



FSP090M Series

FEATURES

- Class I design safety standard compliance
- IEC60601-1 & IEC 62368-1
- Energy efficiency DOE Level VI
- No load power consumption $\leq 0.21W$
- High altitude 5000M operation
- Compliant with RoHS requirement
- Meet EN55011

SAFETY STANDARD APPROVAL



DESCRIPTION

This series of medical adapters are Class I design (with safety-protected earth) with IEC-320/C14 or IEC 320/C6 AC inlet. Maximum 90W continued output power at 40°C operation temperature. High-efficiency features comply with US DOE requirements. All models meet EN 55011 conducted and radiated emission.

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	< 1.5 A (rms) / 100 VAC < 0.7 A (rms) / 240 VAC
Touch current:	$\leq 100 \mu A$ / 264 VAC, 63 Hz
Earth Leakage Current:	$\leq 150 \mu A$ / 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart
Maximum output power:	90W
Protection:	
OVP:	Latch off
OCP & Shorted:	Auto recovery
OTP:	Latch off

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0°C~+40°C
Storage temperature:	-20°C~+85°C
Operating humidity:	5% to 95% RH non-condensing
Storage humidity:	5% to 95% RH non-condensing

GENERAL SPECIFICATIONS

Efficiency:	See rating chart
Hold-up time:	10 ms minimum at 115Vac/60Hz
Line regulation:	$\pm 1\%$ maximum at full load
Inrush current:	35 A @ 115 VAC or 100 A @ 230 VAC, at 25°C cold start
Operating altitude :	5000 meters
Withstand voltage:	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP) 500 VAC from output to ground
MTBF:	150,000 hours at full load at 25°C ambient , calculated per MIL-HDBK-217F
EMC Performance (IEC60601-1-2)	
EN55011:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, Class D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ± 15 KV air and ± 8 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, ± 2 KV Surge, ± 1 KV diff., ± 2 KV com. Conducted
EN61000-4-5:	immunity, 3 Vrms Magnetic field
EN61000-4-6:	immunity, 30 A/m
EN61000-4-8:	immunity, 30 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms 60% reduction for 100 ms >95% reduction for 10 ms

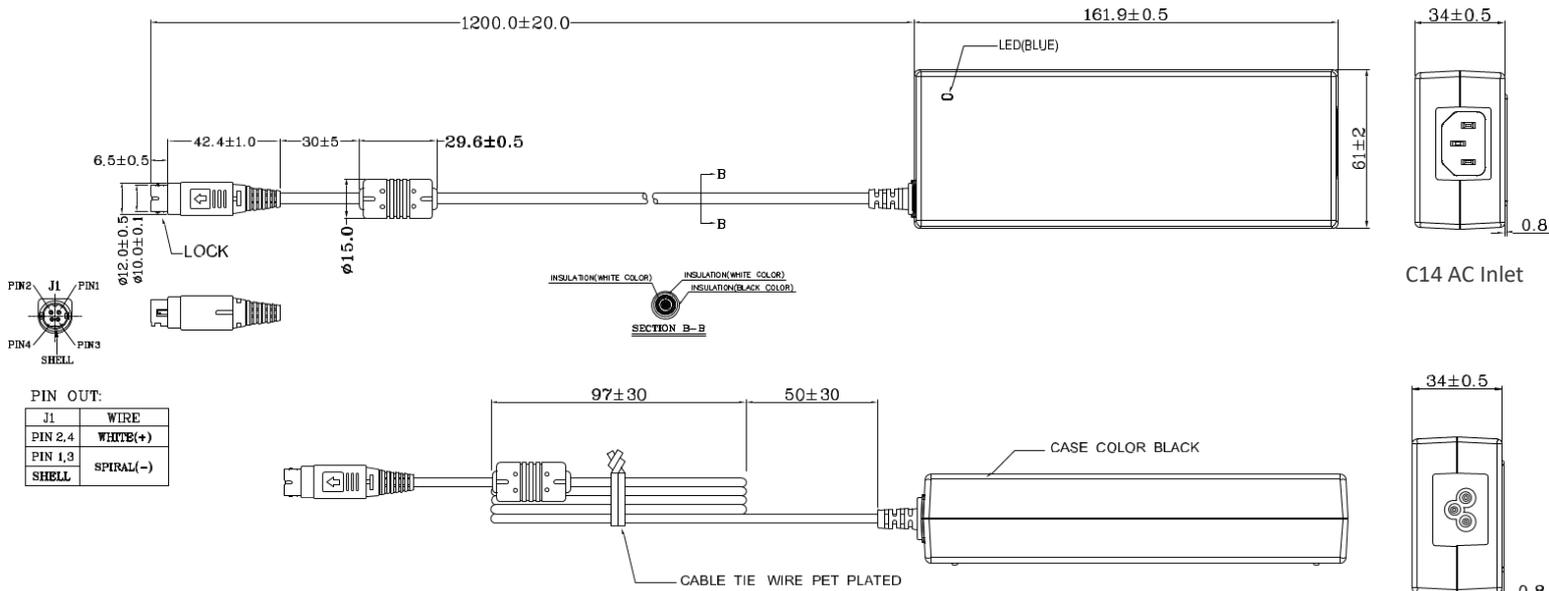
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Input Socket	Output						Average Active Efficiency (typical) @ 115V / 230V ⁽²⁾
		Voltage	Min. Current	Max. Current	Tolerance	Ripple & Noise ⁽¹⁾	Max. Power	
FSP090M-DHA	C14	12 V	0 A	7.50A	±5%	120 mV	90W	89% / 90%
FSP090M-DGA	C14	15 V	0 A	6.00A	±5%	150 mV	90W	90% / 91%
FSP090M-DBA	C14	19 V	0 A	4.74A	±5%	190 mV	90W	91% / 91%
FSP090M-DAA	C14	24V	0A	3.75A	±5%	240 mV	90W	90% / 91%
FSP090M-DHB	C6	12 V	0 A	7.50A	±5%	120 mV	90W	89% / 90%
FSP090M-DGB	C6	15 V	0 A	6.00A	±5%	150 mV	90W	90% / 91%
FSP090M-DBB	C6	19 V	0 A	4.74A	±5%	190 mV	90W	91% / 91%
FSP090M-DAB	C6	24V	0A	3.75A	±5%	240 mV	90W	90% / 91%

NOTES:

- Ripple and noise measurements shall be made with an oscilloscope of at least 20MHz bandwidth. Output shall be bypassed at the connector with a 0.1µF ceramic disk capacitor and a 10µF electrolytic capacitor to simulate system loading.
- Average Active Efficiency measurements shall be tested at 100%, 75%, 50%, 25%, and 10% of nameplate output current and no load condition.

MECHANICAL SPECIFICATIONS



NOTES:

- Dimensions shown in mm.
- Output 12V cable is 1000mm.
- Weight: 363 grams (0.80 lbs.) approx.