



50-55 WATT SWITCHING POWER SUPPLIES

DESCRIPTION

The PUP56 series of AC/DC switching power supplies are for 50 to 55 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC 320 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.

PUP56 SERIES



FEATURES

- Optional on/off switch
- Optional output connectors
- 100% burn-in at full rated load
- Wide input range 85 to 264 VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection



INPUT SPECIFICATIONS

Input voltage : 85 to 264 VAC
 Input frequency : 47 to 63 Hz
 Input current : 1.22A (rms) for 115VAC
 0.76A (rms) for 230VAC
 Leakage current : 0.47mA max. @ 115VAC, 60Hz
 0.85mA max. @ 230VAC, 50Hz

Safety Standard Approvals :



UL 60950-1, CSA C22.2 NO. 60950-1
File No. E137410



TÜV EN60950-1
Certificate No. S9853218

OUTPUT SPECIFICATIONS

Output voltage/current : See rating chart
 Output power range : 55 watts maximum
 Ripple and noise : 1% peak to peak maximum
 Overvoltage protection : Provided on output; set at 112 - 132% of its nominal output voltage
 Overcurrent protection : Output protected to short circuit conditions
 Temperature coefficient : Output $\pm 0.04\%/^{\circ}\text{C}$ maximum
 Transient response : Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500us after a 25% step load change

GENERAL SPECIFICATIONS

Switching frequency : 83KHz $\pm 10\text{KHz}$
 Efficiency : 75% minimum on all models
 Hold-up time : 10 msec minimum at 110VAC
 Line regulation : $\pm 0.5\%$ maximum at full load
 Inrush current : 15 amps @ 115VAC, or 30 amps @ 230VAC, at 25°C cold start
 Withstand voltage : 3000VAC from input to output
 1500VAC from input to ground
 500VAC from output to ground
 MTBF : 400,000 hours minimum at full load at 25°C ambient, calculated per MIL-HDBK-217F

EMC performance (EN55024)

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
 EN61000-3-3: Line flicker
 EN61000-4-2: ESD, $\pm 8\text{KV}$ air and $\pm 4\text{KV}$ contact
 EN61000-4-3: Radiated immunity, 3V/m
 EN61000-4-4: Fast transient/burst, $\pm 1\text{KV}$
 EN61000-4-5: Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ com.
 EN61000-4-6: Conducted immunity, 3Vrms
 EN61000-4-8: Magnetic field immunity, 1A/m
 EN61000-4-11: Voltage dips, 30% reduction for 500ms and >95% reduction for 10ms

ENVIRONMENTAL SPECIFICATIONS

Operating temperature : 0°C to +60°C
 Storage temperature : -40°C to +85°C
 Relative humidity : 5% to 95% non-condensing
 Derating : Derate from 100% at +40°C linearly to 50% at +60°C

3-5

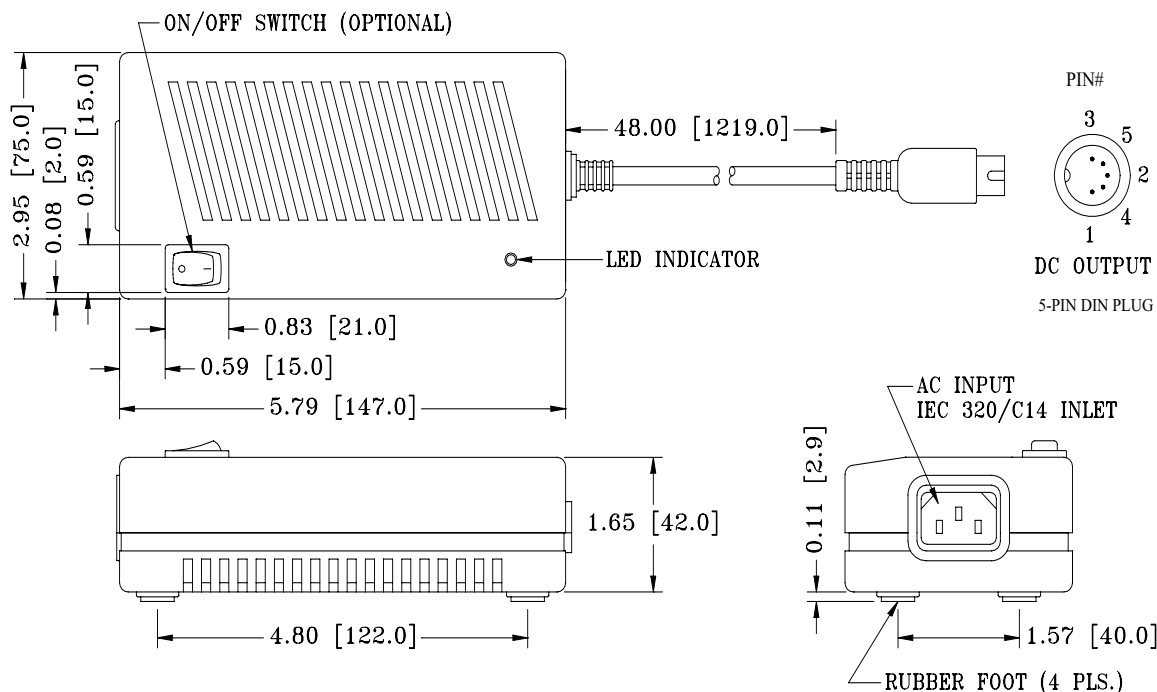
PROTEK

OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Vnom.	Output		Tol.	Maximum Output Power
		Imin.	Imax.		
PUP56-12	11-13V	0A	4.2A	3%	50W
PUP56-13	13-17V	0A	3.7A	3%	55W
PUP56-13-1	17-21V	0A	3.1A	3%	55W
PUP56-14	21-27V	0A	2.3A	3%	55W
PUP56-16	27-33V	0A	1.9A	3%	55W
PUP56-17	33-39V	0A	1.6A	3%	55W
PUP56-18	48V	0A	1.2A	3%	55W

Notes: The output voltage of all models, except PUP56-18, can be adjusted by user in the rated range, or set by factory to a wanted value in the range at the request of a user when ordering.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 550 grams approx.
4. See pages 6-1 to 6-8 for optional output connectors. Add the suffix assigned for a selected connector to a wanted model number, e.g. PUP56-12-B1, for ordering.

PIN CHART

MODEL \ PIN	1	2	3	4	5
	PUP56-12 PUP56-13 PUP56-13-1 PUP56-14	RETURN	RETURN	OUTPUT #1	RETURN
PUP56-16 PUP56-17 PUP56-18	RETURN	RETURN	OUTPUT #1	RETURN	OUTPUT #1

MEMO: