



Medical USB PD Series

FEATURES

- USB Power Delivery Type-C Adapter
- IEC60601-1 & IEC 62368-1
- Class I design
- Energy efficiency DOE Level VI
- No load power consumption $\leq 0.21W$
- EN55011 class B compliance

SAFETY STANDARD APPROVAL



DESCRIPTION

This series of medical USB Power Delivery adapters are Class I design (with safety-protected earth) with IEC-320/C14 or IEC 320/C6 AC inlet. Maximum 45W or 65W 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:	FSP045M-DUA / FSP045M-DUB ≤ 1.2 A (rms) / 100 VAC ≤ 0.8 A (rms) / 240 VAC FSP065M-DUA / FSP065M-DUB ≤ 1.8 A (rms) / 100 VAC ≤ 1.0 A (rms) / 240 VAC
Input protection:	T3.15AH/250V Internal fuse fitted in line and neutral
Touch current:	≤ 100 μ A / 264 VAC, 63 Hz
Earth Leakage Current:	≤ 150 μ A / 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart
Maximum output power:	45/65W
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:	≥ 6 ms minimum at 100Vac/60Hz or 230Vac/50Hz
Line regulation:	$\pm 1\%$ maximum at full load
Inrush current:	No damage
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:	358,302 hours at full load at 25°C ambient , calculated per SR332
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
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 >95% reduction for 10 ms

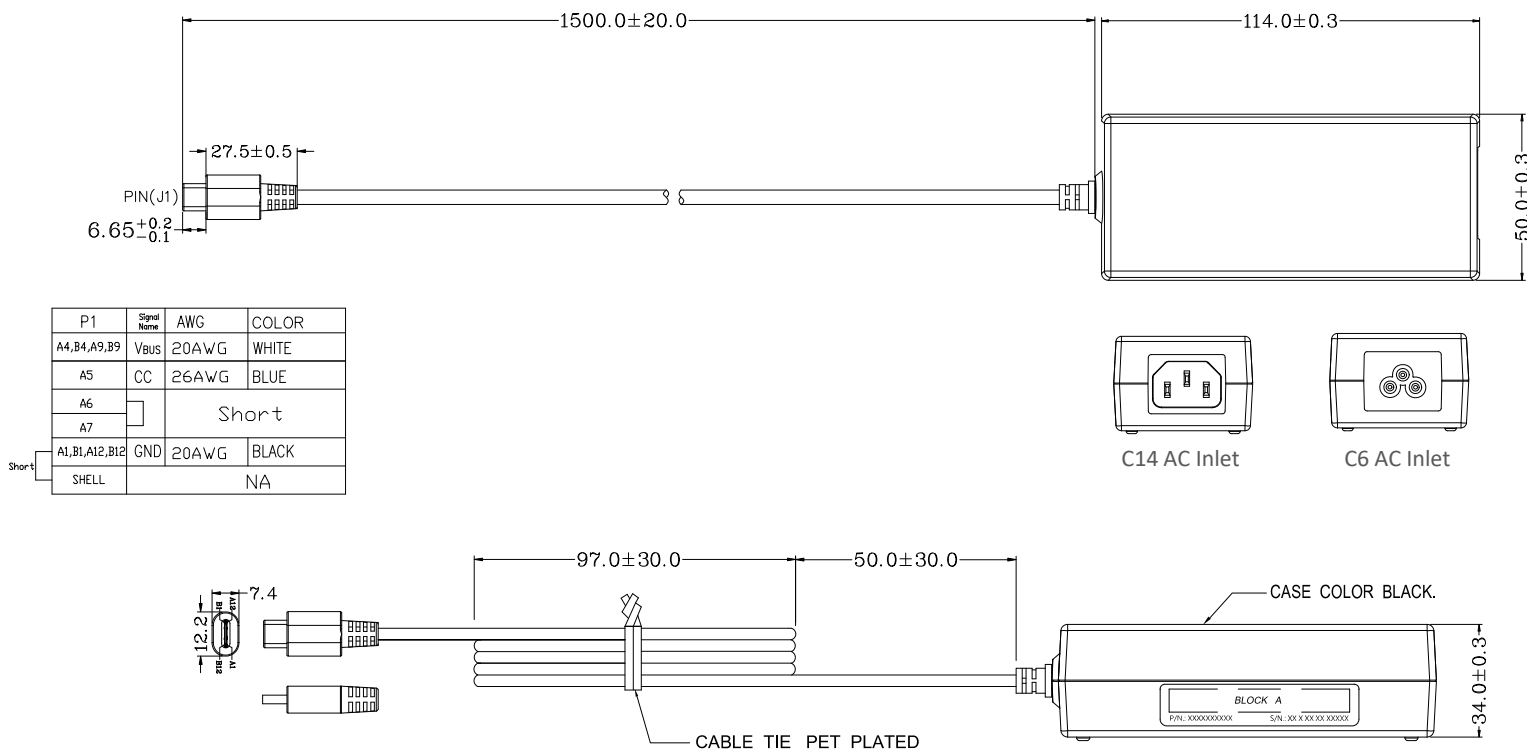
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Input Socket	Output						Average Active Efficiency ⁽²⁾	
		Voltage	Min. Current	Max. Current	Tolerance	Ripple & Noise ⁽¹⁾	Max. Power	115V	230V
FSP065M-DUA	C14	5/9/12/15/20V	0 A	3/3/3/3/3.25A	±5%	5/9/12V ≤ 250 mV 15/20V ≤ 300 mV	65W	5V: 85.72% (@2A) 5V: 84.84% (@3A) 9V: 88.55% 12V: 89.60% 15V: 90.39% 20V: 90.27%	5V: 82.31% (@2A) 5V: 81.81% (@3A) 9V: 86.95% 12V: 88.62% 15V: 90.05% 20V: 91.13%
FSP065M-DUB	C6	5/9/12/15/20V	0 A	3/3/3/3/3.25A	±5%	5/9/12V ≤ 250 mV 15/20V ≤ 300 mV	65W	5V: 85.72% (@2A) 5V: 84.84% (@3A) 9V: 88.55% 12V: 89.60% 15V: 90.39% 20V: 90.72%	5V: 82.31% (@2A) 5V: 81.81% (@3A) 9V: 86.95% 12V: 88.62% 15V: 90.05% 20V: 91.34%
FSP045M-DUA	C14	5/9/12/15/20V	0 A	3/3/3/3/3.25A	±5%	5/9/12V ≤ 250 mV 15/20V ≤ 300 mV	45W	5V: 85.72% (@2A) 5V: 84.84% (@3A) 9V: 88.55% 12V: 89.60% 15V: 90.39% 20V: 90.72%	5V: 82.31% (@2A) 5V: 81.81% (@3A) 9V: 86.95% 12V: 88.62% 15V: 90.05% 20V: 91.34%
FSP045M-DUB	C6	5/9/12/15/20V	0 A	3/3/3/3/3.25A	±5%	5/9/12V ≤ 250 mV 15/20V ≤ 300 mV	45W	5V: 85.72% (@2A) 5V: 84.84% (@3A) 9V: 88.55% 12V: 89.60% 15V: 90.39% 20V: 90.72%	5V: 82.31% (@2A) 5V: 81.81% (@3A) 9V: 86.95% 12V: 88.62% 15V: 90.05% 20V: 91.34%

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.
- Weight: 194.5 grams (0.43 lbs.) approx.