

## DESCRIPTION

The PUP120N/PUP120NS/PUP150N/PUP150NS series of AC/DC switching power supplies are for 120-150 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an inlet of the IEC320/C14 or IEC320/C6 to mate with interchangeable cord for world-wide use. All model meet CISPR 22 and FCC class B emission limits, and comply with UL, CSA, IEC and CE requirements.

## FEATURES

- High Efficiency
- Low Ripple & Noise
- Overvoltage protection
- Short-circuit protection
- Overpower protection
- Over temperature protection
- 100% burn-in at full rated load
- No load power consumption less than 0.5 W
- Compliant with CEC and Energy Star efficiency level V requirements
- Compliant with RoHS requirements

## INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	50-60 Hz
Input current:	2.0 A (rms) for 115 VAC 1.0 A (rms) for 230 VAC
Touch current:	125 $\mu$ A max. @ 132 VAC, 60 Hz 250 $\mu$ A max. @ 264 VAC, 60 Hz

## OUTPUT SPECIFICATIONS

Output voltage /current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	380 mV peak to peak maximum
Overvoltage protection:	Set at 110-140% of its nominal output voltage
Overcurrent protection:	All models protected to short circuit conditions
Temperature coefficient:	All outputs $\pm 0.04\%$ / $^{\circ}$ 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

## ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0 $^{\circ}$ C to +40 $^{\circ}$ C
Storage temperature:	-20 $^{\circ}$ C to +80 $^{\circ}$ C
Relative humidity:	10% to 90% non-condensing

## PUP120N/PUP150N SERIES



CE (LVD)

RoHS



## SAFETY STANDARD APPROVALS



UL 60950-1, CSA C22.2 No. 60950-1  
File No. E190414



TUV EN 60950-1

## GENERAL SPECIFICATIONS

Hold-up time:	3 ms minimum at 100 VAC
Turn on delay time:	5 s maximum at 100 VAC
Power factor:	0.95 typical
Efficiency:	86% min at 110 VAC or 240 VAC.
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	No damage
Withstand voltage:	1500 VAC from input to output and ground
MTBF:	100,000 hours at full load at 25 $^{\circ}$ C ambient,

## 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, $\pm 8$ KV air and $\pm 4$ KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, $\pm 1$ KV
EN61000-4-5:	Surge, $\pm 1$ KV diff., $\pm 2$ 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

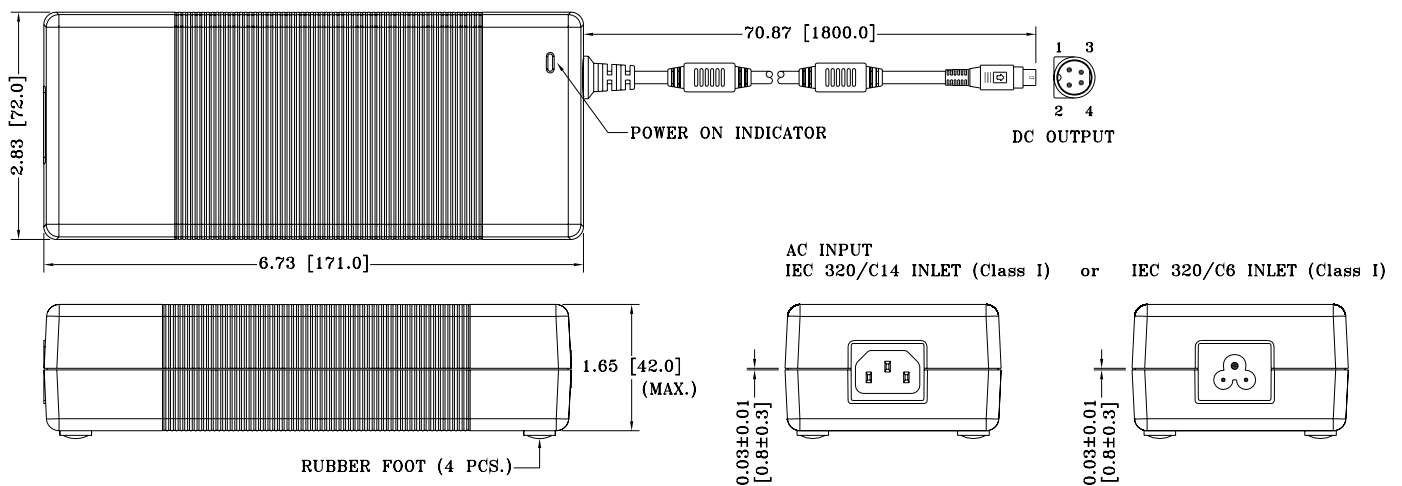
## OUTPUT VOLTAGE/CURRENT RATING CHART

Model <sup>(1)</sup>	Output						Average Active efficiency (typical) @ 115 / 230 Vac
	V1	Min. Current	Max. Current	Tol.	Ripple & Noise <sup>(2)</sup>	Max. Power	
PUP120N-12	12 V	0 A	10 A	±5%	380 mV	120 W	89 / 91 %
PUP120NS-12	12 V	0 A	10 A	±5%	380 mV	120 W	89 / 91 %
PUP150N-12	12 V	0 A	12.5 A	+3%/-7%	380 mV	150 W	89 / 90 %
PUP150NS-12	12 V	0 A	12.5 A	+3%/-7%	380 mV	150 W	89 / 90 %
PUP150N-13-2	19 V	0 A	7.89 A	±5%	380 mV	150 W	89 / 91 %
PUP150NS-13-2	19 V	0 A	7.89 A	±5%	380 mV	150 W	89 / 91 %
PUP150N-14	24 V	0 A	6.25 A	±5%	380 mV	150 W	90 / 92 %
PUP150NS-14	24 V	0 A	6.25 A	±5%	380 mV	150 W	90 / 92 %

**NOTES:**

- PUP120N/PUP150N models are equipped with IEC320/C14 inlet, and PUP120NS/PUP150NS models with IEC320/C6 inlet.
- 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
- Weight: 800 grams (1.76 lbs.) approx.
- Refer to Section titled "OPTIONAL OUTPUT CONNECTORS". Change suffix assigned for a selected connector to a wanted model number, e.g. PUP150N-14-B1, for ordering.
- The length of output cable for output voltage 12V is 37.4 (950.0).

## PIN CHART

MODEL	PIN	1	2	3	4	SHELL OF CONNECTOR
PUP120N-12	PUP150N-13-2	+V1	+V1	V1 Return & AC Ground	V1 Return & AC Ground	V1 Return & AC Ground
PUP120NS-12	PUP150NS-13-2					
PUP150N-12	PUP150N-14					
PUP150NS-12	PUP150NS-14					