ARCH ELECTRONICS CORP.

AC-DC ITE Switching Power Supply

ARF240U SERIES 240 Watts

KEY FEATURES

- Universal Input 90-264Vac
- 240 Watt with 8CFM Forced Air and Natural Convection
- High Efficiency up to 94%
- No Load Power Consumption<0.5W
- Over-Voltage Category OVC III
- -40°C to +80°C Wide Range Operation Temperature
- Operating Altitude 5000M (OVC II)
- Active PFC Function
- I/O Isolation 4250VAC
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- Safety Approval to UL / IEC / EN 62368-1
- 3-Year Product Warranty

Standard	A Type
	
	

Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

E199779

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 (with 8CFM FAN) (W)			240 W		
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)		
	Leakage Current		< 0.75mA / 264 VAC (Touch Current)		
	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.)		±5% Output Voltage		
	Voltage Accuracy		±2%		
	Current (with 8CFM FAN) (A) (max.)		20	10	5
	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(110-210%), Hiccup mode		
	Over Voltage Protection		Auto recovery		
	Over 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)	4250VAC or 6000VDC		
	Input-PE	(Note 4)	2830VAC or 4000VDC		
	Output-PE	(Note 4)	1500VAC or 2121VDC		

ELECTRICAL SPECIFICATIONS

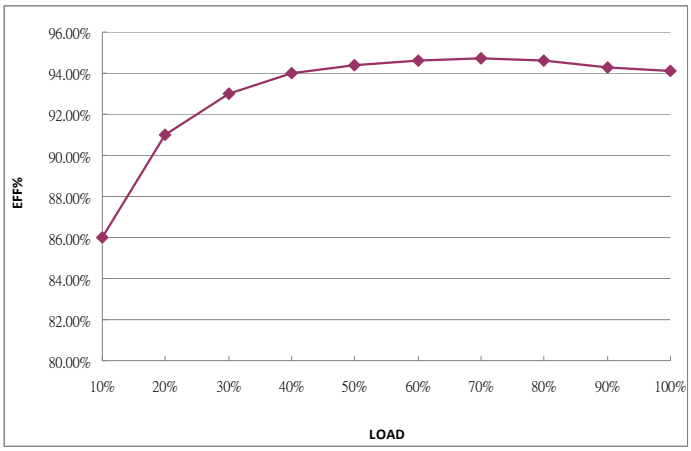
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		ARF240U-12S	ARF240U-24S	ARF240U-48S
Environment	Operating Temperature (Note 9)	-40°C…+80°C (with derating)		
	Storage Temperature	-40°C…+80°C		
	Temperature Coefficient	±0.05%/°C		
	Altitude During Operation	5000m (OVC II), 4000m (OVC III)		
	Humidity	20~90% RH		
	MTBF	>400,000 h @ 25°C (MIL-HDBK-217F, Notice 1)		
	Vibration	IEC60068-2-6 (10~500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes)		
	Shock	IEC60068-2-27 (Acceleration:75G ; pulse duration:11ms ; Filter:500Hz)		
Physical	Dimensions (L x W x H)	4.1 x 2.46 x 1.54 Inches (104.0 x 62.5 x 39.2 mm) Tolerance ±0.5 mm		
	Weight	350 g		
	Cooling Method	Natural Convection / Conduction Cooling / 8CFM FAN		
Safety	Approval	UL / IEC / EN 62368-1		
Parameter	Standards & Level	Performance		
EMI	Conducted (Note 7)	EN55032	Class B	
	Radiated (Note 7)	EN55032	Class I Class B / Class II Class A	
Harmonic	Harmonic currents	EN61000-3-2 (Full Load)	Class A	
EMS	EN 55035		A	
	ESD	IEC 61000-4-2 Air ± 15KV , Contact ± 8KV	A	
	RS	IEC 61000-4-3 3V/m	A	
	EFT/B	IEC 61000-4-4 ± 2KV , ± 4KV(L/N-PE)	A	
	Surge	IEC 61000-4-5 ± 2KV , ± 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 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 from Arch power supply.
5.

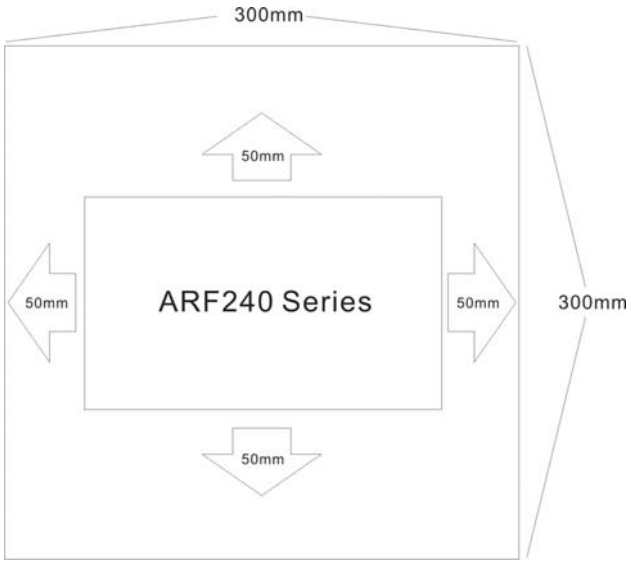
Vin at 230 VAC & 48 Vout



(After 30 minutes of burn-in)

