ARCH ELECTRONICS CORP.

AC-DC ITE Switching Power Supply

AQF1000 SERIES 1000 Watts

KEY FEATURES

- Enclosed ITE Switching Power Supply
- I/O Isolation 4300VAC
- 5000m Altitude Application (OVC III:2000m)
- Over-Voltage Category OVC III
- Remote ON/OFF Function
- Standby 5V@1A
- High Efficiency up to 92%
- With P.F.C. Function >0.9
- Ultra Compact Size: 7.6 x 4.02 x 1.62 Inches
- Safety Approval to UL / IEC / EN 62368-1
- 3-Year Product Warranty



E199779

ELECTRICAL SPECIFICATIONS

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

Model No.		AQF1000-12S	AQF1000-24S	AQF1000-48S
Max Output Wattage (W)		800W	1000W	
Input	Voltage (Note 5)	90-264 VAC		
	Frequency (Hz)	50-60 Hz		
	Current (Full load)	< 11 A max. (115 VAC) / < 5.5 A max. (230 VAC)		
	Inrush Current (<2ms) (Clod Start)	< 70 A max. (115 VAC) / < 105 A max. (230 VAC)		
	Leakage Current	< 0.75 mA max. (264 VAC)		
	Power Factor (at 230 VAC)	PF>0.9 at Full Load		
Output	Voltage (V.DC.)	12V	24V	48V
	Voltage Accuracy	±2%		
	Current (A) (max.)	66.67	41.67	20.84
	Line Regulation (115-264 VAC)	±0.5%		
	Load Regulation (10-100%) (typ.)	±2%		
	Maximum Capacitive Load	7000 uF	3500 uF	1750 uF
	Ripple & Noise (typ.) (10-100%)	160mV	240mV	480 mV
	Efficiency (at 230 VAC)	89%	92%	92%
	Hold-up Time (at 115 VAC)	3 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)	4300VAC or 6000VDC		
	Input-PE (V.AC)	2000V		
	Output-PE (V.AC)	1500V		
Function	5V Stand by	5VSB: 5V@1A ; Tolerance ±10%		
	DC OK Signal (Power Good)	Turn ON: 3.7~5.7V ; Turn OFF: 0~1V		
	Remote Control	+RC / -RC: Power ON=open ; Power OFF=short		
Environment	Operating Temperature (Note 4)	-20°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	OVC II=5000m、OVC III=2000m		
	Humidity	95% RH		
	Atmospheric Pressure	56 kPa to 106 kPa		
	MTBF	>100,000 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		

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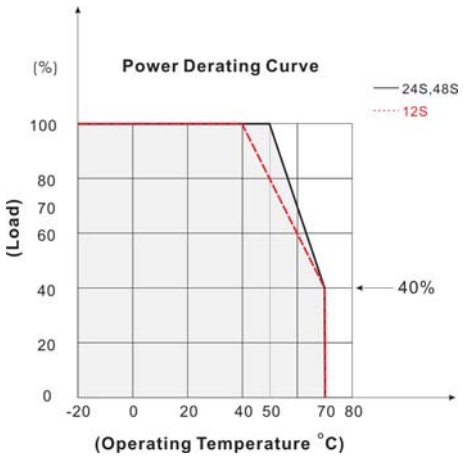
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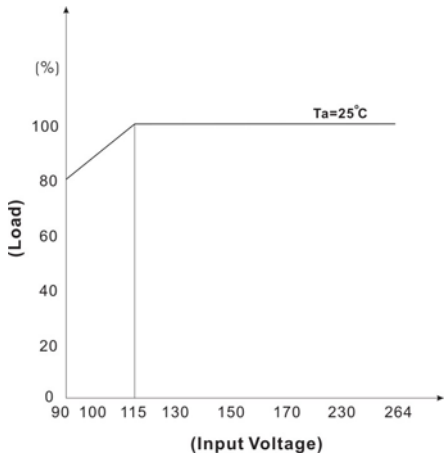
Model No.		AQF1000-12S	AQF1000-24S	AQF1000-48S
Physical	Dimensions (L x W x H)	7.6 x 4.02 x 1.62 Inches (193.0 x 102.0 x 41.0 mm) Tolerance ±0.5 mm		
	Weight	970 g		
Safety	Approval	UL / IEC / EN 62368-1		
Parameter	Standards & Level		Performance	
EMI (Note 5)	Conducted	EN55032	Class B	
	Radiated	EN55032	Class B	
EMS	EN 55035			
	ESD	IEC 61000-4-2 Air ± 15KV , Contact ± 8KV	A	
	RS	IEC 61000-4-3 80~1000MHz 3V/m	A	
	EFT/B	IEC 61000-4-4 ± 4KV	A	
	Surge	IEC 61000-4-5 ± 2KV(L-N) , ± 4KV(L/N-PE)	A	
	CS	IEC 61000-4-6 3Vrms	A	
	PFMF	IEC 61000-4-8 1A/m	A	

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth by using a 6” twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
4. Due to varying customer application conditions, the product is tested for maximum operating temperature under full load only. For other regulatory requirements, please contact ARCH.
5. For optimal EMI performance the power supply should be mounted to a grounded aluminium plate (650 x 650 x 3 mm) with electrical contact to the four PCB mounting holes. To comply with safety standards, this plate must be grounded.
6. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
   (ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)
7. Please check the derating curve for more details.

