



**Elpac Power Systems™**  
Higher Efficiency, Higher Power Density, Uncompromised Reliability



## TECHNICAL SUPPORT

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## ENERGY STAR PARTNER

As a Global Supplier of Power Supplies, we are committed to meeting energy efficiency standards around the world. That is why we have partnered with the ENERGY STAR® Program and engineer our Elpac Power Systems™ to meet strict energy-efficiency guidelines established by the EPA and the US Department of Energy (DOE). The Energy Star program has developed International partnerships with countries and organizations in major global markets. Those participating in the program include Australia, Canada, European Union, European Free Trade Association, Japan, New Zealand, and Taiwan.

Furthering our International commitment, we have signed the EU Code of Conduct on Efficiency of External Power Supplies. Our Elpac Power Systems™ FWA065 series meets the efficiency standards of the International ENERGY STAR® program and the EU Code of Conduct.



**5-YEAR LIMITED WARRANTY\***

- High Efficiency
- High Power Density 4.9W/in<sup>3</sup>
- Lifetime Expectation >5 years
- Hold-up Time >25ms at full load
- Safety Approval - EN60950-1 Class I
- ENERGY STAR Level V
- EISA Compliant
- CEC Compliant

Input	
Input Voltage	85 – 264VAC 100 – 240VAC Nominal
Input Frequency	47 – 63Hz
Input Current	<1.5A rms
Inrush Current	<37A at 230VAC cold start
Zero Load Power Consumption	<0.5W
Touch Current / Leakage Current	<80µA @ 132VAC @ 60Hz
	<100µA @ 264VAC @ 60Hz

Output	
Output Voltage	See Table
Total Regulation	+/-5%
Minimum Load	No minimum load required
Start-Up Delay	<750ms
Hold-Up Time	>25ms at any input voltage
Ripple & Noise	<1% pk-pk **
Over Voltage Protection	110 – 135%
Over Temperature Protection	Active - Recoverable; plus Passive - Non Recoverable
Over Current Protection	120 – 180%
Short Circuit Protection	Shutdown, auto-restart (hiccup mode)

Notes

\*visit [www.iccus.com](http://www.iccus.com) for complete details

\*\*Ripple and noise measured with 20MHz bandwidth; 10µF tantalum capacitor in parallel with a 0.1µF ceramic capacitor.





Model Number <sup>1</sup>	Output Voltage	Output Current	Peak Current <sup>2</sup>	Total Regulation <sup>3</sup>	Typical Efficiency <sup>4</sup>
FWA065009A-11B	9.0V	8.0A	9.6A	±5%	85%
FWA065012A-11B	12.0V	6.0A	7.2A	±5%	88%
FWA065015A-11B	15.0V	4.8A	5.7A	±5%	89%
FWA065024A-11B	24.0V	3.0A	3.6A	±5%	91%

Notes

- 1) All models ship standard with US version input cable.
- 2) Maximum peak load (86W) lasting 500ms with a maximum 10% duty cycle.
- 3) Includes initial setting, line regulation, load regulation, and thermal drift.
- 4) Typical at 115VAC (including output cable).

General	
Energy Star Efficiency	Avg. Efficiency 88.2% @ 115VAC; 89.7% @ 230VAC
MTBF	min. 200,000 hours demonstrated
Size	5.02" (127.6mm) x 2.20" (55.9mm) x 1.37" (34.8mm)
Weight	1.3 lbs (0.58 kg)
Power Density	4.9W/in <sup>3</sup>

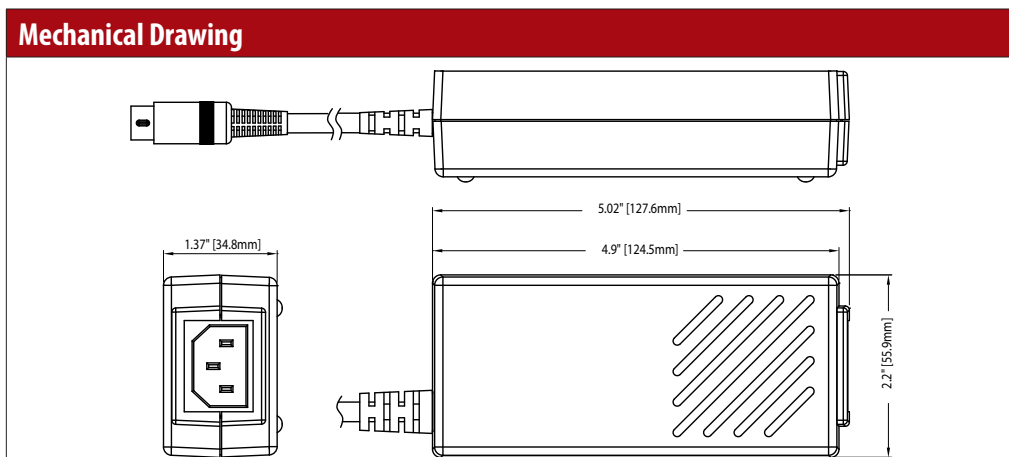
Environmental	
Operating Temperature	0 – 60°C (Full load to 40°C, derate linearly to 50% load at 60°C)
Storage Temperature	-40°C to +85°C
Relative Humidity	5-95%, non-condensing
Cooling	Natural Convection
Vibration	All units production tested to 19.6m/s <sup>2</sup>

EMC & Safety	
Emissions	FCC class B, CISPR22 class B EN61000-3-2, -3
Immunity	EN61000-4-2, -3, -4, -5, -6, -8, -11
Certified by TUV to the following:	cTUVus
	UL 60950-1
	CAN/CSA-22.2 No.60950-1
	CB per IEC60950-1
	CE marked to LVD and EMC

Input Configuration	
Standard Input Cable	6 ft cable with US standard (Nema 5-15) 3 prong connector
Connection on Power Supply Body	IEC 320 C14 Receptacle

Output Configuration	
Standard Output Cable	4 ft for 9V 6ft for 12V, 18V & 24V
Connector (PSU side)	Switchcraft DIN-5, P/N 05GM5M (male pins)
Mating Connector	Switchcraft 57GB5F or equivalent

Output Pin Assignments		
Pin 1	Return	
Pin 2	Return	
Pin 3	+V1	
Pin 4	Return	
Pin 5	+V1	



Ordering Options Available (Contact Factory)
Without input cable
Floating Output