

# AC-DC Medical Power Module PAAM60 Series

**Features:**

- PCB Mountable Switching Power Module
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC
- Regulated Output and Low Ripple and Low Noise
- <0.3W No Load Input Power
- Isolation Class II
- CE, CB, UL, cUL Approvals
- 3-Year Product Warranty



**Description:**

The PAAM60 series of encapsulated, single output, through-hole AC/DC modules is specially designed for use in medical applications. This power dense 2.5" x 3.5" platform offers up to 60W of continuous throughput across a wide range of operating temperatures whilst maintaining low emissions and high efficiency.

Model Number <sup>1</sup>	Max Output Wattage	Output Voltage	Output Current (mA) max	Output Line Regulation	Output Load Regulation	Ripple & Noise (mVp-p)	Max Capacitive Load (µF)	Average Efficiency @ 115VAC
PAAM60-10	51W	5.1V	10,000	±0.5%	±1.5%	100	10,000	86%
PAAM60-11	60W	9V	6,666	±0.5%	±1.5%	100	5,000	87%
PAAM60-12	60W	12V	5,000	±0.5%	±1%	120	5,000	88%
PAAM60-13	60W	15V	4,000	±0.5%	±1%	150	4,000	86%
PAAM60-14	60W	24V	2,500	±0.5%	±1%	240	2,000	87%

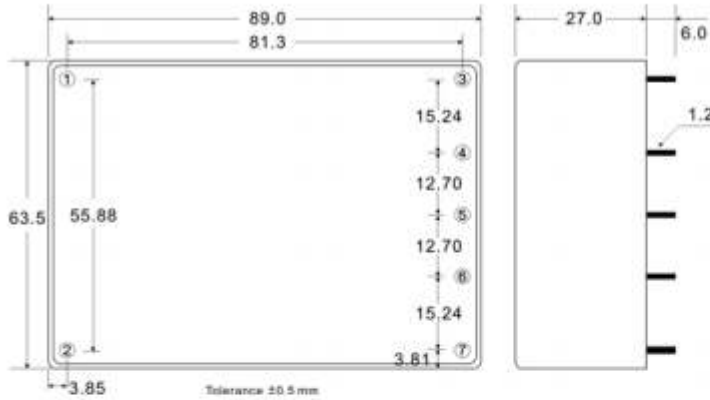
**NOTES:**

1. Add the letter "C" to the end of the model number for chassis mount option. Ex. "PAAM60-10C".
2. Ripple & Noise measured with 20MHz bandwidth with a 0.1µF ceramic & 47µF electrolytic capacitor across the output.
3. Safety approvals cover input frequencies of 47-63 Hz.
4. Natural convection is about 20LFM (not still air).

<b>Specifications</b>	
<b>Input</b>	
Input Voltage	90-264 VAC or 120-370 VDC, "N" to DC "+"; "L" to DC "-"
Input Frequency	47-440Hz
Input Current	1.5 A max. (115 VAC) / 1 A max. (230 VAC)
Inrush Current	55 A max. (115 VAC) / 95 A max. (230 VAC)
Leakage Current	<0.1mA / 264 VAC (Touch Current)
External Fuse	3.15A slow blow type
<b>Output</b>	
Total Output Power	Up to 60W
Voltage Accuracy	±2%
Line Regulation	±0.5%
Hold Up Time	10ms min.
<b>Protection</b>	
Overpower Protection	Auto-recovery
Over Voltage Protection	Zener diode clamp
Short Circuit Protection	Auto-recovery
<b>Isolation</b>	
Input—Output (VAC)	4000V
<b>Environmental</b>	
Operating Temperature	-40°C...+80°C (with derating)
Storage Temperature	-40°C...+90°C
Max Case Operating Temperature	Under 115 VAC 73°C, otherwise 80°C
Temperature Coefficient	±0.05%/°C
Altitude During Operation	5000m
Humidity	Up to 95% RH
MTBF	200,000 h~400,000 h @ 25°C
Atmospheric Pressure	540 hPa to 1060 hPa
<b>General Specifications</b>	
Dimensions	3.5 x 2.5 x 1.06 Inches (89.0x63.5x27.0mm) Chassis Mount: 4.44 x 2.54 x 1.30 Inches (112.9x64.7x33 mm)
Case Material	Plastic resin (flammability to UL 94V-0)
Weight	260g
Cooling Method	Free air convection

