DESCRIPTION

The PUP221 series of AC/DC switching power supplies are for 180-220 watts of continuous output power. They are enclosed in a 94V-0 rated plastic case with an IEC320/C14 or IEC320/C6 inlet to mate with interchangeable cord for world-wide use. All models meet EN55022, EN55024 and FCC class B emission limits, and comply with UL, cUL, TUV and CE requirement.

PUP221 SERIES

CE

RoHS

VI

FEATURES

- No load power consumption less than 0.21 W
- Compliant with DoE level VI requirements
- Meet Energy Star EPS2.0 /ErP lot 7
- Operating altitude up to 5000 meters
- Overvoltage protection (latch)
- Short-circuit protection (auto-recovery)
- Overpower protection (auto-recovery)
- Over temperature protection (latch)
- High Efficiency
- With PFC circuit
- 100% burn-in at full rated load
- Compliant with RoHS requirements

SAFETY STANDARD APPROVALS

c UL us LISTED — UL 60950-1, CSA C22.2 No. 60950-1
File No. E190414

TÜV GS — TÜV EN 60950-1

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	3 A (rms) for 100 VAC 1.5 A (rms) for 240 VAC
Touch current:	250 μA max. @ 264 VAC, 60 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	See rating chart.
Ripple and noise:	See rating chart.
Overvoltage protection:	Set at 112-160% of its nominal output voltage.
Overcurrent protection:	All models protected to short circuit conditions
Temperature coefficient:	All outputs ±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℃
Operating humidity:	20% to 80% non-condensing
Storge humidity	10% to 90% non-condensing

GENERAL SPECIFICATIONS

Hold-up time:	10 ms minimum at 110 VAC or 240 VAC
Efficiency:	91% typical at full load
Power factor:	0.9 minimum @ 230 Vac/50 Hz, Full load
Turn on delay time:	3 s maximum at 110 VAC
Inrush current:	80 A @ 115Vac or 160A @ 230Vac at 25℃ cold start
Withstand voltage:	1500 VAC from input to output and ground
MTBF:	500,000 hours at full load at 25℃ ambient, calculated per SR332

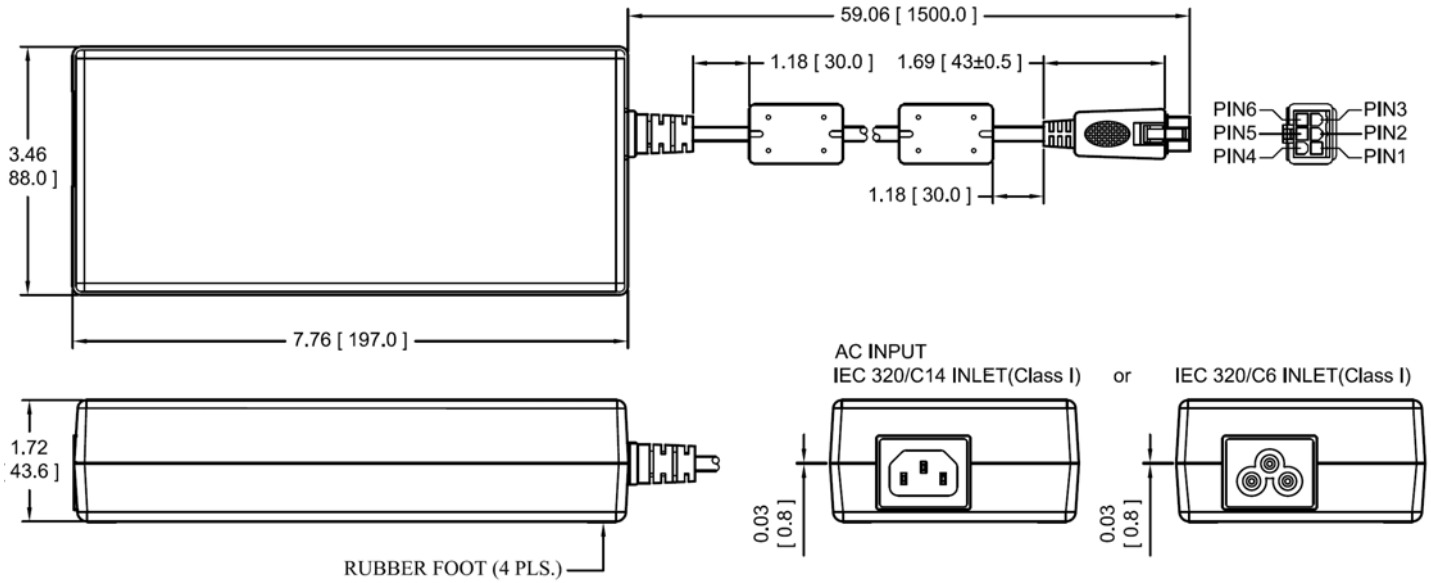
EMC Performance	
EN55022:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class D
EN61000-3-3:	Line flicker
EN55024	
EN61000-4-2:	ESD, ±15 KV air and ±8 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, ±1 KV
EN61000-4-5:	Surge, ±1 KV diff., ±2 KV com
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 1 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms and >95% reduction for 10 ms

OUTPUT VOLTAGE/CURRENT RATING CHART

Model[1]	Output						Average Active Efficiency (typical) @ 115 / 230 Vac
	V1	Minimum Current	Maximum Current	Tol.	Ripple & Noise[2]	Maximum Power	
PUP221-12	12V	0 A	15.00 A	±5%	350 mV	180 W	90 /91%
PUP221S-12	12V	0 A	15.00 A	±5%	350 mV	180 W	90 /91%
PUP221-13-2	19V	0 A	11.57 A	±5%	350 mv	220 W	91 /92%
PUP221-14	24V	0 A	9.16 A	±5%	350 mv	220 W	91 /92%

NOTES:
1. PUP221models are equipped with IEC320/C14 inlet, and PUP221S-12 with IEC320/C6 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 tantalum 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. Weight: 1000 grams (2.2 lbs.) approx.
4. V1 return (-) is electrically connected to incoming Earth Ground through a 3K ohm resistor as standard.

PIN CHART

PIN NO.	1	2	3	4	5	6
Polarity	V1 Return	V1 Return	V1 Return	+V1	+V1	+V1