

## Features:

- IEC 60601-1-2 4th Edition Compliant
- UL/EN60601-1 and UL/EN62368-1 Medical and ITE Approvals
- High power density: 280W in 3" x 5" footprint
- Active Power Factor Correction
- 5Vsb meets ErP 0.5W @ No load requirement
- <100uA @ 264VAC Earth Leakage Current
- 5000m altitude operation



## Description:

The PPWAM280 series of compact, open-framed AC-DC switching power supplies offers a high power density to fit in a small space. This dense 5" x 3" platform offers up to 280W of continuous power across a wide range of operating temperatures, all while maintaining a low emissions profile. All models meet FCC, EN55011, and EN55032 class B emission limits, and comply with UL, CE, IEC, and more.

Model <sup>1</sup>	Output Voltage (V1)	Max Load Convection <sup>2</sup> (V1)	Max Load 18CFM Forced Air <sup>2</sup> (V1)	Output Regulation (V1)	Ripple & Noise (V1) <sub>3</sub>	Standby Power (V2)	Fan Output (V3)
PPWAM280-12	12V	17.5A	23.33A	±3%	150mV	5V/0.5A	12V/0.3A
PPWAM280-14	24V	8.75A	11.66A	±3%	240mV	5V/0.5A	12V/0.3A
PPWAM280-15	28V	7.5A	10A	±2%	280mV	5V/0.5A	12V/0.3A
PPWAM280-17	36V	5.83A	7.78A	±2%	300mV	5V/0.5A	12V/0.3A
PPWAM280-18	48V	4.375A	5.83A	±2%	300mV	5V/0.5A	12V/0.3A
PPWAM280-18-1	54V	3.88A	5.18A	±2%	400mV	5V/0.5A	12V/0.3A

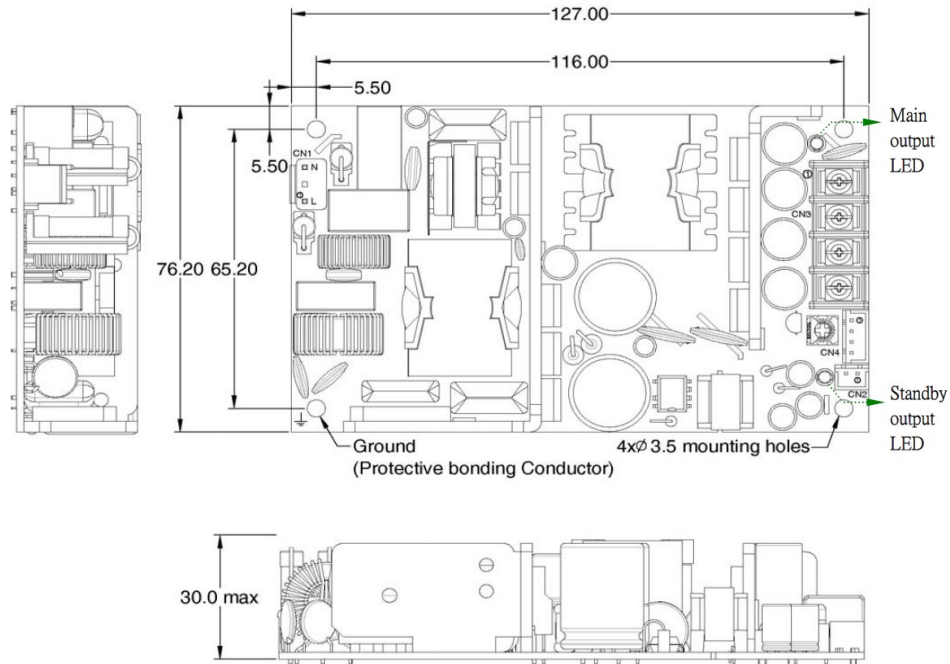
### NOTES:

1. Output Connector types: For Molex header type, part number is PPWAM280-XX-H. For Molex Mini-Fit type, part number is PPWAM280-XX-M. Due to high output current, it is recommended to connect all output pins or lugs on 12V model. To order models with U-bracket assembly, add suffix "B" to part number, for example PPWAM280-12B. To order models with full enclosure assembly, add suffix "C" to part number, for example PPWAM280-12C.
2. Convection cooled open frame models provide 210W output power. Convection cooled U-bracket or Enclosed models provide 200W output power.
3. At 25°C including initial tolerance, line voltage, load currents and output voltages adjusted to factory settings.