<b>Safety</b>	
Approvals	UL 60950-1, CAN/CSA C22.2 No. 60950-1-07 ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10), CAN/CSA-C22.2 No. 60601-1 (2008), 2 x MOPP IEC 60950-1:2005 (2nd Edition) + Am 1:2009 + Am 2:2013 IEC 60601-1:2005 (3rd Edition) + CORR. 1 (2006) + CORR. 2 (2007) + AM1 (2012) or IEC 60601-1 (2012 reprint), 2 x MOPP
*Consult with TT Electronics for information on additional country safety approvals	
<b>EMC</b>	
EMI (Conducted & Radiated Emissions) EMS (Noise Immunity)	EN55011 Class B EN60601-1-2 4th edition
*EMC filtering occurs internally within the module	

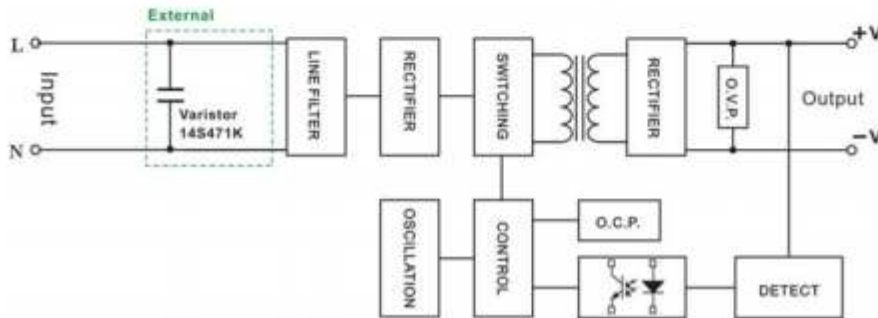
## MECHANICAL DIMENSION ( Top View ) Diagrams



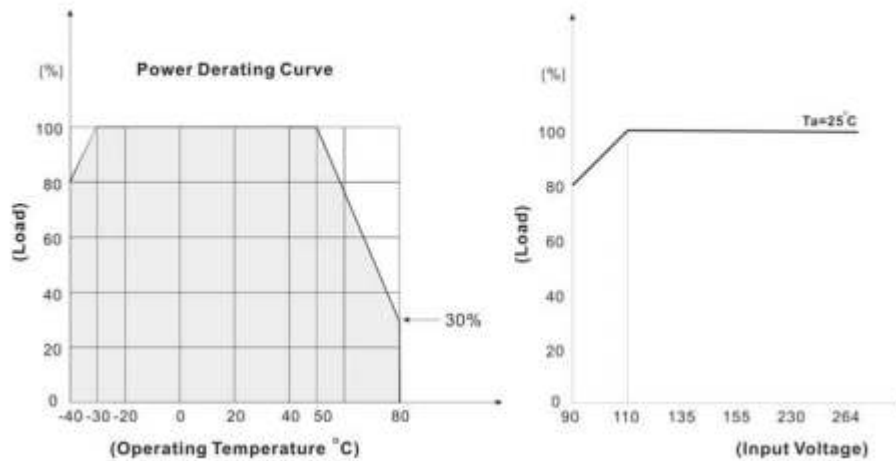
PIN#	Single
1	AC IN (L)
2	AC IN (N)
3	+DC OUT
4	NO PIN
5	-DC OUT
6	NO PIN
7	NO PIN

## BLOCK DIAGRAM

Single Output



## DERATING



## Chassis Mount



PIN#	Single
1	NO CONNECT
2	AC IN (L)
3	AC IN (N)
4	+DC OUT
5	NO CONNECT
6	-DC OUT
7	NO CONNECT
8	NO CONNECT

