

AMM90 Series



- CEC2008 & EISA2007 Compliant $\geq 12V$
- Worldwide Medical Approvals
- Small Size/High Power Density
- Class I and Class II Versions
- Operating Temperature up to $+60\text{ }^{\circ}\text{C}$
- High Efficiency
- Locking Output Connector $\geq 15\text{ V}$

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 1.2 A rms at 115 VAC, 0.6 A rms at 230 VAC
Inrush Current	• 60 A at 115 VAC, 120 A at 230 VAC, cold start $+25\text{ }^{\circ}\text{C}$
Power Factor	• 0.98 typical
Earth Leakage Current (Class I Versions)	• 90 μA max at 115 VAC/60 Hz, 150 μA max at 230 VAC/50 Hz
Input Protection	• Internal 2.5 A fuse in live & neutral lines

Output

Output Voltage	• 5 to 48 VDC
Output Voltage Trim	• Not user-adjustable
Initial Set Accuracy	• $\pm 2\%$
Minimum Load	• No minimum load required
Start Up Delay	• 2 s max at 115 VAC
Start Up Rise Time	• $< 80\text{ ms}$ at 115 VAC
Hold Up Time	• 15 ms minimum at full load & 115 VAC
Line Regulation	• 0.5% maximum
Load Regulation	• See table
Transient Response	• 4% max. deviation, recovery to within 1% in 500 μs for a 25% load change
Ripple & Noise	• 2% max pk-pk (see note 1)
Overvoltage Protection	• 112-140% V_{nom} , recycle input to reset
Overtemperature Protection	• Unit shuts down, auto recovery
Overload Protection	• 110-200%, auto recovery
Short Circuit Protection	• Trip and restart (Hiccup mode)
Temperature Coefficient	• 0.04%/ $^{\circ}\text{C}$

General

Efficiency	• 78% min for 5 V, 6 V & 9 V models 85% minimum for all others
Isolation	• 4000 VAC Input to Output 1500 VAC Input to Ground (Class I only) 500 VAC Output to Ground (Class I only)
Switching Frequency	• 50-110 kHz variable
Power Density	• 3.4 W/ In^3
MTBF	• 150 kHrs per MIL-HDBK-217F

Environmental

Operating Temperature	• $0\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$, derate from 100% power at $+40\text{ }^{\circ}\text{C}$ to 50% power at $+60\text{ }^{\circ}\text{C}$
Cooling	• Convection-cooled
Operating Humidity	• 10-95% RH, non-condensing
Storage Temperature	• $-20\text{ }^{\circ}\text{C}$ to $+80\text{ }^{\circ}\text{C}$
Operating Altitude	• 3000 m
Shock	• 30 g, 10 ms on 3 axes
Vibration	• 5-100 Hz, 2.31 m/s^2 , 20 mins, 3 axes

EMC & Safety

Emissions	• EN55011/FCC/VCCI, Class B conducted EN55011/FCC/VCCI, Class B radiated
Harmonic Currents	• EN61000-3-2, Class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, level 2 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, level 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V Perf Criteria A
Magnetic Field	• EN61000-4-8, 3 A/m Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 70% U_T for 10 ms, 40% U_T for 100 ms, $< 5\%$ U_T for 5000 ms Perf Criteria A, B, B (Perf Criteria A, A, B with 70% load)
Safety Approvals	• EN60601-1, UL60601-1, CSA22.2 No. 601-1 per cUL, CE Mark