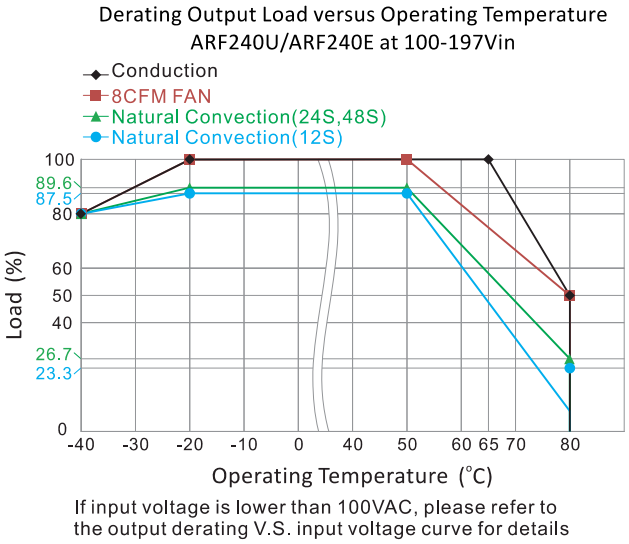
NOTE

6. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth 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

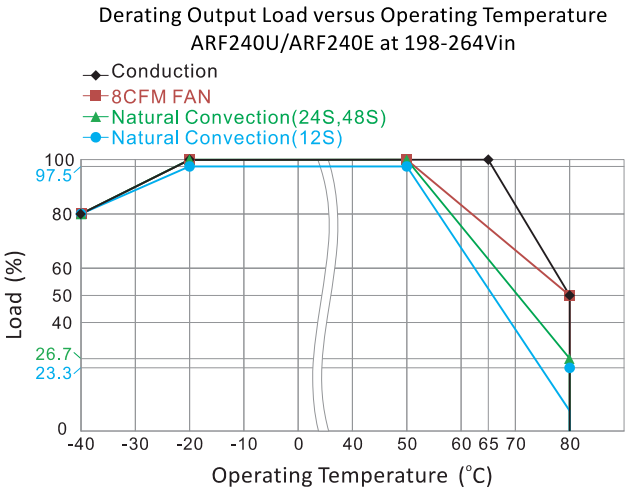


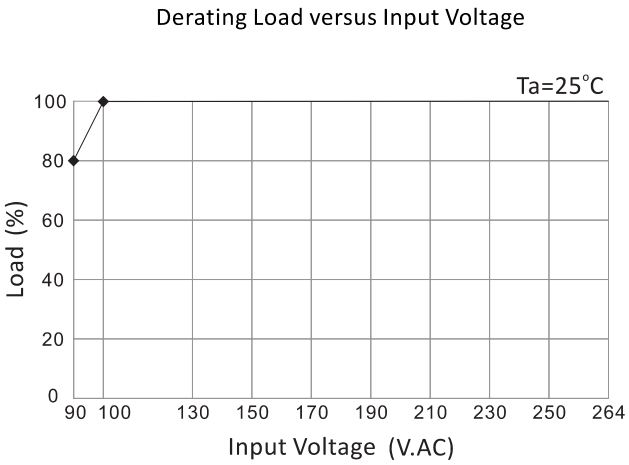
7. Considering that most casings of the system equipment are made of metal.The EMI test of the power supply is installed on the aluminum plate (600 x 450 x 3.0 mm) to simulate the end-product application.
8. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment
9. 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.
10. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
    (ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

DERATING



If input voltage is lower than 100VAC, please refer to the output derating V.S. input voltage curve for details

