TECHNICAL DATASHEET

# 700W Medical ATX Power Supplies

## PB SERIES

### FEATURES

- Design meet IEC 60601-1 & IEC 62368-1
- Meet intel x86 platform requirement
- Meet 80PLUS GOLD efficiency
- Meet EN 55011 class B emission
- BF class isolation

### SAFETY STANDARD APPROVAL

E211696

### DESCRIPTION

This series of AC/DC switching power supplies in a standard ATX form factor 165 x 150 x 86 mm is capable of delivering 600 or 700 watts of continuous power. PSU build-in DC/DC converter at +3.3V and +5V output rails to enhance load regulation. High-efficiency design complies with 80PLUS GOLD efficiency.

### INPUT SPECIFICATIONS

| | |
|---|---|
| Input voltage: | 90-264 VAC |
| Input frequency: | 47-63 Hz |
| Input current: | |
| FSP600M-70PB | 7 A (rms) @115Vac, 60Hz<br>3.5 A (rms) @ 230Vac, 50Hz |
| FSP700M-70PB | 8A (rms) @1115Vac, 60Hz<br>4 A (rms) @ 230Vac, 50Hz |
| Earth leakage current: | 300 μAmax. @ 264 VAC, 63 Hz |

### OUTPUT SPECIFICATIONS

| | |
|---|---|
| Output voltage/current: | See rating chart. |
| Maxi. output power: | See rating chart. |
| Ripple and noise: | See rating chart. |
| Protection | |
| Overvoltage | +3.3V, +5V & +12V, Latch off |
| Overcurrent | +3.3V, +5V & +12V, Latch off |
| Overtemperature | +3.3V, +5V & +12V, Latch off<br>+5Vsb, -12V, -5V, Auto-recovery |

### 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: | 0.9 mini. @ 20% load mini. |
| Efficiency: | 80PLUS GOLD (87%, 90%, 87%) |
| Hold-up time: | 17 mS minimum at 115VAC & 230VAC |
| Line regulation: | ±1% maximum at full load |
| Inrush current: | 50 A @115 VAC at 25℃ cold start<br>100 A @ 230 VAC at 25℃ cold start |
| Withstand voltage: | 4000 VAC from input to output (2 MOPP)<br>1500 VAC from input to ground (1 MOPP)<br>1500 VAC from output to ground |
| MTBF: | 150,000 hours at full load & 25℃ ambient, calculated per MIL-HDBK- 217 |

EMC Performance (IEC60601-1-2)

| | |
|---|---|
| EN55011:/ EN55032 | Class B conducted, Class B radiated |
| FCC / VCCI: | 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,<br>30% reduction for 500 ms,<br>60% reduction for 100 ms<br>>95% reduction for 10 ms |


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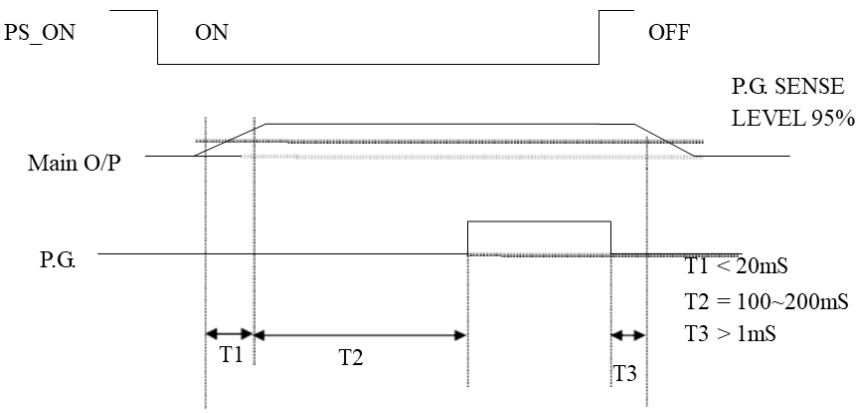
# 700W Medical ATX Power Supplies

## OUTPUT VOLTAGE/CURRENT RATING CHART

| Rating / Outputs | FSP600M-70PB | | FSP700M-70PB | | Load Regulation | Ripple & Noise*2 |
|---|---|---|---|---|---|---|
| | Mini. Load | Maxi. Load | Mini. Load | Maxi. Load | | |
| +3.3 V | 0 A | 24 A | 0 A | 24 A | ±5% | 50 mV P-P |
| + 5 V | 0 A | 30 A | 0 A | 30 A | ±5% | 50 mV P-P |
| +12 V1 | 0.1 A | 25 A<br>peak 30 A | 0.1 A | 30 A<br>peak 35 A | ±5% | 120 mV P-P |
| +12 V2 | 0.2 A | 25 A<br>peak 30 A | 0.2 A | 30 A<br>peak 35 A | ±5% | 120 mV P-P |
| - 5 V*1 | 0 A | 0.2 A | 0 A | 0.2 A | ±10% | 100 mV P-P |
| -12 V | 0 A | 0.5 A | 0 A | 0.5 A | ±10% | 120 mV P-P |
| +5 Vsb | 0.05 A | 3.0 A | 0.05 A | 3.0 A | ±5% | 50 mV P-P |
| +3.3 V & +5 V Combine Output Power | 150W Maxi. | | 150W Maxi. | | | |
| +12V Total Output Power Maxi. / Peak*3 | 50A Maxi. / 660W peak | | 58A Maxi. / 780W peak | | | |
| Total Output Power | 600W | | 700W | | | |

NOTES:
1. -5V is not for standard model but upon request.
2. 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.
3. The duration of peak power is less than 10 mS.

## INTERFACE SIGNALS




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