)		150mV		240mV		480mV	
	Efficiency (at 230 VAC)		88%		90%		92%	
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		Auto recovery					
Isolation	Input-Output (V.AC)		3000VAC or 4242VDC					
	Input-FG (V.AC)		1500V					
	Output-FG (V.AC)		500V					
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)					
	Humidity		95% RH					
	MTBF		>160,000 h @ 25°C (MIL-HDBK-217F, Notice 1)					
	Vibration		10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.					

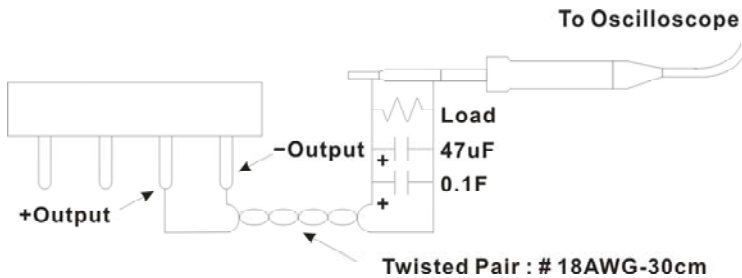
ELECTRICAL SPECIFICATIONS

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

Model No.		AQF500-12S	AQF500-24S	AQF500-48S
Physical	Dimension (L x W x H)	5.0 x 3.0 x 1.4 Inches (127.0 x 76.2 x 35.5 mm) Tolerance ±0.5 mm		
	Weight	460 g		
	Cooling Method	Free convection / 30 CFM FAN		
Safety	Agency Approvals	CE, UL60950-1, CB		
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B, Radiated Class A		
	EMS (Noise Immunity)	EN 55024		
	Surge	1KV L-N, 2KV L N-FG		

NOTE

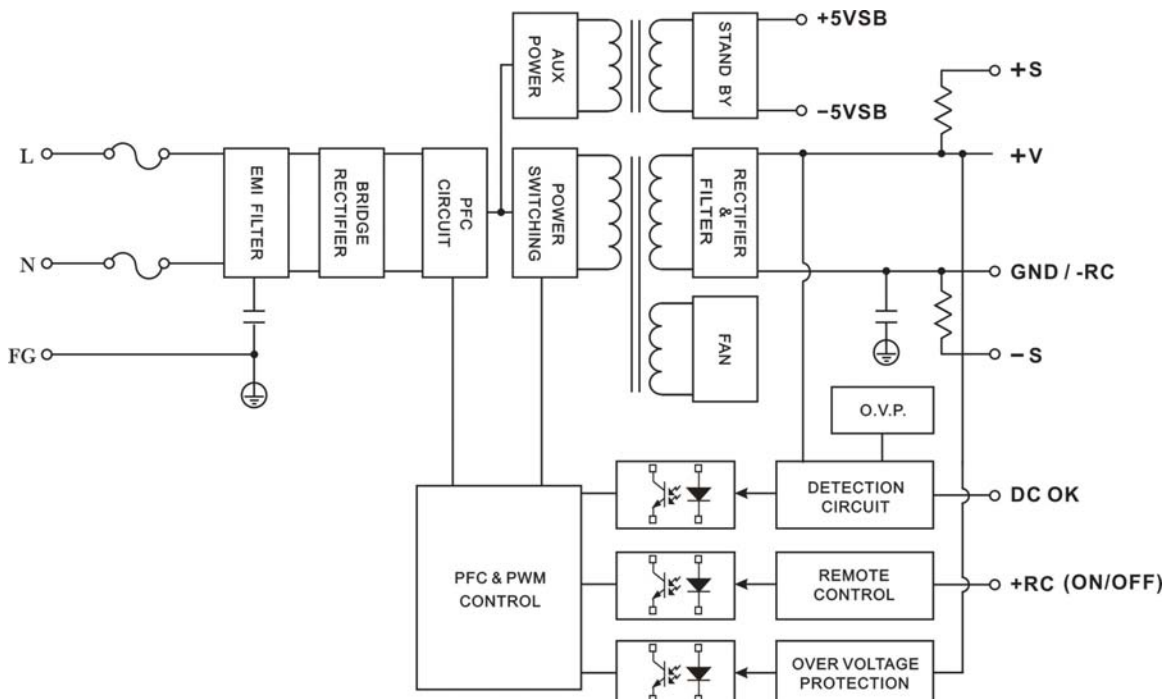
1. Ripple & Noise are measured at 20MHz of bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor.