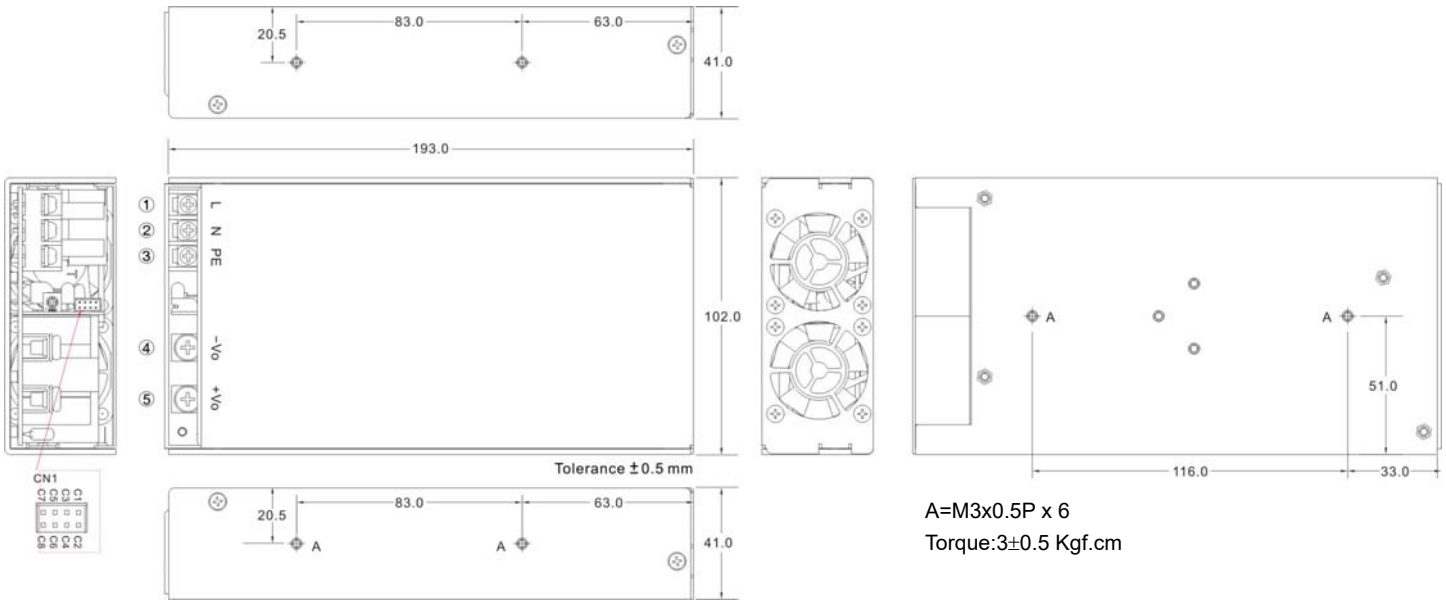
DERATING





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MECHANICAL DIMENSIONS (External View)



A=M3x0.5P x 6
Torque:3±0.5 Kgf.cm

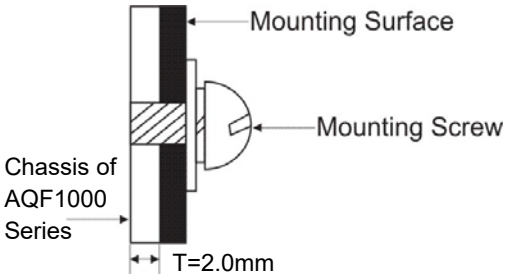
Brands		
PIN#	Single	Terminal
1	AC IN (L)	DINKLE DT-49-B01W-03
2	AC IN (N)	
3,A	PE	
4	-DC OUT	M5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.
5	+DC OUT	

Connector Pin (CN1)

Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
C1	+S	PHD-H20-2X4P	PHD-T20	PHDR-08VS	SPHD-001T-P0.5
C2	-S				
C3	NC				
C4	-5V SB				
C5	GND / -RC				
C6	+RC				
C7	PG				
C8	+5V SB				

