TECHNICAL DATASHEET

900W Medical ATX Power Supply

FSP900M-60PJ

FEATURES

- 1U size with 240 x 100 x 41 mm
- IEC 60601-1 & IEC 62368-1 certified
- Intel ATX12V V3.0 compliance
- Meet 80 Plus Gold efficiency
- Meet EN55011 Class B
- BF class isolation

SAFETY STANDARD APPROVAL

E211696

Please check certificate schedule before design

DESCRIPTION

This PSU of AC/DC switching power supplies in a 1U form factor 240 x 100 x 41 mm is capable of delivering 900 watts of continuous power. PSU built-in DC/DC converter at +3.3V and +5V output rails to enhance load regulation. The high-efficiency design complies with 80PLUS GOLD.

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	9.5 A (rms) @115Vac, 60Hz 4.8 A (rms) @ 230Vac, 50Hz
Earth leakage current:	400 µA max. @ 264 VAC, 63 Hz
Touch current:	100 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	See rating chart.
Protection	
OVP:	Latch off
OCP & Shorted:	Auto recovery
OTP:	Latch off

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0℃ to +50℃
Storage temperature:	-20℃ to +80℃
Relative humidity:	10% to 95% non-condensing
Derating:	Derate from 100% at +50℃ linearly to 50% at +70℃

GENERAL SPECIFICATIONS

Turn-on delay time:	2 Sec maxi.
Power factor:	0.95 minimum
Efficiency:	Meet 80PLUS Gold (87%, 90%, 87%)
Hold-up time:	16 mS minimum at 115VAC, 80% load 16 mS minimum at 230 VAC, 80% load
Line regulation:	±1% maximum at full load
Inrush current:	No damage to power supply
Withstand voltage:	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP) 1500 VAC from output to ground
EMC Performance (IEC60601-1-2)	
EN55011:	Class B conducted, Class B radiated
EN61000-3-2:	Harmonic distortion, Class A
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±15 KV air and ±8 KV contact
EN61000-4-3:	Radiated immunity, 9-28 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, 3-6 Vrms
EN61000-4-8:	Magnetic field immunity, 30 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms, >100% reduction for 10 ms

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OUTPUT VOLTAGE/CURRENT RATING CHART

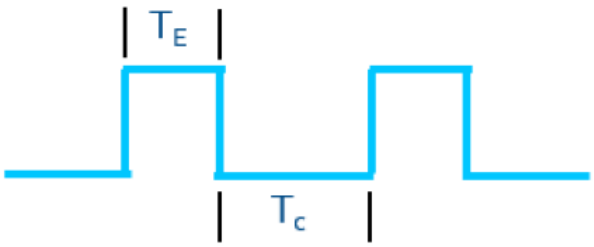
Rating / Outputs	FSP900M-60PJ		Load Regulation	Ripple & Noise*3
	Mini. Load	Maxi. Load		
+3.3 V	0 A	20 A	±5%	50 mV P-P
+ 5 V	0 A	20 A	±5%	50 mV P-P
+12 V1	0 A	74.91 A	±5%*2	120 mV P-P
- 5 V *1	0 A	0.2 A	±10%	100 mV P-P
-12 V	0 A	0.3 A	±10%	120 mV P-P
+5 Vsb	0 A	3 A	±5%	50 mV P-P
+3.3 V & +5 V Combine Output Power	120W Maxi.			
+12V Total Output Power Maxi.	899W			
Total Output Power	900W			

NOTES:
1. -5V is not for standard model but upon request.
2. Load regulation -7% minimum at peak load conditions.
3. Ripple and noise measurements shall be made under all specified load conditions through a single pole low pass filter with 20MHz cutoff frequency. Outputs shall bypassed at the connector with a 0.1uF ceramic disk capacitor and a 10uF electrolytic capacitor to simulate system loading..