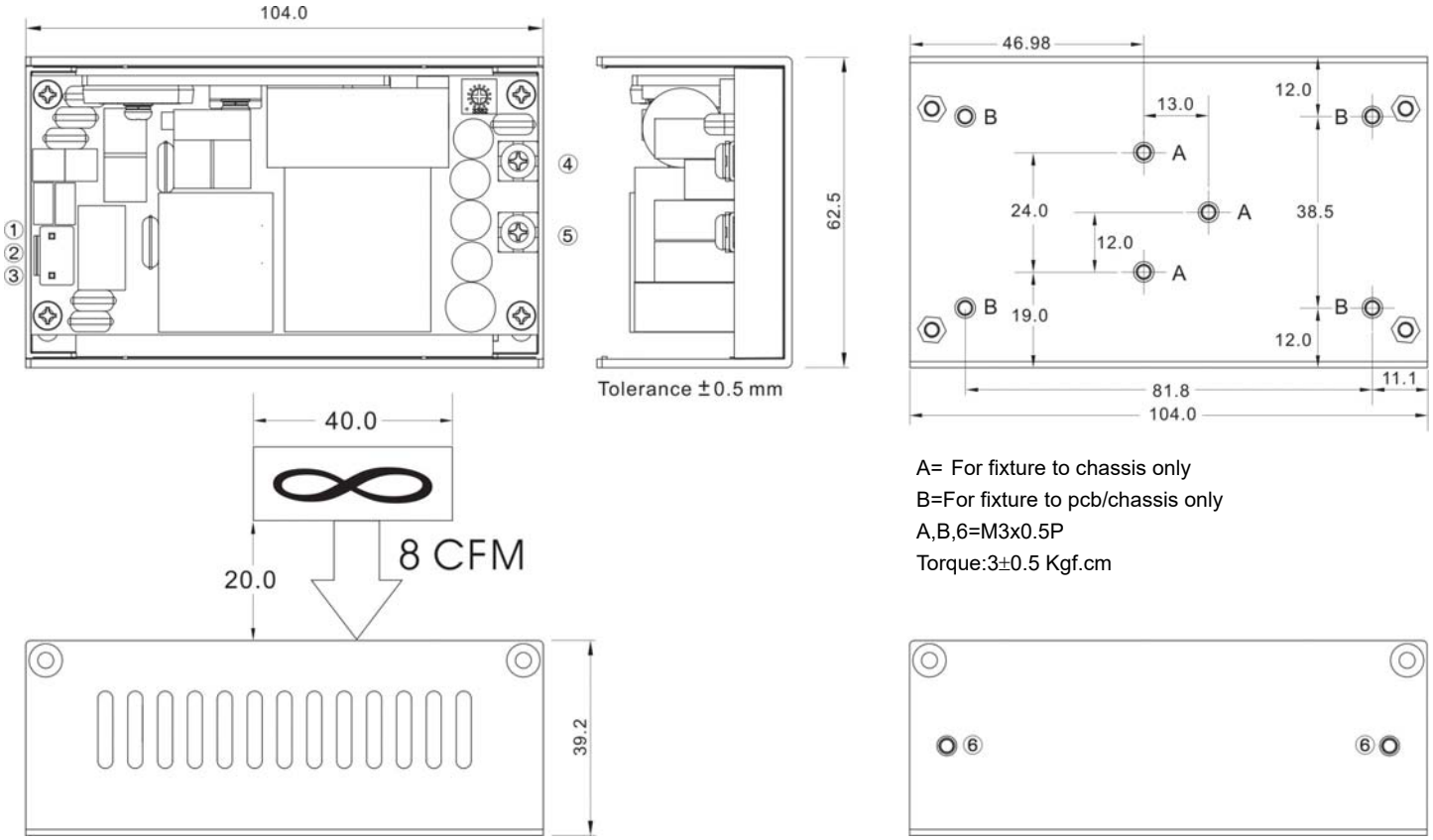




ARF240U SERIES 240 Watts

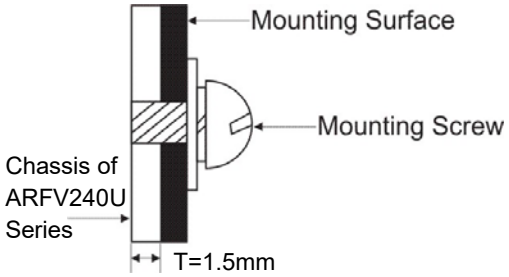
MECHANICAL DIMENSIONS (Top View)

Standard



A= For fixture to chassis only
B=For fixture to pcb/chassis only
A,B,6=M3x0.5P
Torque:3±0.5 Kgf.cm

ASSEMBLY INSTRUCTIONS
*U Case T=1.5mm
Customer is advised to screw into the threads no more than 1.5mm



Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4	+DC OUT	Terminal : M3.5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.			
5	-DC OUT				
6,B	PE	—	—	—	—

