



FSP090M Series

FEATURES

- Compact size 145 × 71 × 29 mm
- Certified medical safety IEC 60601-1
- Meet Energy Efficiency DOE Level VI
- No load power consumption $\leq 0.21W$
- High altitude 5000M operation
- Meet EN55011 and FCC Class B
- Over voltage protection
- Over current protection
- Over temperature protection
- Compliant with RoHS requirement

SAFETY STANDARD APPROVAL



DESCRIPTION

The FSP090M series are high efficiency desktop adapter with IEC 320/C14 AC inlet, which can deliver 90 watts continuous output power. All models meet EN55011 and FCC class B emission limits, and are designed for medical applications.

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	< 1.5 A (rms) / 115 VAC < 0.8 A (rms) / 230 VAC
Touch current:	< 100 μA / 264 VAC, 60 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart
Maximum output power:	See rating chart
Protection:	
Over voltage:	The power supply will shut down while over-voltage happened.
Short circuit:	Output can be short-circuited without damage, and will recover automatically after short-circuit condition is removed.
Over current:	Output current shall be limited between 160% max load and auto recovery or latch protection.
Over temperature:	The power supply will shut down while over-temperature happened. It will shutdown operation after the fault condition is removed.

ENVIRONMENTAL SPECIFICATIONS

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

GENERAL SPECIFICATIONS

Power factor:	0.97 Typical at 115 VAC
Efficiency:	See rating chart
Hold-up time:	10 ms minimum at 115Vac/60Hz
Line regulation:	$\pm 1\%$ maximum at full load
Inrush current:	50 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)
MTBF:	100,000 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
FCC:	Class B conducted, class B radiated
VCCI:	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, 10 V/m
EN61000-4-4:	Fast transient/burst, ± 2 KV
EN61000-4-5:	Surge, ± 1 KV diff., ± 2 KV com.
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 30 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms, 60% reduction for 100 ms, and >95% reduction for 10 ms

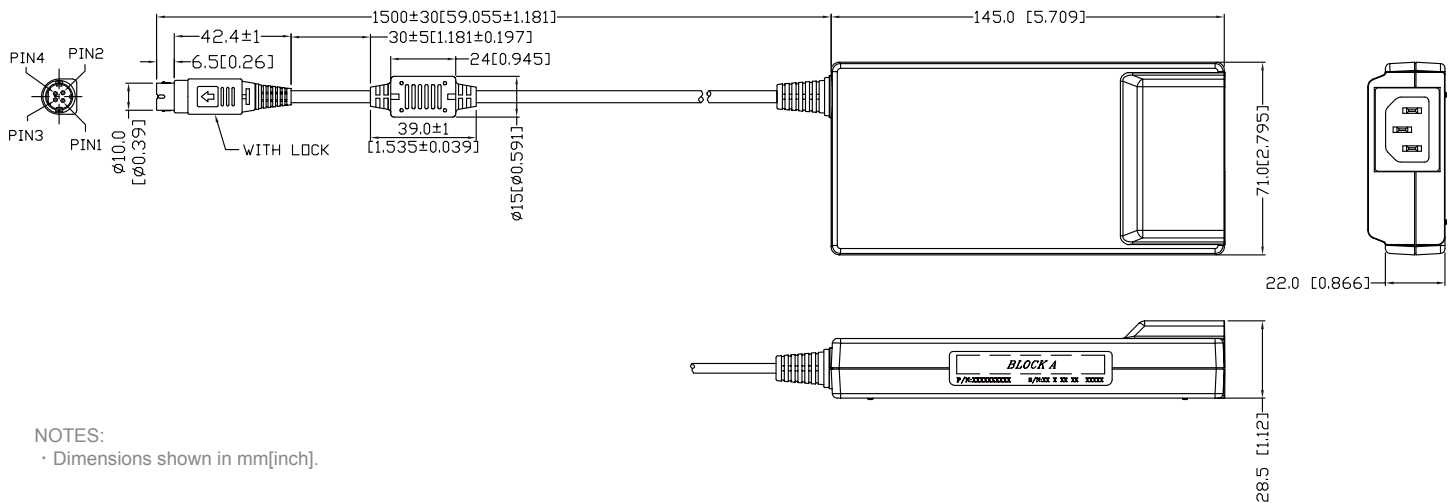
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output						Average Active Efficiency (typical) @ 115 / 230 VAC
	Voltage	Min. Current	Max. Current	Tolerance	Ripple & Noise ⁽¹⁾	Max. Power	
FSP090M-RHA	12 V	0 A	7.50 A	±5%	150 mV	90W	88% / 88%
FSP090M-RGA	15 V	0 A	6.00 A	±5%	200 mV	90W	88% / 88%
FSP090M-RBA	19 V	0 A	4.74 A	±5%	200 mV	90W	88% / 88%
FSP090M-RAA	24 V	0 A	3.75 A	±5%	240 mV	90W	88% / 88%

NOTES:

1. 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 47µF electrolytic capacitor to simulate system loading.

MECHANICAL SPECIFICATIONS


NOTES:

· Dimensions shown in mm[inch].

PIN CHART

DIN Plug	PIN 2	PIN 4	PIN 1	PIN 3	Shield
Polarity	V0(+)		Return		