

### 90 Watts

- Energy Efficiency Level VI
- Medical and ITE Safety Approvals
- 4th Edition Medical EMC
- Class I and Class II Versions
- <0.21 W Standby Power
- 0 °C to 60 °C Operation
- Low Earth Leakage Current
- 3 Year Warranty



#### Dimensions:

##### AJM90:

5.51 x 2.8 x 0.87" (140.0 x 71.0 x 22.0 mm)

### Models & Ratings

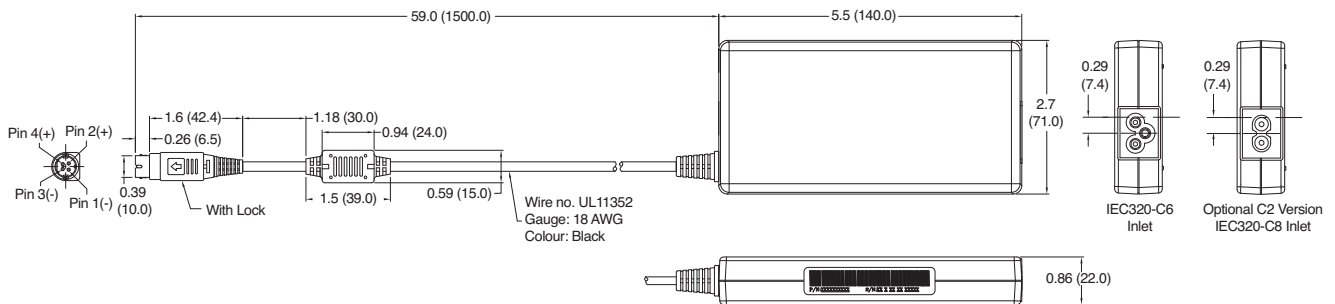
Output Power	Output Voltage	Output Current	Total Regulation	Efficiency <sup>(1)</sup>	Model Number <sup>(2)</sup>
90 W	12.0 V	7.50 A	±5%	88%	AJM90PS12
	18.0 V	5.00 A		89%	AJM90PS18
	19.0 V	4.74 A		90%	AJM90PS19
	24.0 V	3.75 A		90%	AJM90PS24

### Notes

1. Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 230 VAC input.

2. For class II versions, add suffix 'C2' to the end of the part number e.g. AJM90US24C2. Class II versions do not have ITE approvals.

### Mechanical Details



### Pin Connector

Pin	Function
1	Return
2	Output +
3	Return
4	Output +
Shell	Return

### Notes

1. All dimensions shown in inches (mm). Tolerance is 0.02 (0.5) maximum, except output cable length.
2. Output connector: Locking Power Mini DIN, mates with Kycon KPJ-4S or equivalent.

3. Weight: 0.77 lbs (350 g) approx.
4. For European mains lead order part EU-MAINS-5 or EU-MAINS-8 for C2 versions.
5. For UK mains lead order part UK-MAINS-5 or UK-MAINS-8 for C2 versions.
6. For US mains lead order part US-MAINS-5 or US-MAINS-8 for C2 versions.

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	80		264	VAC	Derate output power below 90 VAC to 90% at 85 VAC and 85% at 80 VAC
Input Frequency	47		63	Hz	
Input Current		1.5/0.6		A	Measured at 115/230 VAC
Inrush Current			60/100	A	115/230 VAC, cold start at 25 °C
Power Factor		0.9			EN61000-3-2 Class A
Earth Leakage Current		220	250	µA	264 VAC, 60 Hz
No Load Input Power			0.21	W	
Input Protection	T3.15A/250 VAC internal fuse in both line				

