ARCH ELECTRONICS CORP.

AC-DC ITE Switching Power Supply

ARF240U SERIES 240 Watts

KEY FEATURES

- Universal Input 90-264Vac
- 240W with Natural Convection
- High Efficiency up to 94%
- Safety Approval to UL / IEC / EN 62368-1
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- No Load Input Power Consumption<0.5W
- -30°C to +80°C Wide Range Operation Temperature
- Operating Altitude 5000M
- Active PFC Function
- I/O Isolation 4000VAC
- 3-Year Product Warranty

Standard	A Type
	
	

(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.			ARF240U-12S	ARF240U-24S	ARF240U-48S
Max Output Wattage (Conduction Cooling) (W)		(Note 6)	240 W		
Max Output Wattage (Natural Convection) (W)			210 W (100 VAC) / 234 W (230 VAC)	215 W (100 VAC) / 240 W (230 VAC)	
Input	Voltage	(Note 3)	90-264 VAC		
	Frequency (Hz)		47-63 Hz		
	Current (Full load)		< 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC)		
	Inrush Current (<2ms)		< 45 A max. (115 VAC) / < 90 A max. (230 VAC)		
	Power Factor		PF>0.9 at Full Load		
	No Load		< 0.5W (115 / 230 VAC)		
Output	Voltage (V.DC.)		12V	24V	48V
	Voltage Adj Range (V.DC.)		±4% Output Voltage		
	Voltage Accuracy		±2%		
	Current (Conduction Cooling) (A) (max.)		20	10	5
	Current (Natural Convection) (A) (max.)	at 100 VAC	17.5	8.96	4.48
		at 230 VAC	19.5	10	5
	Line Regulation		±1%		
	Load Regulation (0-100%)		±1%		
	Minimum Load		0%		
	Maximum Capacitive Load		8000μF	3000μF	470μF
	Ripple & Noise (max.)	(Note 1)	1% Vout		
	Efficiency (at 230VAC)	(Note 5)	92.5%	93%	94%
	Hold-up Time (at 115 VAC)	(Note 2)	10 ms min.		
Protection	Over Power Protection		Auto recovery, Hiccup mode		
	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 4)	4000VAC or 5656VDC		
	Input-PE	(Note 4)	2000VAC or 2828VDC		
	Output-PE	(Note 4)	1500VAC or 2121VDC		

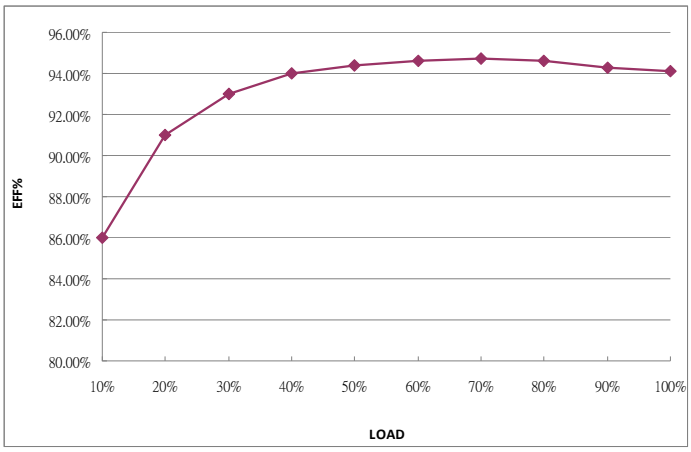
ELECTRICAL SPECIFICATIONS

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

Model No.		ARF240U-12S	ARF240U-24S	ARF240U-48S
Environment	Operating Temperature	-30°C…+80°C (with derating)		
	Storage Temperature	-30°C…+80°C		
	Temperature Coefficient	±0.05%/°C		
	Altitude During Operation	5000m		
	Humidity	20~90% RH		
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)		
	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)	4.1 x 2.44 x 1.54 Inches (104.0 x 62.0 x 39.2 mm) Tolerance ±0.5 mm		
	Weight	In Progress		
	Cooling Method	Natural Convection / Conduction Cooling		
Safety	Approval	UL / IEC / EN 62368 (In Progress)		
EMC	Conducted EMI (Note 7)	EN55032 Class B (In Progress)		
	Radiated EMI (Note 7)	EN55032 Class I Class B / Class II Class A (In Progress)		
	EMS	EN55035 (In Progress)		

