

DESCRIPTION

This FSP202 series of AC/DC switching power supplies in a package of 3x5 inches are capable of delivering 200 watts continuous power at 5.3 CFM forced air or 150 watts at convection cooling. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking.

FEATURES

- 3 x 5 x 1.5 inch profile
- Meet EN55011 / EN55022 and FCC Class B
- OVP, OCP, OTP protection
- Output Inhibit control & power failed indication
- Efficiency 91% typical
- Fan power 12VDC at 250 mA

INPUT SPECIFICATIONS

Input voltage: 90-264 VAC
 Input frequency: 47-63 Hz
 Input current: 2.5 A (rms) for 115 VAC
 1.25 A (rms) for 230 VAC
 Earth leakage current: 220 µA max. @ 264 VAC, 63 Hz
 Touch current: 100 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current: See rating chart.
 Total output power: See rating chart.
 Ripple and noise: 1% peak to peak maximum
 Protection:
 OVP Latch off
 OCP & Shorted Auto recovery
 OTP Latch off
 Temperature coefficient: All outputs ±0.04% /°C 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
 Fan power: 12 V at 250 mA maximum

ENVIRONMENTAL SPECIFICATIONS

Operating temperature: 0°C to +70°C
 Storage temperature: -20°C to +85°C
 Relative humidity: 5% to 95% non-condensing
 Derating: Derate from 100% at +50°C linearly to 50% at +70°C, applicable to convection and forced-air cooling conditions

FSP202 M1 SERIES



SAFETY STANDARD APPROVAL



UL 60601-1, CSA C22.2 No. 601.1
 File No. E178020



TÜV EN 60601-1

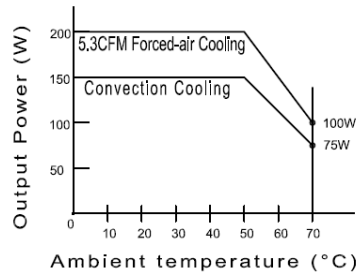
GENERAL SPECIFICATIONS

Switching frequency: 100 KHz (typical)
 Power Factor 0.98 typical
 Efficiency: Refer to rating table
 Hold-up time: 10 ms minimum at 110 VAC
 Line regulation: ±0.5% maximum at full load
 Inrush current: 20 A @ 115 VAC or 40 A @ 230 VAC, at 25°C cold start
 Withstand voltage: 5600 VDC from input to output, 2100 VDC from input to ground, 700 VDC from output to ground (To verify AC strength, get correct test Method to avoid PSU damaged)
 MTBF: 250,000 hours at full load at 25°C ambient, calculated per MIL-HDBK-217F
 EMC Performance
 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, >95% reduction for 10 ms

INTERFACE SIGNALS

- PFD:** Output signal, TTL high for normal operation, low upon loss of input power, turn-on delay time 100-1000 ms, turn-off delay time 1 ms minimum
- Inhibit:** Input signal, requires an external TTL high level to inhibit PSU outputs

OUTPUT POWER DERATING CURVE



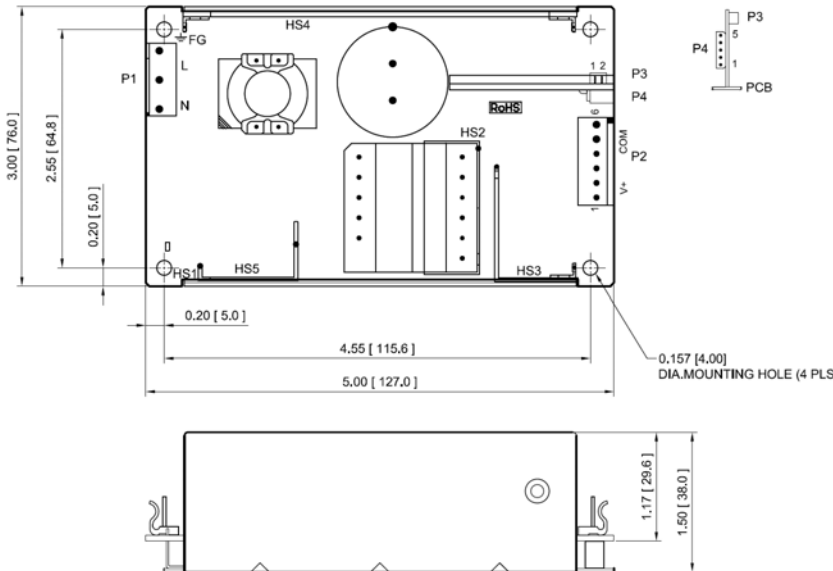
OUTPUT VOLTAGE/CURRENT RATING CHART

| Output Model ⁽¹⁾ | ut | | | | | | Efficiency (typical) | | |
|-----------------------------|------|--------------|----------------------------|--|------|---------------------|----------------------|------------------------|------------------------|
| | V1 | Min. Current | Max. Current at convection | Max. Current at 5.3 CFM ⁽²⁾ | Tol. | Ripple & Noise Max. | Power ⁽²⁾ | @ 150 W 115/230 Vac | @ 200 W 115/230 Vac |
| FSP202-1K20M1 | 12 V | 0 A | 12.50 A | 16.67 A | ±2% | 120 mV | 150 W/200 W | 88/91% | 88/90% |
| FSP202-1K30M1 | 15 V | 0 A | 10.00 A | 13.34 A | ±2% | 150 mV | 150 W/200 W | 88/91% | 88/91% |
| FSP202-1K31M1 | 18 V | 0 A | 8.34 A | 11.12 A | ±2% | 180 mV | 150 W/200 W | 88/91% | 88/91% |
| FSP202-1K40M1 | 24 V | 0 A | 6.25 A | 8.34 A | ±2% | 240 mV | 150 W/200 W | 88/91% | 88/91% |
| FSP202-1K50M1 | 28 V | 0 A | 5.36 A | 7.15 A | ±2% | 280 mV | 150 W/200 W | 88/91% | 88/91% |
| FSP202-1K70M1 | 36 V | 0 A | 4.17 A | 5.56 A | ±2% | 360 mV | 150 W/200 W | 88/91% | 88/91% |
| FSP202-1K80M1 | 48 V | 0 A | 3.13 A | 4.17 A | ±2% | 480 mV | 150 W/200 W | 89/92% | 89/92% |

NOTES:

- 150W without forced air or 200W with 5.3 CFM forced air provided by user.
- 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 10 µF tantalum capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Input connector P1: Molex header 09-65-2058 or equivalent, mating with Molex housing 09-50-1051 or equivalent.
- Output connector P2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
- Fan connector P3: Molex header 53048-0210 or equivalent, mating with Molex housing 51021-0200 or equivalent.
- Connectors P4: Molex header 22-05-7055 or equivalent, mating with Molex housing 50-37-5053 or equivalent.
- Fixing of units to end equipment is through standoffs and the four mounting holes in PCB
- Ground tab is 0.25 [6.35] × 0.032 [0.8] fast-on connector.

CONNECTOR PIN CHART

| Connector | P1 P2 | | | P3 | | | P4 | | | | | | |
|-----------|--------|-------|---------|-----|------|----------|---------------|--------|--------|-----|---------|---------------|---|
| Pin No. | FG | L | N | 1 2 | 3 4 | 5 1 | 1 | 2 | 1 | 2 | 3 | 4 | 5 |
| Polarity | Ground | Li ve | Neutral | +V1 | +12V | +12V Fan | Common Return | -Sense | -Sense | PFD | Inhibit | Common Return | |

Weight: 390 grams (0.86 lbs.) approx.