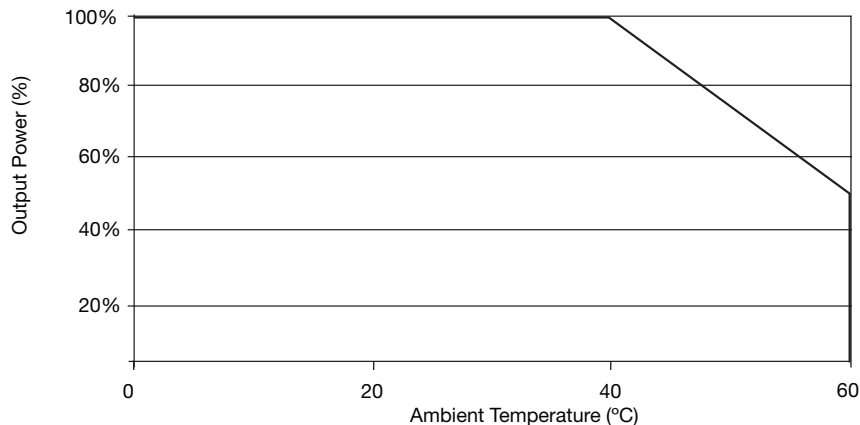
### Output

Characteristic	Min.	Typ.	Max.	Units	Notes & Conditions
Output Voltage	12		48	VDC	See Models and Ratings table
Initial Set Accuracy			±2	%	At 50% load
Minimum Load					No minimum load required
Start Up Delay			3	s	
Start Up Rise Time			50	ms	
Hold Up Time	10			ms	Full load and 115 VAC
Line Regulation			±0.5	%	
Total Regulation			±5	%	
Transient Response			4	%	Maximum deviation, recovering to less than 1% within 500 µs for 25% step load
Ripple and Noise			1	% pk-pk	150 mV pk-pk for 12 V model, measured with 20 MHz bandwidth and 10 µF electrolytic in parallel with 0.1 µF ceramic capacitor.
Overshoot			5	%	At turn on / turn off
Overload Protection	115		175	%	
Overvoltage Protection	112		150	%	Recycle mains to reset
Short Circuit Protection	Trip and restart (hiccup), auto resetting				
Thermal Protection	Measured internally, recycle AC to reset				
Temperature Coefficient		0.04		%/°C	
Patent Leakage Current			100	µ A	264 VAC, 60 Hz

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+60	°C	Derate from 100% load at 40 °C to 50% load at 60 °C
Cooling	Natural convection				
Operating Humidity	5		90	%RH	Non-condensing
Storage Temperature	-40		+85	°C	
Operating Altitude			5000	m	
Shock	IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 2 g 10 mins/sweep, 60 mins for each of 3 axes				