NOTE

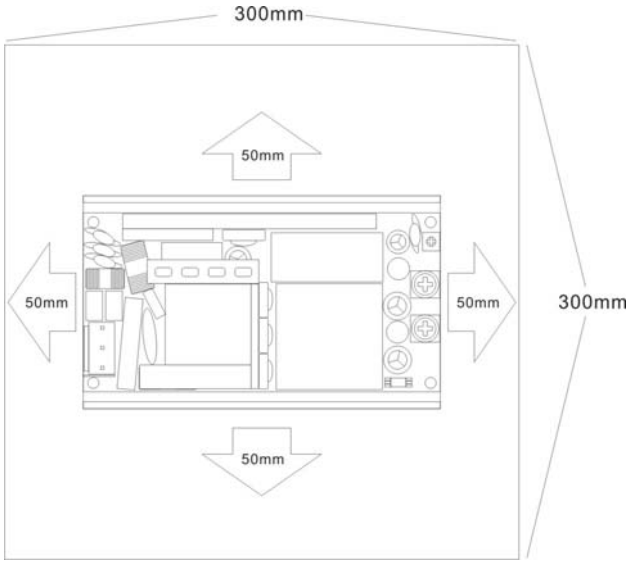
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors within Arch power supply.
5. Vin at 230 VAC & 48 Vout



(After 30 minutes of burn-in)

NOTE

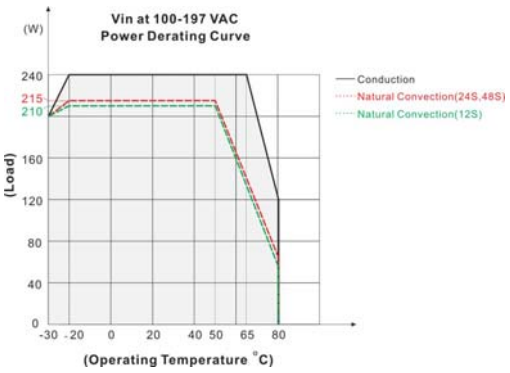
6. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even andsmooth surface (or coated with thermal grease), and ARF240 series must be firmly mounted at the center of the aluminum plate.
300 x 300 x 3.0 mm

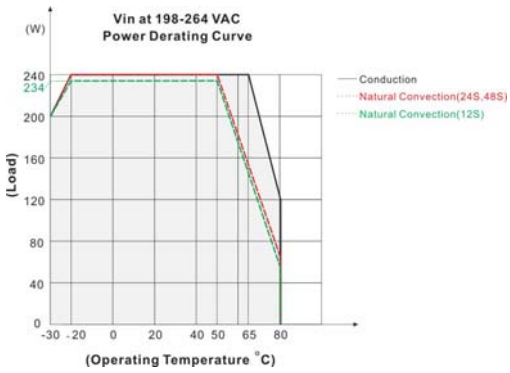


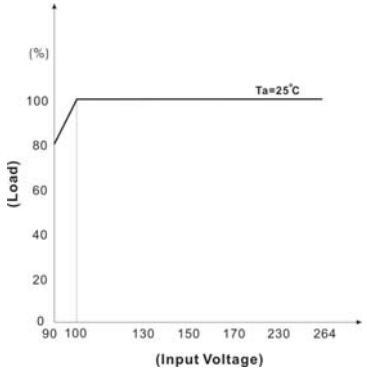
7. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment

8. **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

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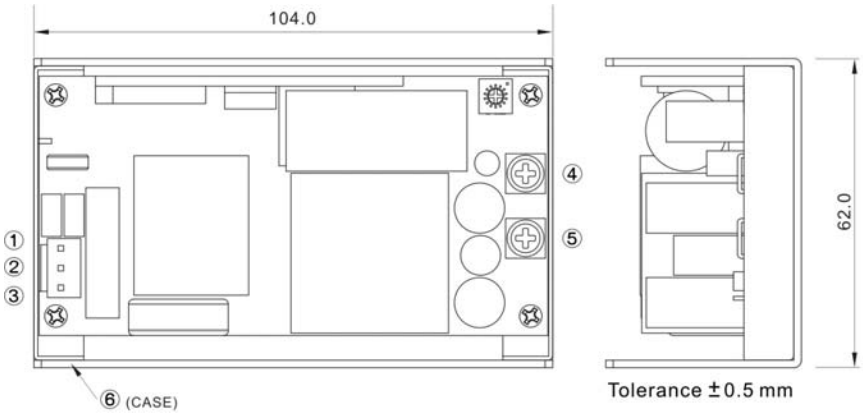
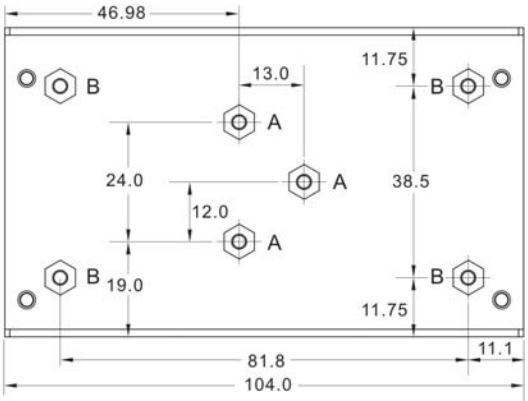
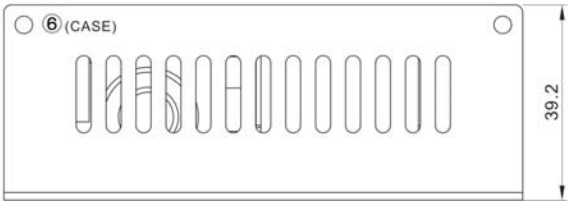
MECHANICAL DIMENSION (Top View)

