Sparkle Power Inc

FSP GROUP

180 WATT MEDICAL POWER SUPPLIES

DESCRIPTION

The series of AC/DC switching power supplies can deliver 180 watts continuous output power. High efficiency with an IEC320/C14 or IEC320/C8 inlet to mate with interchangeable AC cord for world-wide use. All models meet EN55011, EN55022 and FCC class B emission limits.

FSP180 SERIES

RoHS

FEATURES

- Low earth leakage current
- Meet EN55011/EN55022 and FCC class B emission
- OVP, OCP, OTP protection
- High efficiency compliant with Energy Star efficiency level V requirements
  * No load power consumption less than 0.5 W
  * Average active efficiency greater than 87%
- Optional output connectors

SAFETY STANDARD APPROVALS

UL 60601-1, CSA C22.2 No. 601.1
File No. E211696

IEC 60601-1

TÜV EN 60601-1

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	50-60 Hz
Input current:	2.4 A (rms) for 115 VAC 1.2 A (rms) for 230 VAC
Earth leakage current:	200 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:	380 mV peak to peak maximum
Protection:	
OVP	Latch off
OCP	Auto recovery
OTP	Latch off
Temperature coefficient:	±0.04% /℃ maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0℃ to +40℃
Storage temperature:	-20℃ to +80℃
Relative humidity:	10% to 90% non-condensing

GENERAL SPECIFICATIONS

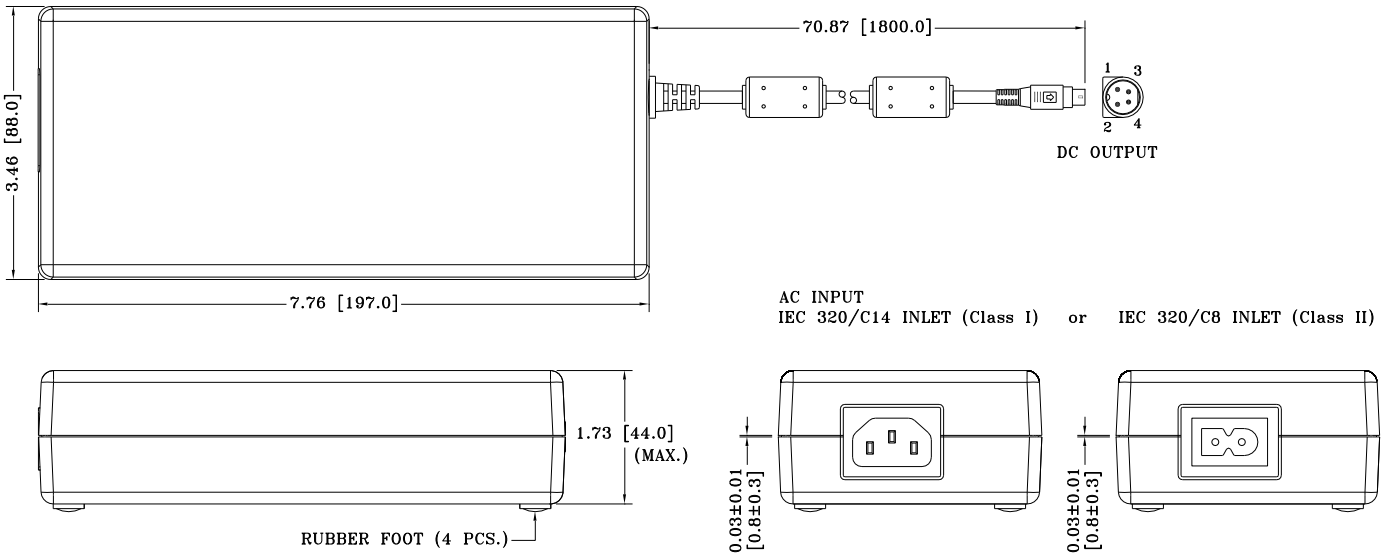
Hold-up time:	5 ms minimum at 100 VAC
Turn on delay time:	3 Sec maximum at 100 VAC
Power Factor:	0.95 typical
Efficiency:	See rating chart
Line regulation:	±0.5% maximum at full load
Inrush current:	45 A @ 115 VAC or 90 A @ 230 VAC at 25℃ cold start
Withstand voltage:	2000 VAC from input to output (class I) 4000VAC from input to output (class II)
MTBF:	100,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F
EMC Performance (IEC60601-1-2)	
EN55011/EN55022:	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 A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±6 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, 3 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[1]		Output						Average Active Efficiency (typical) @ 115 / 230 Vac
Class I	Class II	V1	Min. Current	Max. Current	Tol.	Ripple & Noise[2]	Max. Power	
FSP180-AHAM1		12 V	0 A	15.0 A	±5%	120 mV	180 W	85 / 87 %
FSP180-ABAM1		19 V	0 A	9.47 A	±5%	190 mV	180 W	87 / 89 %
FSP180-AAAM1	FSP180-AACM1	24 V	0 A	7.50 A	±5%	240 mV	180 W	91 / 92 %
FSP180-AKAM1		28 V	0 A	6.42 A	±5%	380 mV	180 W	91 / 92 %

NOTES:
1. Class I models are equipped with IEC320/C14 inlet, and class II models with IEC320/C8 inlet.
2. Ripple and noise is maximum peak-to-peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 47 µF electrolytic capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



NOTES:
1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Output connector is 4 pin plug without lock, mating with Kycon P/N KPJX-4S-S socket or equivalent.
4. Refer to Section titled “OPTIONAL OUTPUT CONNECTORS”.

PIN CHART

Polarity	Pin 1	Pin 2	Pin 3	Pin 4	Shield
Class-I Model	+V1	+V1	V1 Return & AC Ground	V1 Return & AC Ground	V1 Return & AC Ground
Class-II Model	+V1	+V1	V1 Return	V1 Return	V1 Return

Weight: 950 grams (2.09 lbs.) approx.

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