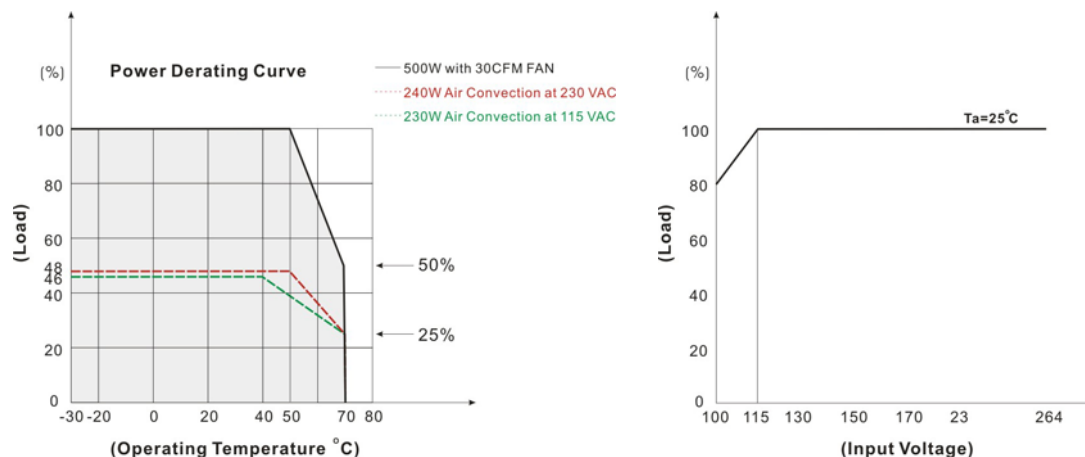
A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected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

2. It's recommended to add Varistor 14S471K at L / N input side in parallel.
3. Hold-up Time measured at 90% Vout.
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 within Arch power supply.

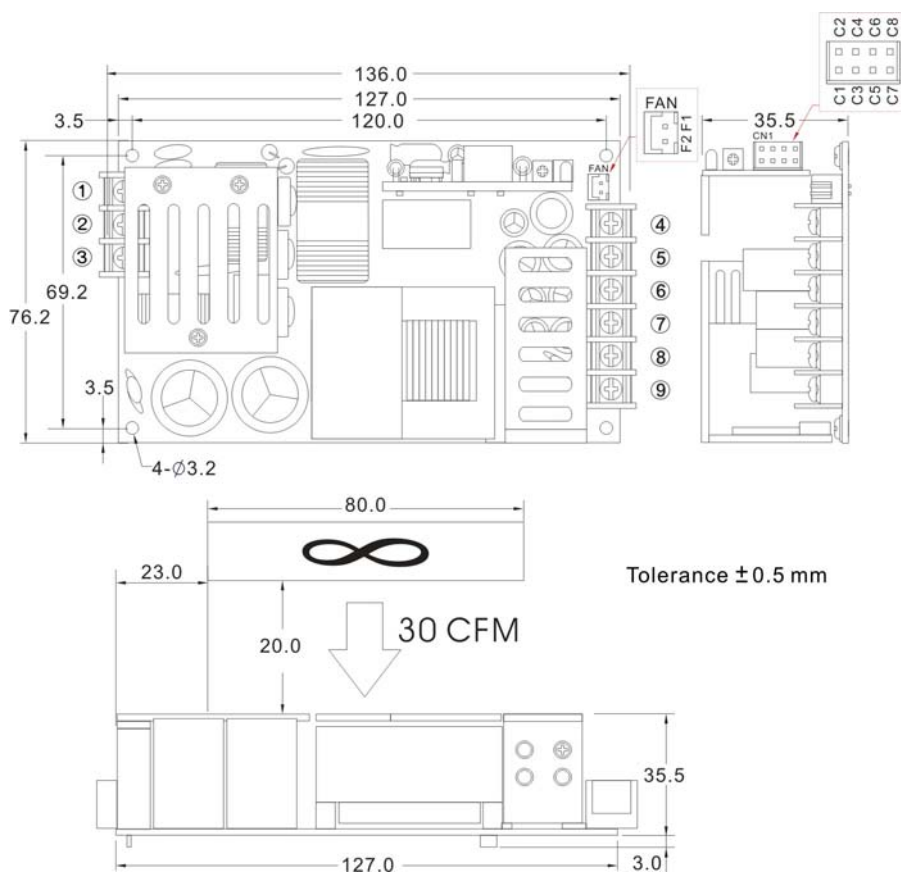
BLOCK DIAGRAM



DERATING



MECHANICAL DIMENSION (Top View)