ASSEMBLY INSTRUCTIONS

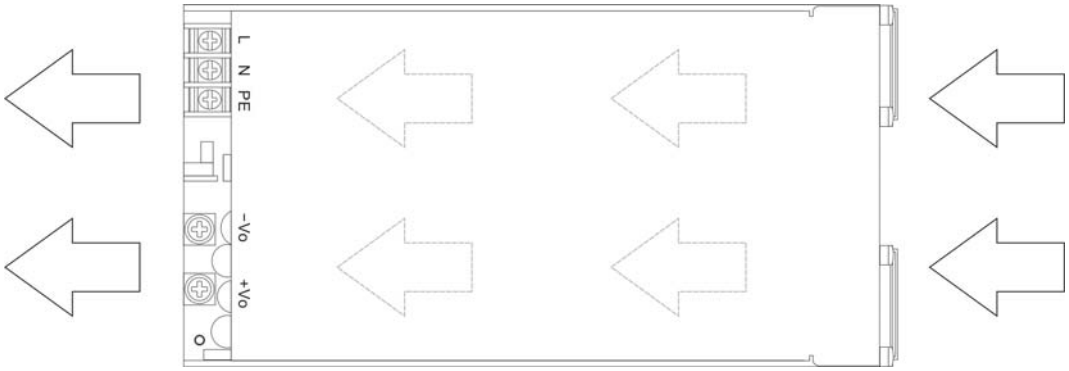
*U Case T=2.0mm
Customer is advised to screw into the threads no more than 2.0mm



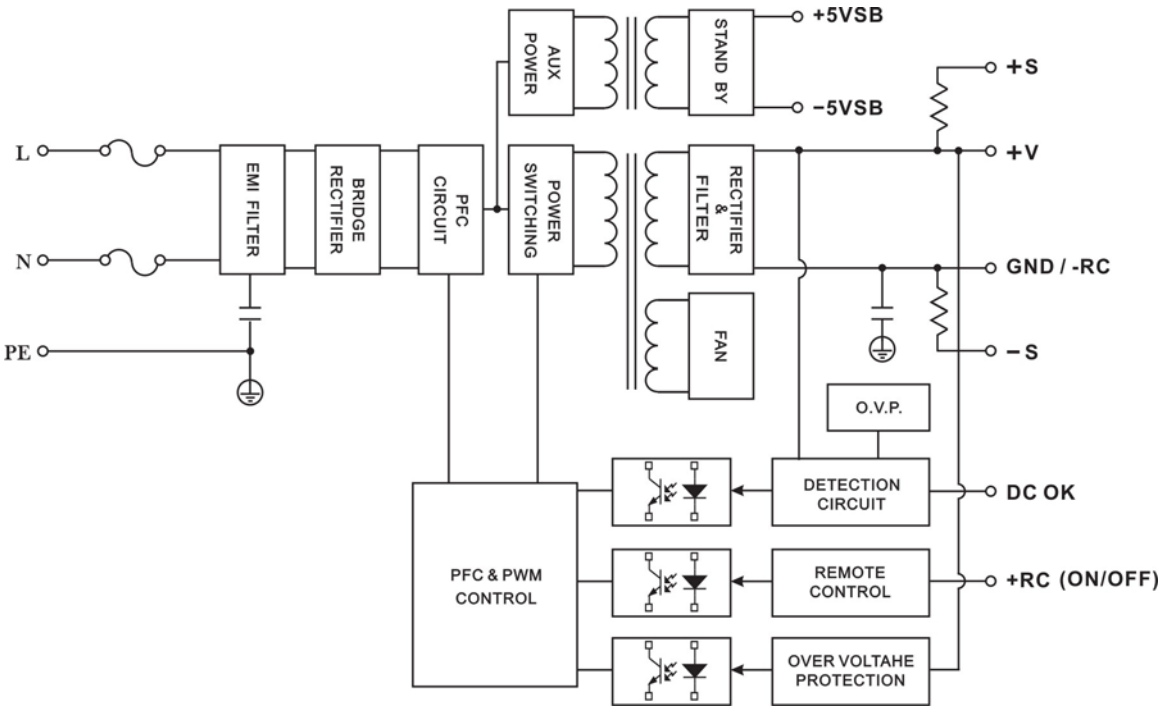
FUNCTION DESCRIPITON of CN1

Pin No.	Function	Description
C1	+S	Remote sensing (+)
C2	-S	Remote sensing (-)
C3	NC	
C4	-5V SB	This pin connects to the negative terminal(-V)
C5	GND / -RC	This pin connects to the negative terminal(-V). Return for DC-OK signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C5 (GND / -RC), Short: Power OFF, Open: Power ON.
C7	+PG	DC-OK Signal is a DC output. (DC-OK)
C8	+5V SB	Stand by voltage output ground 4.4~5.5V, referenced to pin C4 or C5(GND). The maximum load current is 1A.

AIR FLOW DIRECTION



BLOCK DIAGRAM



We reserve the right to make alterations in the product materials and specifications without prior notification and consent to improve reliability, function or design or otherwise.