Power Excursion

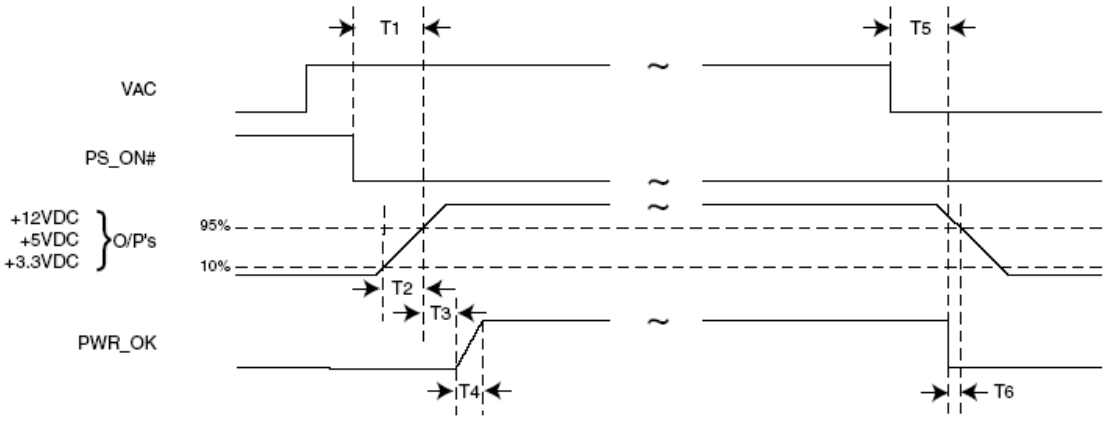
Based on the power budgets and peak power of both the Processor detailed and the PCIe* Add-in Cards, the following Peak Power Requirements are defined for the Power Supply.

Power Excursion % of PSU Rated Size	Time for Power Excursion (TE)	Testing Duty Cycle	Time Constant (TC)
100%	Infinite		
120%	100ms	25%	300ms
160%	10ms	12.5%	70ms
180%	1ms	8%	11.5ms
200%	100us	5%	1900us