Standard

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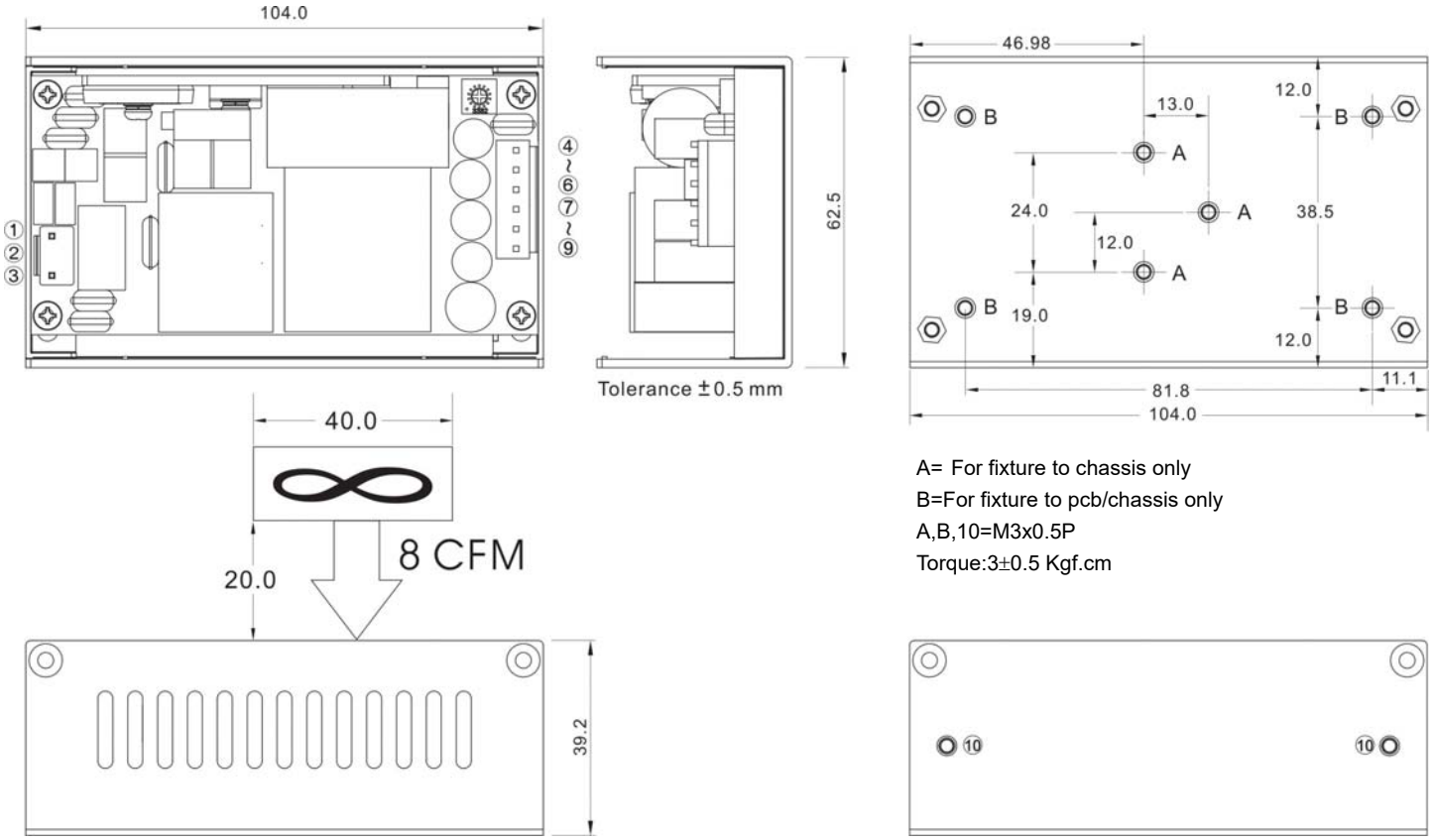
MECHANICAL DIMENSIONS (Top View)

A Type



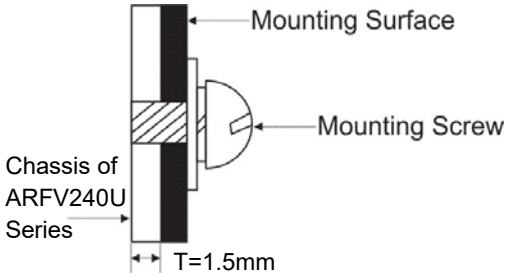
A= For fixture to chassis only
B=For fixture to pcb/chassis only
A,B,10=M3x0.5P
Torque:3±0.5 Kgf.cm

Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4~6	+DC OUT	9396-6	96T series	VHR-6N	SVH-41T-P1.1
7~9	-DC OUT				
10,B	PE	—	—	—	—

ASSEMBLY INSTRUCTIONS

*U Case T=1.5mm

Customer is advised to screw into the threads no more than 1.5mm



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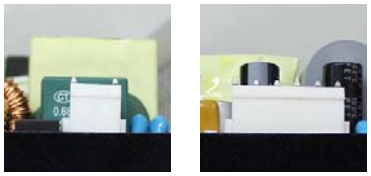

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