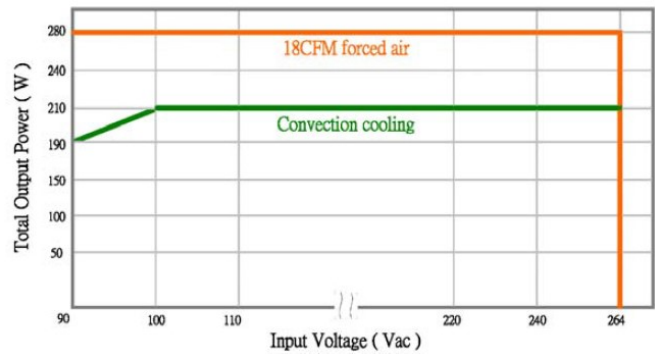
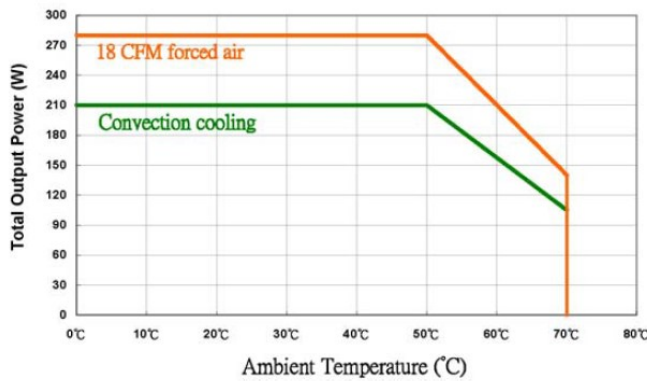
<b>Specifications</b>	
<b>Input</b>	
Input Voltage	90-264VAC
Input Frequency	47-63 Hz
Input Current	3.5A @115Vac 2A @230VAC max.
Inrush Current	<30A peak @ 115VAC <60A peak @ 230VAC, cold start, 25°C
Power Factor	0.95 @115Vac; >0.90 @230VAC full load
No Load Power Consumption	0.5W max. @230VAC
<b>Output</b>	
Total Output Power	280W max
Hold Up Time	10mS typical at full load and 115VAC nominal line
Efficiency	91% typical, full load, 230VAC
Minimum Load	No Minimum Load
<b>Protection Features</b>	
Overvoltage Protection	105-160% of nominal output voltage. Latching type, AC Recycle
Overload	105%-150% of maximum output rating Auto Recovery
Short Circuit	Auto recovery
<b>Environmental</b>	
Operating Temperature	0°C to +70°C (Derate linearly by 2.5% per °C from 51 to 70°C for open frame models, or from 41 to 70°C for U-bracket or Enclosed)
Storage Temperature	-20°C to +85°C
Operating Humidity	0% - 90% non-condensing
Operating Altitude	<5000m, <3000m for medical use
<b>General Specifications</b>	
Dimensions	3" x 5" x 1.18"
Weight	0.775lbs
MTBF	>250K hours per MIL-HDBK-217F at full load and 25°C ambient

