



# 60-130 WATT DESKTOP POWER ADAPTERS

## DESCRIPTION

The PUP60/80/130 series of AC/DC switching power supplies are for 60 to 130 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. An on/off switch can be added at request. All models meet CISPR 22 and FCC class B emission limits, and comply with UL, CSA, IEC and CE requirements.

## FEATURES

- Optional output connectors
- Optional on/off switch
- 100% burn-in at full rated load
- Auto-ranging input
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Thermal protection

## INPUT SPECIFICATIONS

|                          |  |
|--------------------------|--|
| <b>Input voltage :</b>   | 90 to 130 VAC or 180 to 260 VAC<br>(auto-ranging)        |
| <b>Input frequency :</b> | 47 to 63 Hz  |
| <b>Input current :</b>   |  |
| <b>PUP60/80 Series:</b>  | 1.8A ( rms ) for 115VAC<br>1.0A ( rms ) for 230VAC       |
| <b>PUP130 Series:</b>    | 3.0mA (rms) for 115VAC<br>1.7A ( rms ) for 230VAC        |
| <b>Leakage current :</b> | 0.40mA max. @ 115VAC, 60Hz<br>0.80mA max. @ 230VAC, 50Hz |

## OUTPUT SPECIFICATIONS

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


## ENVIRONMENTAL SPECIFICATIONS

|                                |  |
|--------------------------------|--|
| <b>Operating temperature :</b> | 0 $^{\circ}\text{C}$ to +40 $^{\circ}\text{C}$ (PUP60/80 series)<br>0 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$ (PUP130 series) |
| <b>Storage temperature :</b>   | -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$   |
| <b>Relative humidity :</b>     | 5% to 95% non-condensing   |

## PUP60/80/130 SERIES (LVD+EMC)



## Safety Standard Approvals :

 **UL 60950-1**  
**CSA C22.2 No. 60950-1**

 **TÜV EN60950-1**

## GENERAL SPECIFICATIONS

|                                  |  |
|----------------------------------|--|
| <b>Switching frequency :</b>     | 60KHz to 75KHz   |
| <b>Efficiency :</b>              | 70 % minimum on $V_o \geq 12V$ ,<br>65% minimum on the others  |
| <b>Hold-up time :</b>            |  |
| <b>PUP60/80 SERIES:</b>          | 15 msec minimum at 110VAC  |
| <b>PUP130 SERIES:</b>            | 10 msec minimum at 110VAC  |
| <b>Line regulation :</b>         | $\pm 0.5\%$ maximum at full load   |
| <b>Inrush current :</b>          | 15 amps @ 115VAC, or 30 amps @ 230VAC, at 25 $^{\circ}\text{C}$ cold start   |
| <b>Withstand voltage :</b>       | 3000VAC from input to output<br>1500VAC from input to ground<br>500VAC from output to ground   |
| <b>MTBF :</b>                    | PUP60/PUP80 300,000 hours minimum, PUP130 400,000 hours minimum at full load at 25 $^{\circ}\text{C}$ ambient, calculated per MIL-HDBK-217F, excluding DC fan. |
| <b>EMC performance (EN55024)</b> |  |
| <b>EN55022:</b>                  | Class B conducted, class B radiated  |
| <b>FCC:</b>                      | Class B conducted, Class B radiated  |
| <b>VCCI:</b>                     | Class B conducted, Class B radiated  |
| <b>EN61000-3-2:</b>              | Harmonic distortion, Class A   |
| <b>EN61000-3-3:</b>              | Line flicker   |
| <b>EN61000-4-2:</b>              | ESD, $\pm 8\text{KV}$ air and $\pm 4\text{KV}$ contact   |
| <b>EN61000-4-3:</b>              | Radiated immunity, 3V/m  |
| <b>EN61000-4-4:</b>              | Fast transient/burst, $\pm 1\text{KV}$   |
| <b>EN61000-4-5:</b>              | Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ com.   |
| <b>EN61000-4-6:</b>              | Conducted immunity, 3Vrms  |
| <b>EN61000-4-8:</b>              | Magnetic field immunity, 1A/m  |
| <b>EN61000-4-11:</b>             | Voltage dips, 30 % reduction for 500ms and >95% reduction for 10ms   |

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# AUTORANGING INPUT PUP60/PUP80/PUP130 SERIES