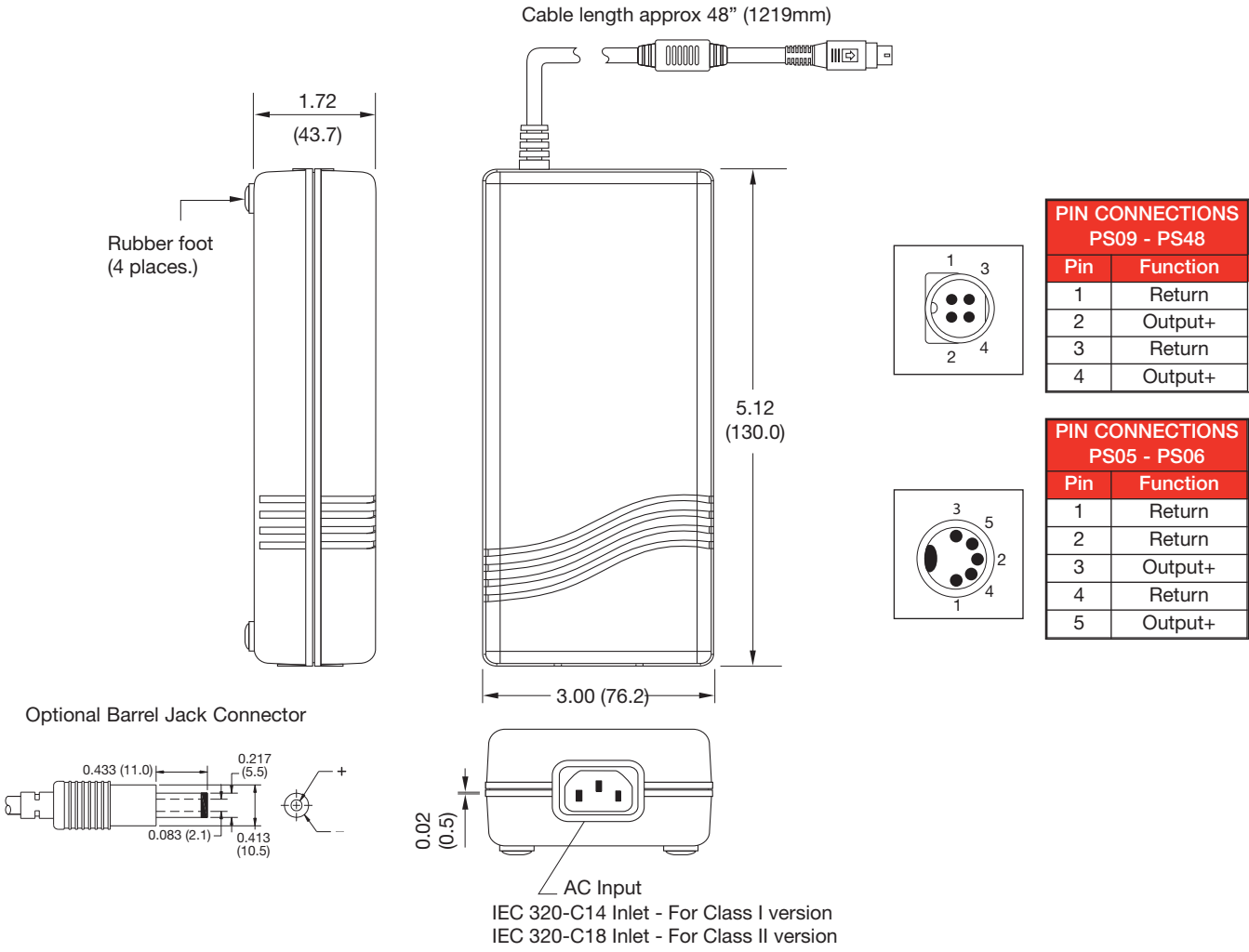
Models and Ratings

Output Power	Output Voltage	Output Current	Total Regulation ⁽²⁾	Model Number ^(3, 4)
60 W	5.0 V	12.00 A	5%	AMM90PS05
60 W	6.0 V	10.00 A	5%	AMM90PS06
70 W	9.0 V	7.78 A	5%	AMM90PS09
80 W	12.0 V	6.67 A	5%	AMM90PS12
85 W	13.5 V	6.30 A	5%	AMM90PS13
85 W	15.0 V	5.67 A	5%	AMM90PS15
90 W	18.0 V	5.00 A	5%	AMM90PS18
90 W	19.0 V	4.74 A	5%	AMM90PS19
90 W	24.0 V	3.75 A	5%	AMM90PS24
90 W	30.0 V	3.00 A	5%	AMM90PS30
90 W	48.0 V	1.87 A	5%	AMM90PS48

Notes

- Ripple and noise measured at 20 MHz bandwidth with a 10 μF tantalum and 0.1 μF ceramic cap connected at the measurement point.
- Total regulation includes initial set accuracy, line and load regulation.
- For class II versions, add 'C2' to model number e.g. AMM90PS24C2.
- For optional Barrel Jack Connector, add 'B1' to model number e.g. AMM90PS24C2B1 (not available on 5 V or 6 V models).

Mechanical Details



Notes

- Dimensions shown in inches (mm). Tolerance is 0.02 (0.5) maximum, except output cable length.
- Maximum load per pin on output connector is 7.5 A.
- Output connector for AMM90PS05 and PS06 is 5 pin 180° DIN.
- Output connector for AMM90PS09-PS13 is KYCON KPP-4P non locking type. For mating half, use KYCON KPJ-4S-S or equivalent.
- Output connector for AMM90PS15-PS48 is KYCON KPP-4P locking type. For mating half, use KYCON KPJ-4S-S or equivalent.
- For Class I versions shell is connected to ground. For Class II versions shell is capacitively coupled to input.
- Weight: 1.46 lb (660 g).