PRELIMINARY

AC-DC ITE Switching Power Supply

ARF1300E SERIES	1300 Watts

KEY FEATURES

- Universal Input 90-264Vac
- 1300 Watt with 30CFM Forced Air
- 800W with Conduction Cooling
- 650W with Natural Convection
- High Efficiency up to 93%
- Operating Altitude 5000M
- Standby 5V@1A with Fan, @0.4A without Fan
- Active PFC Function
- I/O Isolation 4000VAC
- Safety Approval to UL / IEC / EN 62368-1
- 3-Year Product Warranty

CE c UL us CB

(In Progress)

ELECTRICAL SPECIFICATIONS

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

Model No.			ARF1300E-12S	ARF1300E-24S	ARF1300E-48S
Max Output Wattage (with 30CFM FAN) (W) (Note 6)			1000 W (115 VAC) / 1100 W (230 VAC)	1300 W	
Max Output Wattage (Conduction Cooling) (W) (Note 4,6)			650 W (115 VAC) / 700 W (230 VAC)	650 W (115 VAC) / 800 W (230 VAC)	
Max Output Wattage (Natural Convection) (W) (Note 6)			500 W (115 VAC) / 550 W (230 VAC)	500 W (115 VAC) / 650 W (230 VAC)	
Input	Voltage (Note 6)		90-264 VAC		
	Frequency (Hz)		47-63 Hz		
	Current (Full load)		< 14 A max. (115 VAC) / < 7 A max. (230 VAC)		
	Inrush Current (<2ms) (Clod Start)		< 70 A max. (115 VAC) / < 105 A max. (230 VAC)		
	Leakage Current		< 0.75mA / 264 VAC (Touch Current)		
	Power Factor (at 230 VAC)		PF>0.9 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.)		91.6	54.1	27.1
	Current (Natural Convection) (A) (max.)	at 115 VAC	54.1	27.1	13.5
		at 230 VAC	58.3	33.3	16.6
	Current (Natural Convection) (A) (max.)	at 115 VAC	41.6	20.8	10.4
		at 230 VAC	45.8	27.1	13.5
	Line Regulation (100-264 VAC)		±1%		
	Load Regulation (10-100%) (typ.)		±1%		
	Maximum Capacitive Load		In Progress	In Progress	In Progress
	Ripple & Noise (10-100%) (typ.) (Note 1)		160mV	1% Vout	
	Efficiency (at 230VAC)		90.5%	92%	93%
	Hold-up Time (at 115 VAC) (Note 2)		3ms 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 3)		4000VAC or 5656VDC		
	Input-PE (Note 3)		2000VAC or 2828VDC		
	Output-PE (Note 3)		1500VAC or 2121VDC		

PRELIMINARY

AC-DC ITE Switching Power Supply

ARF1300E SERIES

1300 Watts

ELECTRICAL SPECIFICATIONS

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

| Model No.		ARF1300E-12S	ARF1300E-24S	ARF1300E-48S
Environment	Operating Temperature (Note 6)	-30°C…+70°C (with derating)		
	Storage Temperature	-30°C…+85°C		
	Temperature Coefficient	±0.03%/°C (0~50°C)		
		±0.06%/°C (Other)		
	Altitude During Operation	5000m		
	Humidity	95% RH		
	MTBF	>100,000 h @ 25°C (MIL-HDBK-217F)		
	Vibration	IEC60068-2-27 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)		
	Shock	IEC60068-2-6		
Physical	Dimension (L x W x H)	7.8 x 4.49 x 1.62 Inches (198.0 x 114.0 x 41.0) Tolerance ±0.5 mm		
	Weight	In Progress		
	Cooling Method	Natural Convection / Conduction Cooling / 30CFM FAN		
Safety	Approval	UL / IEC / EN 62368-1 (In Progress)		
EMC	Conducted EMI (Note 5)	EN55032 Class B (In Progress)		
	Radiated EMI (Note 5)	EN55032 Class B (In Progress)		
	EMS	EN55035 (In Progress)		

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. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and ARF1300E series must be firmly mounted at the center of the aluminum plate (Size=650 x 650 x 3.0 mm)

5. For optimal EMI performance the power supply should be mounted to a grounded aluminium plate (750 x 650 x 12 mm) with electrical contact to the four PCB mounting holes. To comply with safety standards, this plate must be grounded.