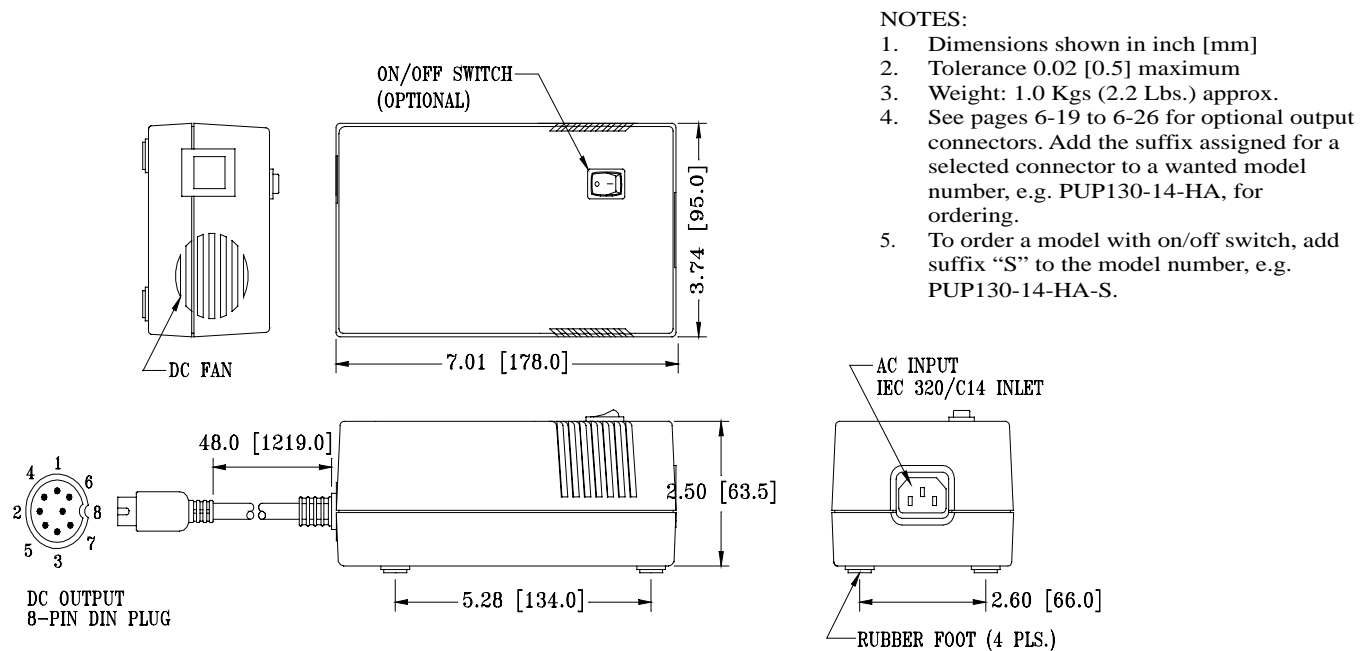
## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model       | Vnom. | Output |       |  | Tol. | Output Power |
|-------------|-------|--------|-------|--|------|--------------|
|             |       | Imin.  | Imax. |  |      |              |
| PUP60-10    | 5V    | 0A     | 12A   |  | 5%   | 60W          |
| PUP60-10-1  | 7V    | 0A     | 8.6A  |  | 5%   | 60W          |
| PUP60-11    | 10V   | 0A     | 6A    |  | 5%   | 60W          |
| PUP80-12    | 12V   | 0A     | 6.7A  |  | 4%   | 80W          |
| PUP80-13    | 15V   | 0A     | 5.3A  |  | 3%   | 80W          |
| PUP80-13-1  | 18V   | 0A     | 4.5A  |  | 3%   | 80W          |
| PUP80-14    | 24V   | 0A     | 3.4A  |  | 3%   | 80W          |
| PUP80-16    | 30V   | 0A     | 2.7A  |  | 2%   | 80W          |
| PUP80-17    | 36V   | 0A     | 2.3A  |  | 2%   | 80W          |
| PUP80-18    | 48V   | 0A     | 1.7A  |  | 2%   | 80W          |
| PUP130-12   | 12V   | 0A     | 10.8A |  | 5%   | 130W         |
| PUP130-13   | 15V   | 0A     | 8.6A  |  | 4%   | 130W         |
| PUP130-13-1 | 18V   | 0A     | 7.2A  |  | 4%   | 130W         |
| PUP130-14   | 24V   | 0A     | 5.4A  |  | 3%   | 130W         |
| PUP130-16   | 30V   | 0A     | 4.3A  |  | 3%   | 130W         |
| PUP130-17   | 36V   | 0A     | 3.6A  |  | 2%   | 130W         |
| PUP130-18   | 48V   | 0A     | 2.7A  |  | 2%   | 130W         |

Notes: (1) PUP60 and PUP80 series are without, while PUP130 series are with, built-in fan.

(2) PUP60 series are with remote sense. The other series can also be equipped with remote sense. Please consult factory.

## MECHANICAL SPECIFICATIONS



### NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 1.0 Kgs (2.2 Lbs.) approx.
4. See pages 6-19 to 6-26 for optional output connectors. Add the suffix assigned for a selected connector to a wanted model number, e.g. PUP130-14-HA, for ordering.
5. To order a model with on/off switch, add suffix "S" to the model number, e.g. PUP130-14-HA-S.

## PIN CHART

| MODEL  | PIN   | 1                    | 2          | 3         | 4      | 5         | 6      | 7         | 8         |
|--|---|----------------------|------------|-----------|--------|-----------|--------|-----------|-----------|
|  |   | PUP60-10<br>PUP60-11 | PUP60-10-1 | RETURN    | -SENSE | OUTPUT +V | RETURN | OUTPUT +V | RETURN    |
| PUP80-12<br>PUP80-13-1<br>PUP80-16<br>PUP80-18 | PUP80-13<br>PUP80-14<br>PUP80-17<br>PUP130-12 | RETURN               | RETURN     | OUTPUT +V | RETURN | OUTPUT +V | RETURN | OUTPUT +V | OUTPUT +V |
| PUP130-13<br>PUP130-14<br>PUP130-17            | PUP130-13-1<br>PUP130-16<br>PUP130-18         |                      |            |           |        |           |        |           |           |