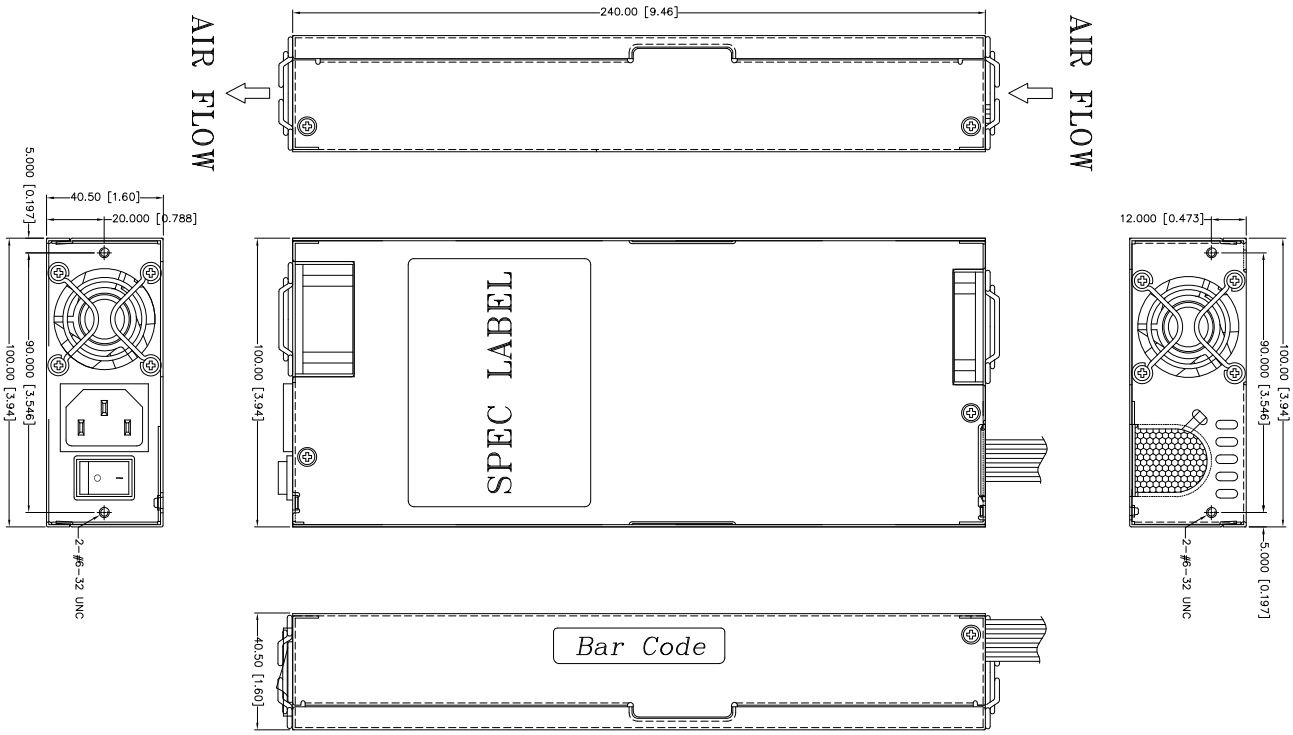
INTERFACE SIGNALS

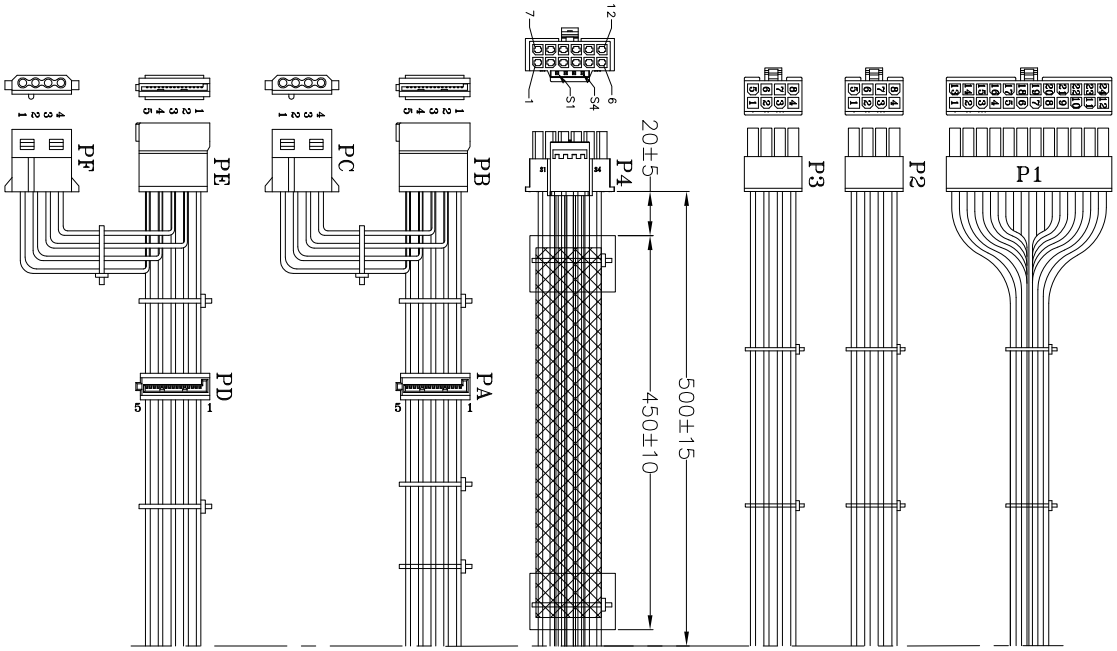
The electrical and timing characteristics of the PWR_OK signal are given in table.



Signal Type	+5 V TTL compatible
Logic level low	< 0.4 V while sinking 4 mA
Logic level high	Between 2.4 V and 5 V output while sourcing 200 µA
High-state output impedance	1 kΩ from output to common
Power-on time	T_1 < 200 ms
Rise time	0.1 ms ≦ T2 ≦ 20 ms
PWR_OK delay	100 ms < T_3 < 250 ms
PWR_OK rise-time	T_4 ≦ 10 ms
AC loss to PWR_OK hold-up time	T_5 ≧ 16 ms
Power-down warning	T_6 ≧ 1 ms

MECHANICAL SPECIFICATIONS





Output connectors	Connector ID.	Cable Length	Output connectors (equivalent)
Mother board 24 pin	P1	500 mm	WST P24-I42002
CPU 8 pin	P2, P3	500 mm * 2	WST P8-I42002
PCI-e Gen 5	P4	500 mm	WST PD12-I30006FS4Z-B
SATA + PATA	PA + PB + PC PD + PE + PF	(500+155+155 mm) * 2	MOLEX SD-67926-0311 MOLEX SD-67582-001 WST P4-A10202

Weight: 1.6 Kg