TECHNICAL DATASHEET

250W Medical FLEX ATX Power Supplies

MPC SERIES

FEATURES

- Design comply with IEC 60601-1 and IEC 60950-1
- 80PLUS BRONZE certificate
- +5Vsb less than 1W @ standby mode (PS_ON high)

SAFETY STANDARD APPROVAL

E211696

DESCRIPTION

This series medical AC-DC power supply offering 220W and 250W power with ATX outputs, 1U standard size 190 x 82 x 40.5 mm could be widely fitted in different chassis. High efficiency design with 80PLUS efficiency.

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	
FSP250-60MPC:	3.2 A (rms) @115Vac
	1.7 A (rms) @ 230Vac
FSP220-60MPC:	3.0 A (rms) @1115Vac
	1.5 A (rms) @ 230Vac
Earth leakage current:	300 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:	+3.3V, +5V & +12V, Latch off
OCP, Shorted:	+3.3V, +5V & +12V Latch off
	+5Vsb, -12V, -5V Auto-recovery
OTP	Rated 150% 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

Power factor:	0.9 minimum
Efficiency:	80PLUS BRONZE (82%-85%-82%)
Hold-up time:	14 mS minimum at 115VAC
Line regulation:	±1% maximum at full load
Inrush current:	No damage to PSU (Ip2 *t < 20)
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 & 25℃ ambient, calculated per MIL-HDBK- 217
EMC Performance (IEC60601-1-2)	
EN55011/ EN55022:	Class B conducted, Class B radiated
FCC / VCCI:	Class B conducted, Class B radiated
EN61000-3-2:	Harmonic distortion, Class D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±6 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, 10 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

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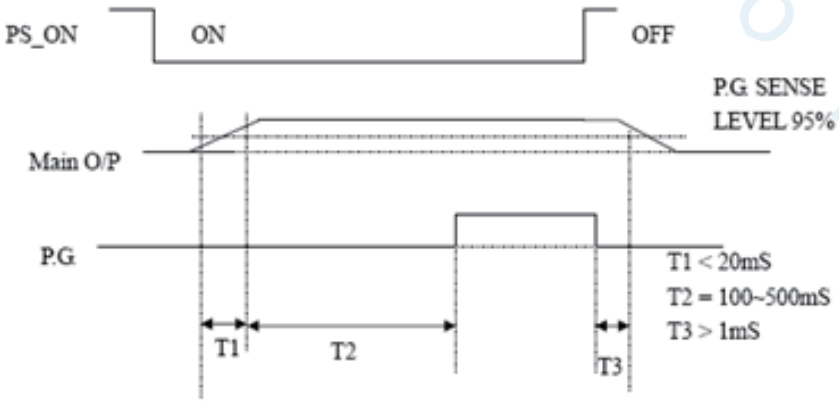
OUTPUT VOLTAGE/CURRENT RATING CHART

Rating / Outputs	FSP220-60MPC		FSP250-60MPC		Load Regulation	Ripple & Noise *3
	Mini. Load	Maxi. Load	Mini. Load	Maxi. Load		
+3.3 V	0.3 A	9 A	0.3 A	12 A	±5% *2	50 mV P-P
+ 5 V	0.5 A	12 A	0.5 A	14 A	±5% *2	50 mV P-P
+12 V1	1.0 A	14 A	1.0 A	18 A	±5% *2	120 mV P-P
-5 V *1	0 A	0.3 A	0 A	0.3 A	±10%	100 mV P-P
-12 V	0 A	0.3 A	0 A	0.3 A	±10%	120 mV P-P
+5 Vsb	0 A	2.5 A	0 A	2.5 A	±5%	50 mV P-P
+3.3 V & +5 V Combine Output Power	60W Maxi.		80W Maxi.			
Total Output Power	220W		250W			

NOTES:
1. -5V is not for standard model but upon request.
2. Voltage regulation will over 10% at +3.3V, +5V, +12V if load less than minimum load mentioned on table.
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.