6. Please check the derating curve for more details.

7. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
   (ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

AC-DC ITE Switching Power Supply

ARF1300E SERIES   **1300 Watts**
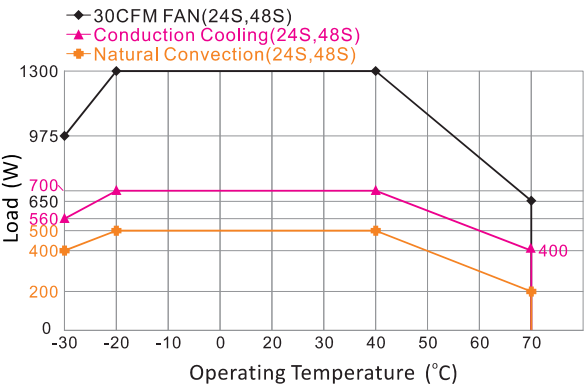
DERATING

Derating Output Load versus Operating Temperature
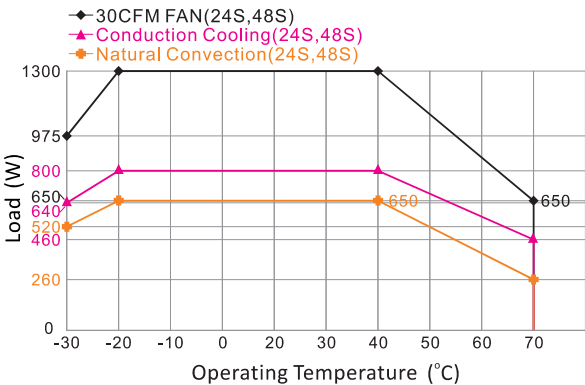ARF1300E-12S at 115-197Vin
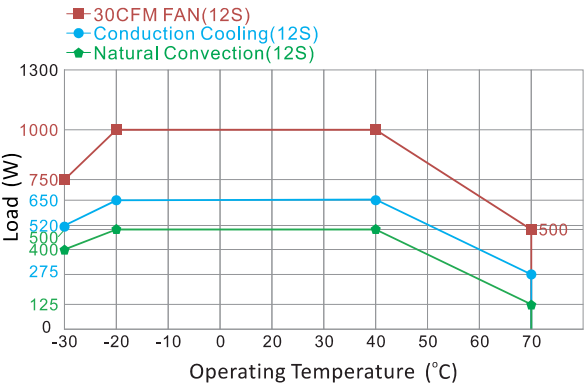
Derating Output Load versus Operating Temperature
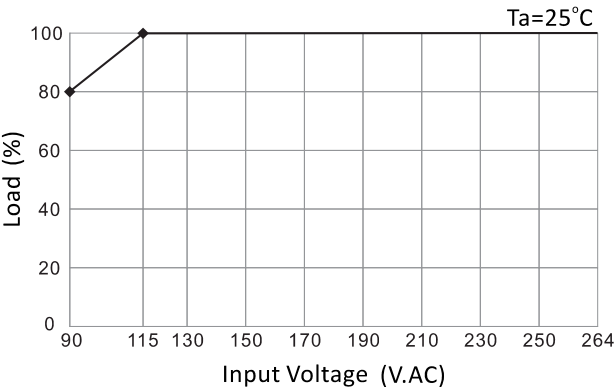ARF1300E-12S at 198-264Vin
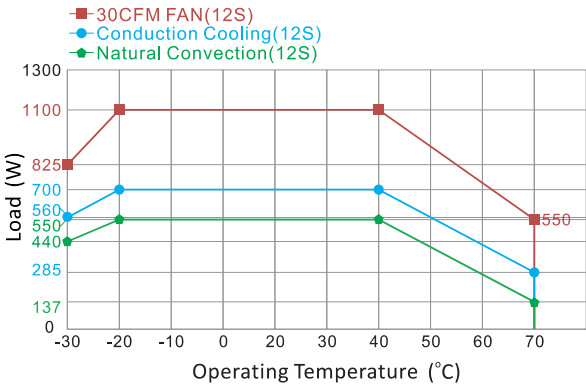
Derating Output Load versus Operating Temperature
ARF1300E-24S,48S at 115-197Vin

Derating Output Load versus Operating Temperature
ARF1300E-24S,48S at 198-264Vin

Derating Load versus Input Voltage

AC-DC ITE Switching Power Supply

ARF1300E SERIES

1300 Watts

MECHANICAL DIMENSIONS   (External View)

A=M4x0.7P x 2
B=M3x0.5P T2.50 x 4
Torque:3±0.5 Kgf.cm

ASSEMBLY INSTRUCTIONS

*U Case   T=2.5mm
Customer is advised to screw into the threads no more than 2.5mm

Mounting Surface
Mounting Screw
Chassis of ARF1300E Series
T=2.5mm

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

Connector Pin (CN1)

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

PRELIMINARY

ARF1300E SERIES   **1300 Watts**

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.

BLOCK DIAGRAM