<b>Specifications Continued</b>	
<b>Safety</b>	
Approved to USA/Canada	UL60601-1 3rd Edition UL/cUL60950-1
Approved to Europe	IEC/EN60601-1 3rd edition TUV EN60950-1 CB Report
Earth Leakage Current	<100uA max. @ 264VAC
Withstand Voltage	4000VAC input to output, 2 x MOPP 1500VAC input to ground, 1 x MOPP 1500VAC output to ground, 1 x MOPP
*Consult with TT Electronics for information on additional country safety approvals	
<b>EMC</b>	
Emissions	FCC Class B Radiated & Conducted EN55011/55032 Class B Radiated & Conducted
Harmonic Currents	IEC 61000-3-2
Voltage Flicker	IEC 61000-3-3
Electrostatic Discharge	IEC 61000-4-2: 15kV Air, 8kV contact
Radiated Immunity	IEC 61000-4-3: 10V/m
EFT	IEC 61000-4-4: ±2kV
Surge Immunity	IEC 61000-4-5: 2005 1kV diff, 2kV com
Conducted Immunity	IEC 61000-4-6: 10Vrms
Power Frequency Magnetic Field Immunity	IEC 61000-4-8: 30A/m
Dips/Interruptions	IEC 61000-4-11: 30% reduction for 500ms, 100% reduction for 10ms.

## Diagrams

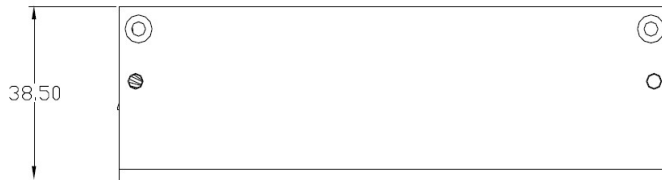
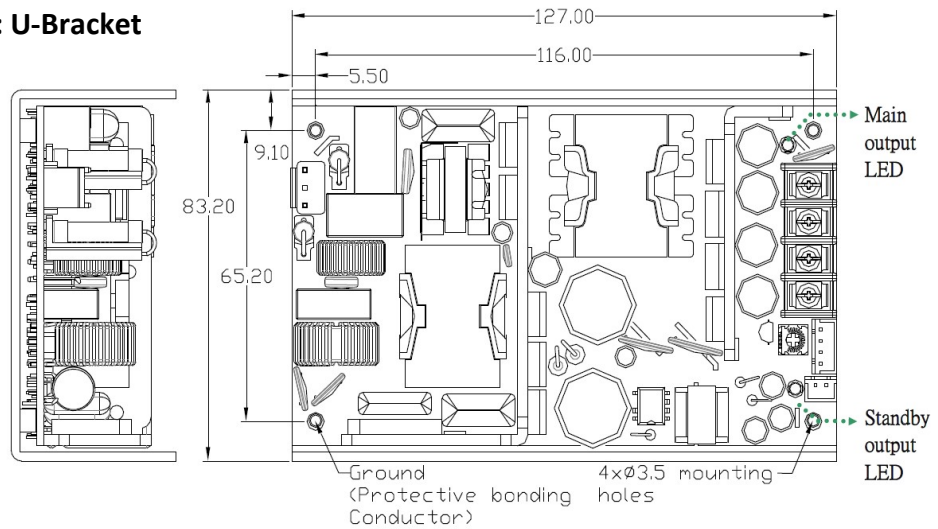