INTERFACE SIGNALS



1. T1 : RISETIME < 20 Ms
2. T2 : POWER GOOD DELAY TIME 100 ~ 500 mS
3. T3 : POWER FAIL DELAY TIME > 1 mS

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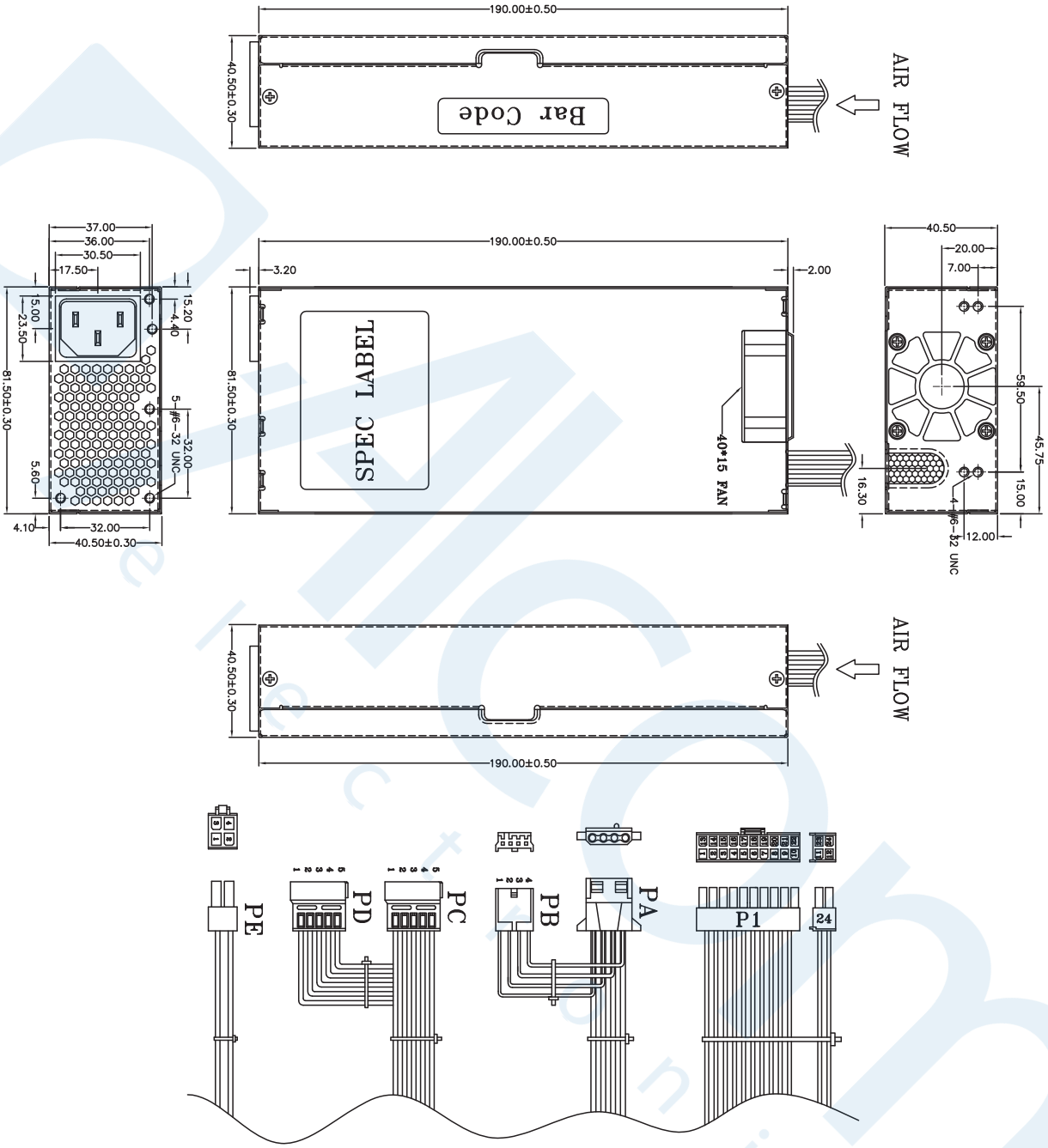
MECHANICAL SPECIFICATIONS



No.	Output Connectors	Cable Length	Connector No.	Output connectors (equivalent)
P1	Mother board 20+4 pin	200 mm	1	WST P20-I42002K11D + P4- I42002K11D
PA, PB	PATA + Floppy con.	250+ 150 mm	1 + 1	AMP 1-480424-0 + AMP 171822-4
PC, PD	SATA	310+ 150 mm	1 + 1	CL1270H00-15P
PE	CPU 4 pin	310 mm	1	MOLEX 39-01-2040

Weight: 0.842 Kg