

DESCRIPTION

The PUP31/40/50 series of AC-DC switching power supplies are for 20-50 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC320/C14 inlet to mate with interchangeable cord for world-wide use. All models 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
- Overcurrent protection
- 100% burn-in at full rated load
- Compliant with CEC and Energy Star efficiency level V requirements
 - * No load power consumption less than 0.3 W
 - * Average active efficiency: See Output Voltage/Current Rating Chart in next page
- Compliant with RoHS requirements

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	50-60 Hz
Input current:	PUP31-10, PUP40-10: 1.0 A (rms) for 115 VAC, 0.6 A (rms) for 230 VAC PUP31-11, -12, -14, -18 and PUP40-11, -12, -14, -18: 1.3A (rms) for 115 VAC, 0.7 A (rms) for 230 VAC PUP50-18: 1.5A (rms) for 115 VAC, 0.8 A (rms) for 230 VAC
Touch current:	250 μ A max. @ 264 VAC, 60 Hz

OUTPUT SPECIFICATIONS

Output voltage /current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	1.5% peak to peak on 5V models 1.2% peak to peak on 9V models 1% peak to peak on other models
Overvoltage protection:	Set at 110-140% of its nominal output voltage
Overcurrent protection:	Set at 160-320% of its nominal output current
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 +60 $^{\circ}$ C
Operating humidity:	20% to 80% non-condensing
Storage humidity:	10% to 80% non-condensing

PUP31/40/50 SERIES



CE (LVD)

RoHS



SAFETY STANDARD APPROVALS



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



TÜV EN 60950-1

GENERAL SPECIFICATIONS

Hold-up time:	5 ms minimum at 115 VAC
Turn on delay time:	4 s maximum at 115 VAC
Efficiency:	70% min. on 5V models 75% min. on 9V models 82% min. on other models
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	100 A @ 115 VAC or 200 A @ 230 VAC at 25 $^{\circ}$ C cold start
Withstand voltage:	1800 VAC from input to ground and output
MTBF:	150,000 hours at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK- 217F

EMC Performance

EN55022(CISPR 22):	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 ± 4 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

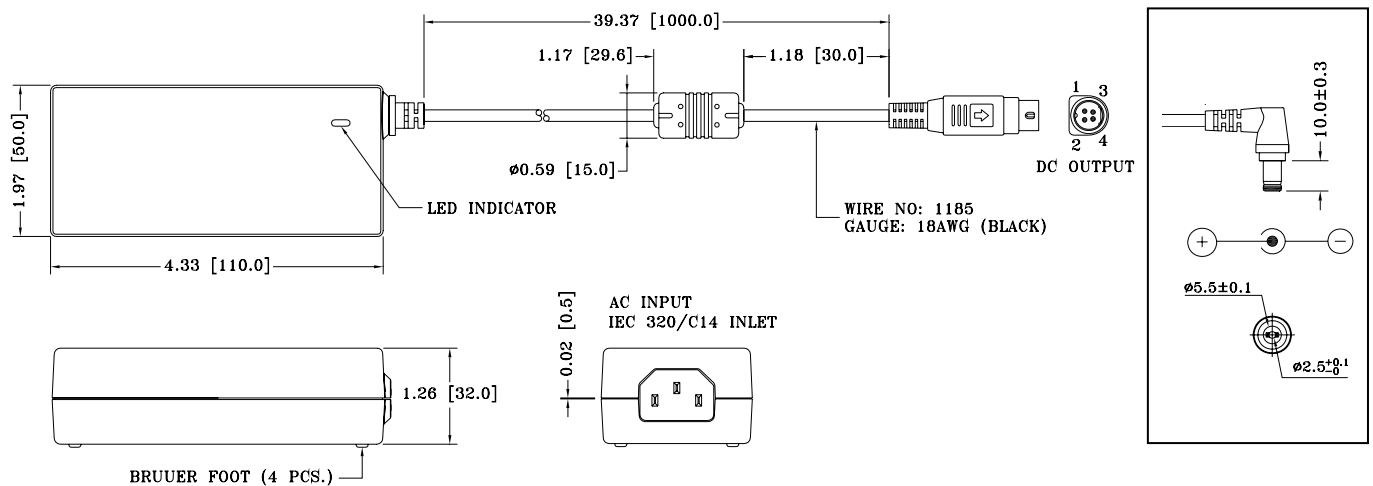
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output						Average efficiency (typical) @ 115 / 230 Vac
	V1	Min. Current	Max. Current	Tol.	Ripple & Noise ⁽¹⁾	Max. Power	
PUP31-10	5 V	0 A	4.00 A	±6%	75 mV	20 W	80/79 %
PUP31-11	9 V	0 A	3.33 A	±5%	100 mV	30 W	85/85 %
PUP31-12	12 V	0 A	2.50 A	±5%	120 mV	30 W	86/85 %
PUP31-14	24 V	0 A	1.25 A	±5%	240 mV	30 W	88/88 %
PUP31-18	48 V	0 A	0.63 A	±5%	480 mV	30 W	87/87 %
PUP40-10	5 V	0 A	5.00 A	±5%	75 mV	25 W	82/81 %
PUP40-11	9 V	0 A	4.44 A	±5%	100 mV	40 W	87/86 %
PUP40-12	12 V	0 A	3.33 A	±5%	120 mV	40 W	86/86 %
PUP40-14	24 V	0 A	1.67 A	±5%	240 mV	40 W	88/88 %
PUP40-18	48 V	0 A	0.83 A	±5%	480 mV	40 W	89/89 %
PUP50-18	48 V	0 A	1.04 A	±5%	480 mV	50 W	89/88 %

NOTES:

- 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:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Output plug: Din plug 4 pins circular connector is used for PUP31-10 and PUP40-10. Barrel female connector is used for PUP31-11, -12, -14, -18, PUP40-11, -12, -14, -18 and PUP50-18.
- Weight: 255.80 grams (0.5627 lbs.) approx.

PIN CHART

MODEL \ PIN	1	2	3	4	Shield
PUP31-10 PUP40-10	+V1		V1 Return & AC Ground		

MODEL		CONNECTION
PUP31-11	PUP40-11	
PUP31-12	PUP40-12	
PUP31-14	PUP40-14	
PUP31-18	PUP40-18	
	PUP50-18	