PIN#	Single
1	FG
2	AC IN (N)
3	AC IN (L)
4~6	+DC OUT
7~9	-DC OUT

Connector Pin (FAN)	
PIN#	Single
F1	+12V
F2	GND

Connector Pin (CN1)	
PIN#	Single
C1	-5VSB
C2	+5VSB
C3	GND
C4	DC OK
C5	-RC
C6	+RC
C7	-S
C8	+S

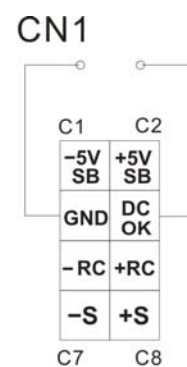
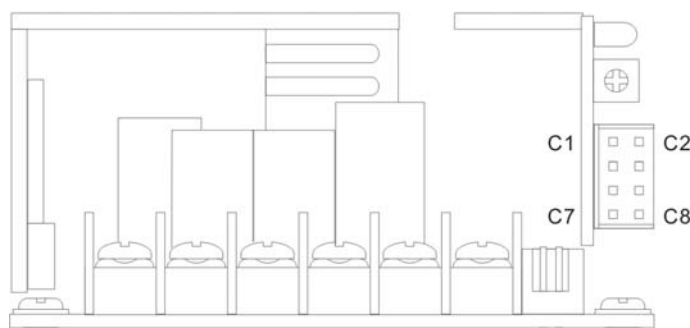
FUNCTION DESCRIPITON of CN1

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 4.4~5.5V, referenced to pin C1(-5VSB). The maximum load current is 0.4A.
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.
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 positive 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 NOTE

1. DC-OK Signal

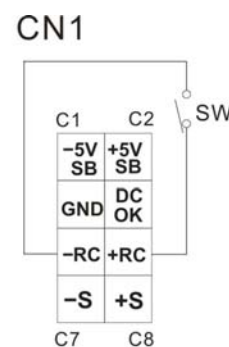
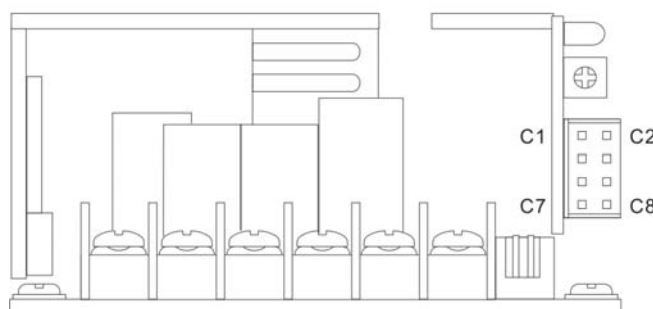
Between DC-OK and GND	Output Status
3.7~6V	ON
0~1V	OFF



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

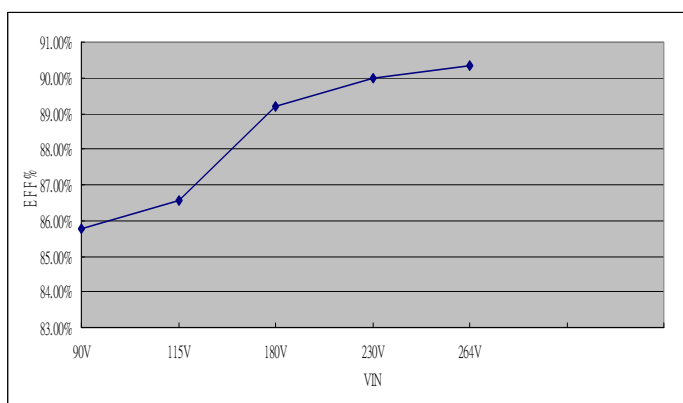


EFFICIENCY VERSUS LOAD

AQF500-12S

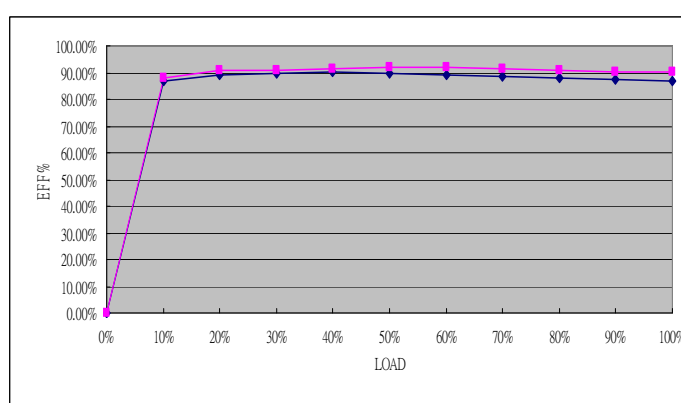
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	85.78	86.58	89.21	90.01	90.34



