

AC-DC Medical Power Module PAAM20 Series



Features:

- PCB Mountable Switching Power Module
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- <0.1W No Load Input Power
- Small Size
- CE, CB, UL, cUL Approvals
- 3-Year Product Warranty



Description:

The PAAM20 series of encapsulated, single output, through-hole AC/DC modules is specially designed for use in medical applications. This power dense 1.08" x 2.07" platform offers up to 20W of continuous throughput across a wide range of operating temperatures whilst maintaining low emissions and high efficiency.

Model Number ¹	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
PAAM20-12	20W	12V	1667	±0.5%	±1%	150	1500	83%
PAAM20-14	20W	24V	833	±0.5%	±1%	240	470	82%

NOTES:

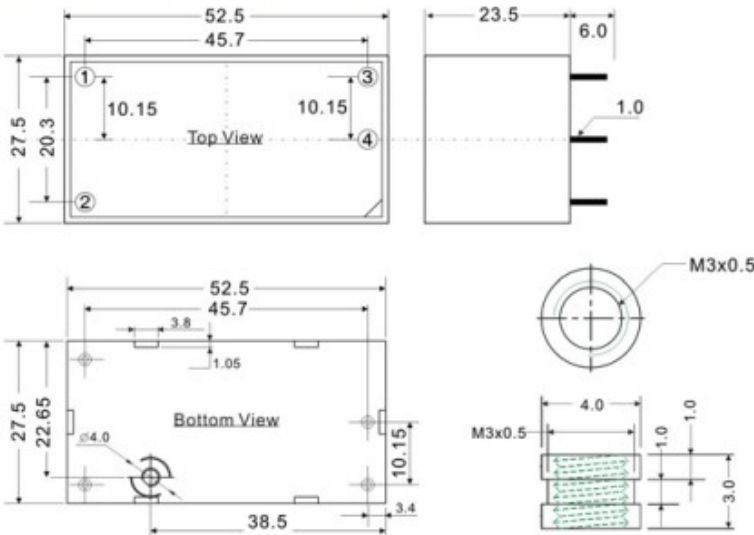
1. Add the letter "C" to the end of the model number for chassis mount option. Ex. "PAAM30-10C".
2. Ripple & Noise measured with 20MHz bandwidth with a 0.1μF ceramic & 47μF electrolytic capacitor across the output.
3. Safety approvals cover input frequencies of 47-63 Hz.
4. Natural convection is about 20LFM (not still air).

Specifications	
Input	
Input Voltage	90-264 VAC or 120-370 VDC, "N" to DC "+"; "L" to DC "-"
Input Frequency	47-440Hz
Input Current	440 mA max. (115 VAC) / 287 mA max. (230 VAC)
Inrush Current	20A max. (115VAC) / 40A max. (230 VAC)
Leakage Current	<0.1mA / 264 VAC (Touch Current)
External Fuse (recommended)	3.15A slow blow type
Output	
Total Output Power	Up to 20W
Voltage Accuracy	±2%
Minimum Load	0%
Line Regulation	±0.5%
Load Regulation	±1%
Hold Up Time	6ms (115VAC) / 46ms (230VAC)
Protection	
Overpower Protection	Hiccup mode, auto-recovery
Over Voltage Protection	Zener diode clamp
Short Circuit Protection	Hiccup mode, indefinite (auto-recovery)
Isolation	
Input—Output (VAC)	4000V
Environmental	
Operating Temperature	-40°C...+80°C (Case Temperature max. +95°C)
Storage Temperature	-40°C...+90°C
Temperature Coefficient	±0.05%/°C
Altitude During Operation	5000m
Humidity	Up to 95% RH
MTBF	>350,000h at 25°C (MIL-HDBK-217F) >3,500,000h at 25°C (Telcordia SR-332 (Bellcore))
Atmospheric Pressure	540 hPa to 1060 hPa
General Specifications	
Dimensions	2.07 x 1.08 x 0.93 Inches (52.5x27.5x23.5 mm) Chassis Mount: 2.12 x 1.14 x 3.78 Inches (96x53.9x29 mm)
Case Material	Plastic resin (flammability to UL 94V-0)
Weight	52g
Cooling Method	Free air convection

Safety	
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	
EMC	
EMI (Conducted & Radiated Emissions) EMS (Noise Immunity)	EN55011 Class B EN60601-1-2 4th edition
*EMC filtering occurs internally within the module	

MECHANICAL DIMENSION

Diagrams

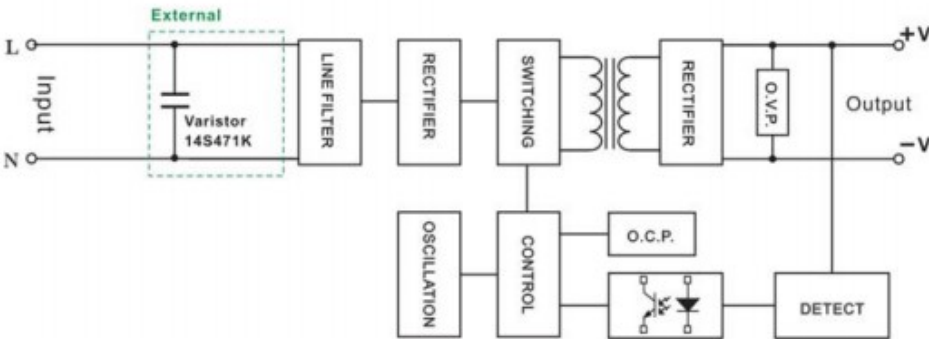


PIN#	Single
1	AC IN (L)
2	AC IN (N)
3	+DC OUT
4	-DC OUT

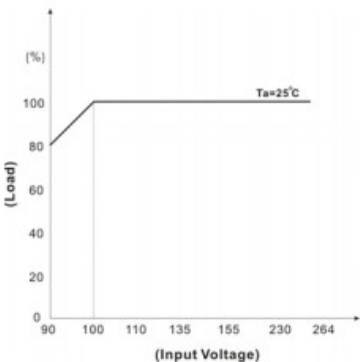
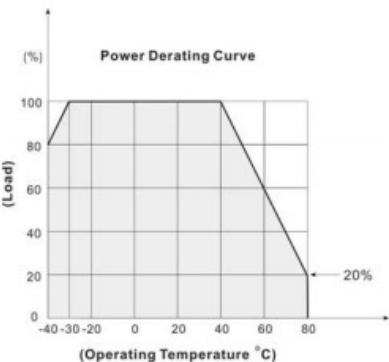
Maximum Torque 12 { 1.2 1 } (k g f . c m { N . m })

BLOCK DIAGRAM

Single Output



DERATING



Chassis Mount



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