## OUTPUT POWER DERATING CURVE

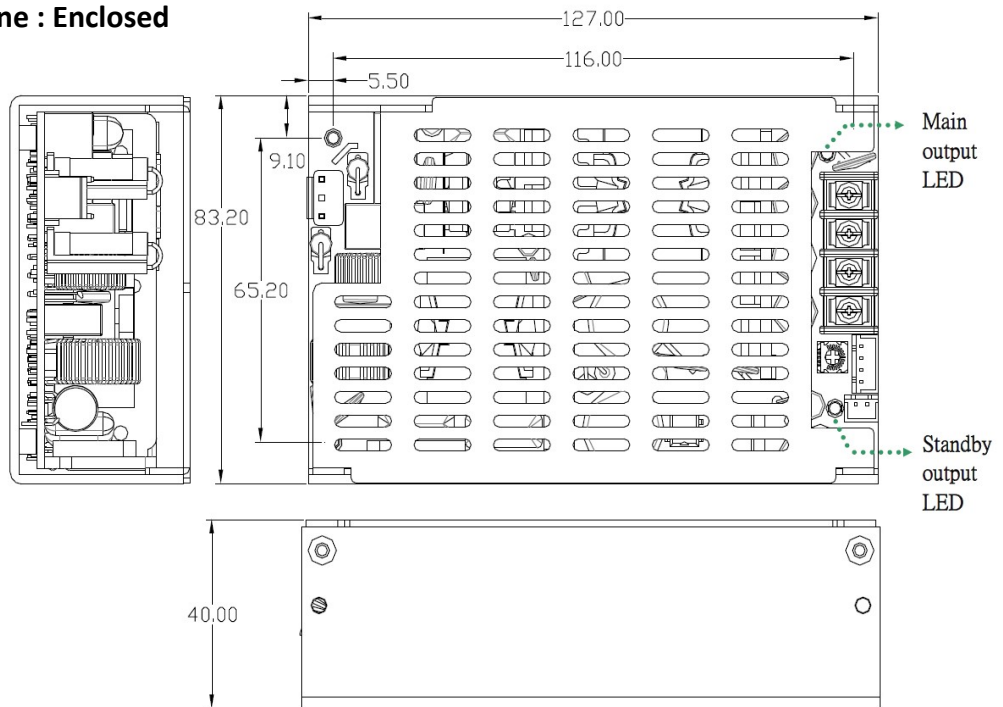


## Diagrams

### Mechanical Outline : U-Bracket

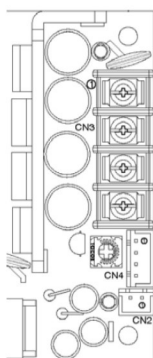


### Mechanical Outline : Enclosed



## Output Connector Options

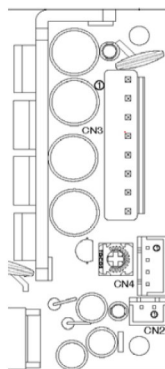
**Terminal Block (Standard)**



4-Pole Terminal block pitch: 8.25mm rate 20A/300V or equivalent

Pin #	Signal
1	GND
2	GND
3	+Vout
4	+Vout

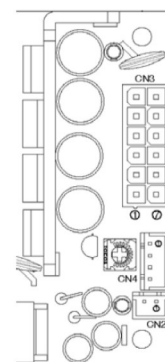
**Molex Header (Option H)**



JST B8P-VH-B pitch: 3.96mm or equivalent, mates with JST VHR-8N or equivalent

Pin #	Signal	Pin #	Signal
1	GND	5	+Vout
2	GND	6	+Vout
3	GND	7	+Vout
4	GND	8	+Vout

**Molex Mini Fit (Option M)**



12 PIN Min Fit Pitch: 4.2mm . Molex P/N 39-28-1123 or equivalent.

Pin #	Signal	Pin #	Signal
1	+Vout	7	+Vout
2	+Vout	8	+Vout
3	+Vout	9	+Vout
4	GND	10	GND
5	GND	11	GND
6	GND	12	GND

## Connector Information Continued

**CN1: Input Connector**

JST B2P3-VH pitch: 3.96mm or equivalent, mates with JST VAR-2 or equivalent

Pin #	Signal
1	AC Line
2	AC Neutral

**CN2: FAN Output Connector**

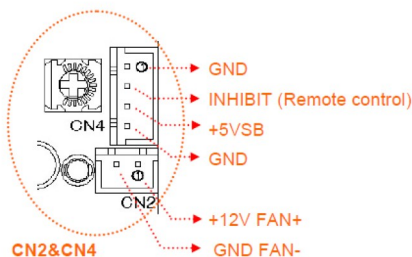
JST B2B-XH-A pitch: 2.5mm or equivalent, mates with JST XHP-2 or equivalent

Pin #	Signal
1	+12V FAN+
2	GND FAN-

**CN4: Remote control & Standby supply**

JST B4B-XH-A pitch: 2.5mm or equivalent, mates with JST XHP-4 or equivalent

Pin #	Signal
1	GND
2	INHIBIT (Remote control)
3	+5VSB
4	GND



INHIBIT → Logic level HIGH (5V) or Floating : Enable, Logic level LOW : Disable