LOAD VS Efficiency

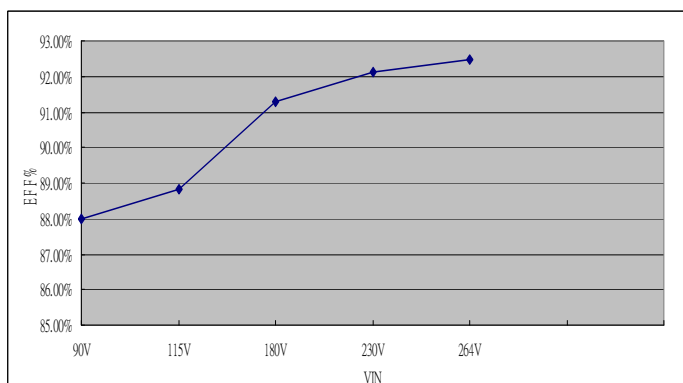
Load (%)	10	20	30	40	50
115V (%)	86.67	89.20	89.80	90.06	89.87
230V (%)	88.19	90.82	91.00	91.71	91.86
Load (%)	60	70	80	90	100
115V (%)	89.30	88.77	88.18	87.27	86.58
230V (%)	91.77	91.40	90.79	90.44	90.01



AQF500-24S

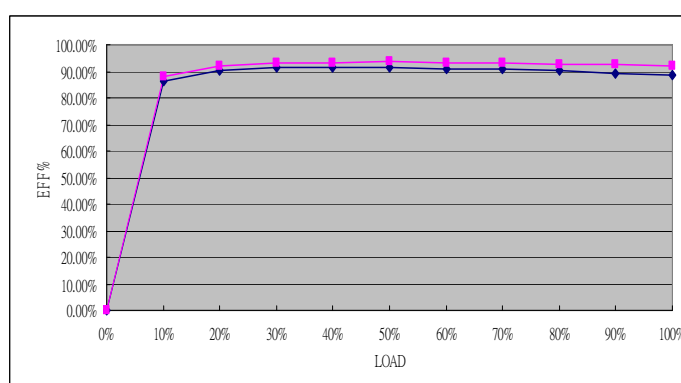
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.99	88.84	91.29	92.13	92.48



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	86.38	90.14	91.42	91.48	91.52
230V (%)	87.90	91.79	93.12	93.40	93.58
Load (%)	60	70	80	90	100
115V (%)	91.12	90.61	90.20	89.35	88.84
230V (%)	93.39	93.27	92.72	92.47	92.13

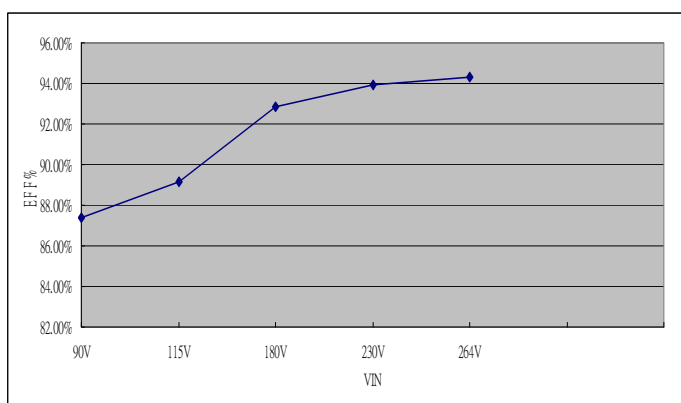


EFFICIENCY VERSUS LOAD

A QF500-48S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.36	89.18	92.88	93.89	94.33



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	86.60	90.27	91.54	91.83	91.84
230V (%)	89.45	93.31	94.10	94.45	94.66
Load (%)	60	70	80	90	100
115V (%)	91.67	91.33	90.72	90.14	89.47
230V (%)	94.65	94.47	94.22	94.29	93.96