Standard







A=Screw hole can only apply M3 x 4mm screws, and limit to assemble with din rail clip only
A=M3x0.5P
B=For fixture to pcb/chassis only
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
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	M3.5 Pan HD screw in 2 positions	
5	-DC OUT	Torque to 8 lbs-in(90 cNm) max.	
Others			
6	PE		

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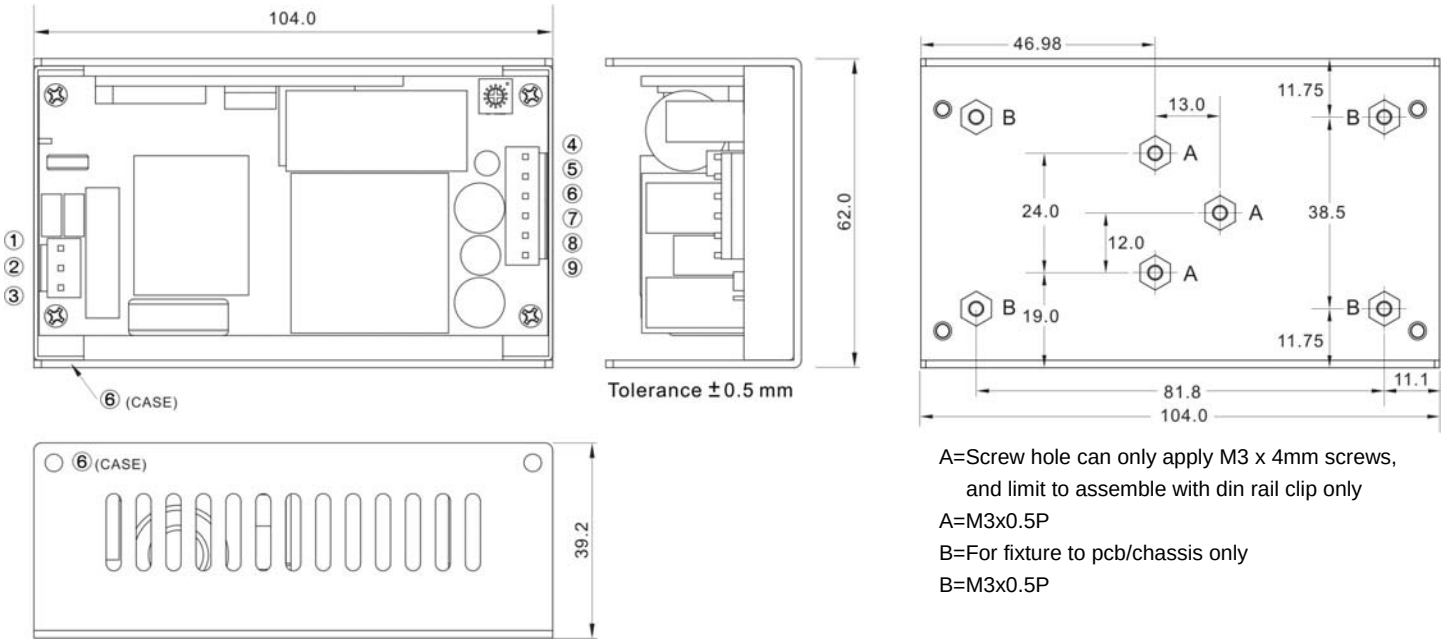
MECHANICAL DIMENSION (Top View)

A Type



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2	NO PIN		
3	AC IN (L)		
DC Output Connector Pin : Alex 9397-6			
4~6	+DC OUT	Alex 9396-6 or equivalent	Alex 96T Series or equivalent
7~9	-DC OUT		
Others			
10	PE