### Derating Curve

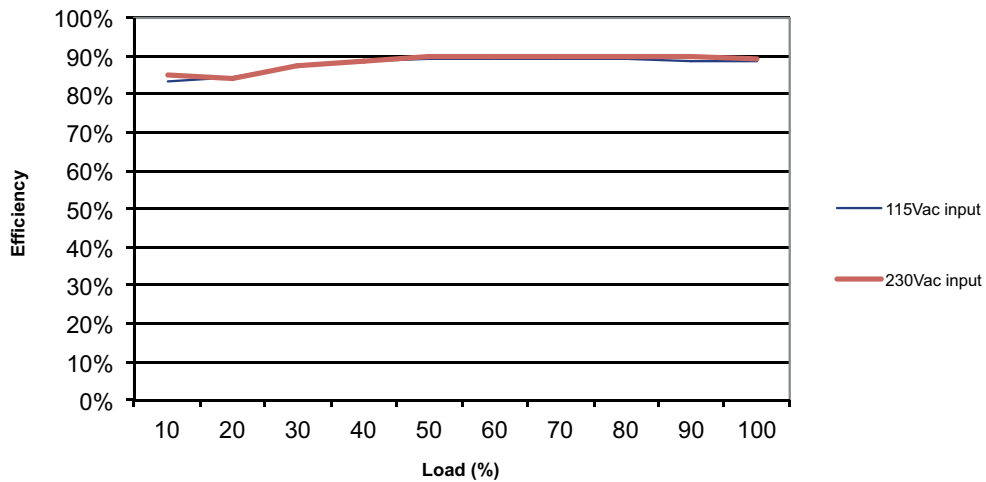


### General

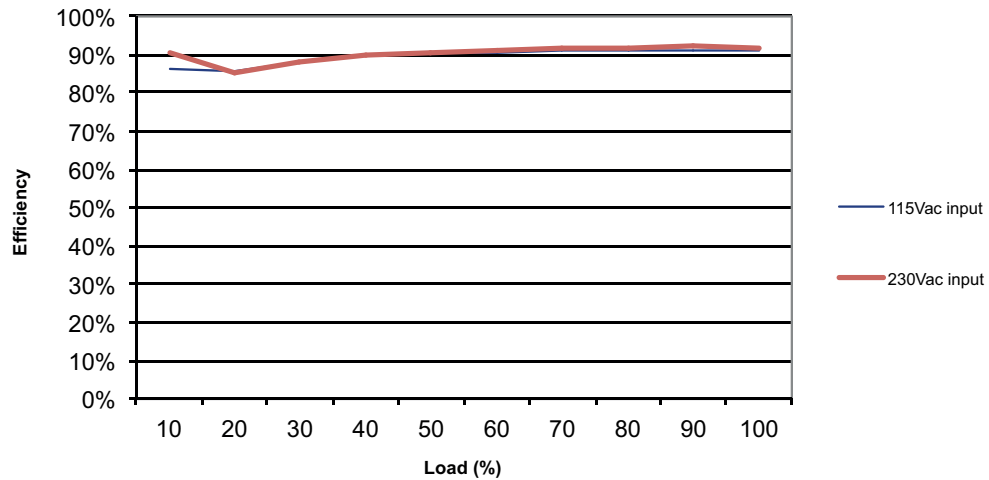
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		90		%	See Models and Ratings table and curves.
Isolation: Input to Output Input to Ground Output to Ground			4000	VAC	2 x MOPP
			1500	VAC	1 x MOPP (Class I versions only)
			1500	VAC	1 x MOPP (Class I versions only)
Switching Frequency		105/100		kHz	PFC/Main Converter
Power Density		4.55		W/in <sup>3</sup>	
Mean Time Between Failure		>100		kHrs	MIL-HDBK-217F at 25 °C GB
Weight		0.77 (350)		lb (g)	

### Efficiency Curves

#### AJM90PS12



#### AJM90PS24



### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Emissions	EN55011	Level B	Conducted & Radiated
Harmonic Current	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

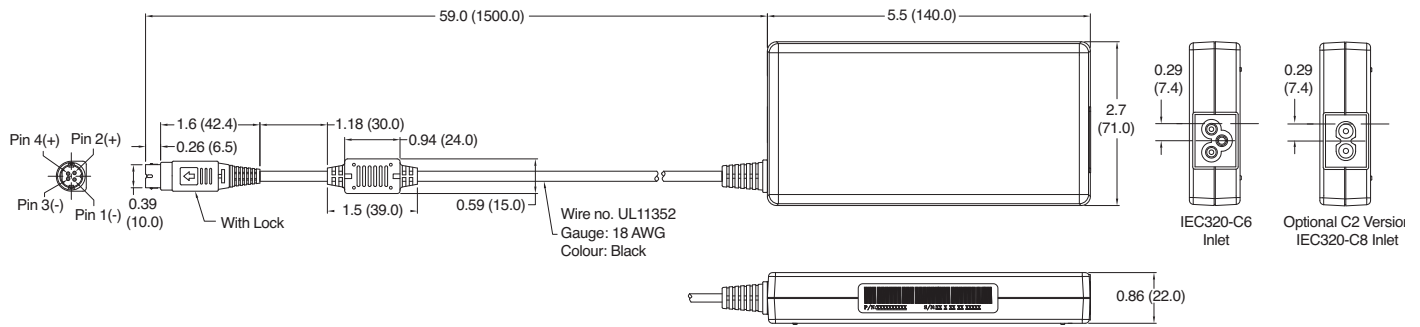
### EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	±15 kV Air, ±8 kV contact	A	
Radiated	EN61000-4-3	10 V/m	A	Class I is 3 V/m, Class II is 10 V/m 80-2700 MHz. IEC60601-1-2 Ed.4 at other frequencies
EFT/Burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	6 V	A	
Magnetic Fields	EN61000-4-8	30 A/m	A	
Dips and Interruptions	EN61000-4-11	Dip: 30% 500 ms	A/B	High Line/Low Line
		Dip: 60% 200 ms	A/B	High Line/Low Line
		Int: 100% 5000 ms	B	
	EN60601-1-2	Dip: 30% 500 ms	A/B	High Line/Low Line
		Dip: 60% 100 ms	A/B	High Line/Low Line
		Int: 100% 5000 ms	B	
		Int: 100% 10 ms	A	

### Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	ANSI/AAMI ES 60601-1	Medical
CSA	CSA C22.2 No. 60601	
TUV	EN60601-1	
CB	IEC60601-1	
UL	UL60950-1	ITE, on class I version only
TUV	EN60950-1	
CB	IEC60950-1	

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