



### TECHNICAL SUPPORT

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## Elpac Power Systems™

HIGHER EFFICIENCY, HIGHER POWER DENSITY, UNCOMPROMISED RELIABILITY



5-YEAR LIMITED WARRANTY\*

- High Efficiency
- Wide Range AC Input
- Fully Regulated DC Output
- Lifetime Expectation >5 years
- Hold-up Time >16ms at full load
- Output Floating
- Safety Approval - EN60601-1 Class I
- RoHs Compliant

Input	
Input Voltage	85 – 264VAC 100 – 240VAC Nominal
Input Frequency	47 – 63Hz
Input Current	<1.0A rms
Inrush Current	<37A @230VAC Cold Start
Zero Load Power Consumption	<0.5W
Earth Leakage Current	<50µA @ 132VAC @ 60Hz
	<75µA @ 264VAC @ 60Hz

Output	
Output Voltage	See Table
Total Regulation	+/-5%
Minimum Load	No minimum load required
Start-Up Delay	<150ms
Hold-Up Time	>16ms
Ripple & Noise	<1% pk-pk **
Over Voltage Protection	130 – 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	Output Voltage	Output Current	Total Regulation <sup>2</sup>	Typical Efficiency <sup>3</sup>
MS4009F	9.0V	4.40A	±5%	84%
MS4012F	12.0V	3.30A	±5%	86%
MS4015F	15.0V	2.70A	±5%	87%
MS4018F	18.0V	2.20A	±5%	86%
MS4024F	24.0V	1.67A	±5%	88%

Notes

- 1) Maximum peak load (48W) lasting 500ms with a maximum 10% duty cycle.
- 2) Includes initial setting, line regulation, load regulation, and thermal drift.
- 3) Typical at 115VAC

General	
Efficiency	Avg Efficiency 87.3% @ 115VAC; 86.9% @ 230VAC
MTBF	min. 200,000 hours demonstrated
Size	3.0"(76.2mm) x 5.0"(127.0mm) x 1.1"(27.5mm)
Weight	0.40 lbs (0.18 kg)
Power Density	2.9W/in <sup>3</sup>

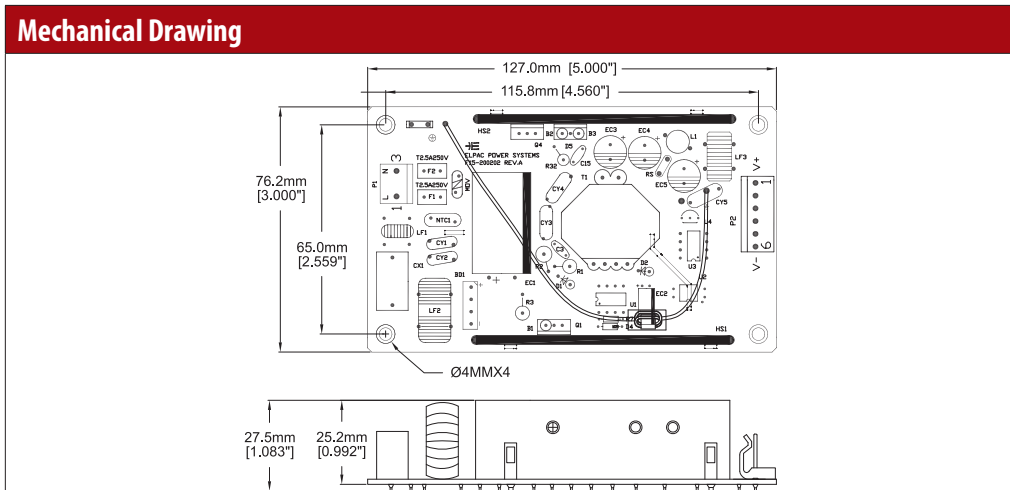
Environmental	
Operating Temperature	0 – 50°C (Full load to 50°C, derate linearly to 50% load at 70°C)
Storage Temperature	-40°C to +85°
Relative Humidity	5-95%, non-condensing
Cooling	Natural Convection
Vibration	All units production tested to 19.6m/s <sup>2</sup>

EMC & Safety	
Emissions	?
Immunity	EN60601-1-2??
Certified by UL to the following:	cURus
	UL 60601-1
	CSA c22.2 No.601.1-M90
	CB per IEC 60601-1
	CE marked to LVD

Input Configuration	
Connector (P1)	Molex p/n 09-65-2038 or equivalent
Mating Connector	Molex p/n 09-50-1031 or equivalent
GND	0.25" Faston Tab

Output Configuration	
Connector (P2)	Molex p/n 09-65-2068 or equivalent
Mating Connector	Molex p/n 09-50-1061 or equivalent
Mating Connector Contacts	AMP p/n 3-770476-1 or equivalent

Output Pin Assignments (CN2)	
Pin 1	+V1
Pin 2	+V1
Pin 3	+V1
Pin 4	Com
Pin 5	Com
Pin 6	Com



Input Pin Assignments (P1)	
Pin 1	AC Line
Pin 2	<not assembled>
Pin 3	AC Neutral

**Ordering Options Available (Contact Factory)**

Grounded output