DESCRIPTION

The PU202 series of AC-DC switching power supplies in a package of 3 x 5 x 1.5 inches are capable of delivering 200 watts of continuous power at 5.3 CFM forced air cooling or 150 watts at convection cooling. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking. A cover-and-fan assembly can be added during manufacturing for 200 watt output. The units are certified to IEC/EN/UL/CSA 62368-1 and suitable for data networking, computer, telecommunication, audio/video and industrial applications.

PU202 SERIES

CE (LVD)

RoHS

FEATURES

- 3 x 5 inch footprint with 1.5 inch low profile
- 90-264 VAC input with active PFC
- Meet EN55032 and FCC Class B emissions
- Power Factor 0.98 typical
- Short-circuit protection
- Power Fail Detect (PFD) signal
- Inhibit - TTL high to disable output
- Compliant with RoHS requirements
- Efficiency greater than 87%

SAFETY STANDARD APPROVAL

UL 62368-1, CSA C22.2 No. 62368-1

TÜV EN 62368-1

INPUT SPECIFICATIONS

Input voltage:	90-264 VAC
Input frequency:	47-63 Hz
Input current:	2.5 A (rms) for 115 VAC 1.25 A (rms) for 230 VAC
Earth leakage current:	220 μA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	See rating chart.
Ripple and noise:	1% peak to peak maximum
Remote sense:	Compensation for cable losses up to 0.5 V
Overvoltage protection:	set at 112-140% of its nominal output voltage
Overcurrent protection:	Output protected to short circuit conditions
Temperature coefficient:	All outputs ±0.04% /℃ 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
Fan power:	12 V at 250 mA maximum

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	0℃ to +70℃
Storage temperature:	-40℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Temperature derating:	Derate from 100% at +50℃ linearly to 50% at +70℃, applicable to convection and forced-air cooling conditions

GENERAL SPECIFICATIONS

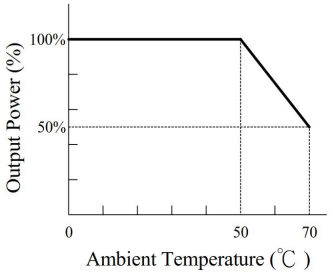
Switching frequency:	100 KHz (typical)
Efficiency:	87% minimum on all models
Hold-up time:	10 ms minimum at 110 VAC
Line regulation:	±0.5% maximum at full load
Inrush current:	20 A @ 115 VAC or 40 A @ 230 VAC, at 25℃ cold start
Withstand voltage:	4242 VDC from input to output, 2500 VDC from input to ground, 707 VDC from output to ground
MTBF:	200,000 hours at full load at 25℃ ambient, calculated per MIL-HDBK-217F
EMC Performance	
EN55032:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN55024	
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

INTERFACE SIGNALS

PFD: TTL high for normal operation, low upon loss of input power, turn-on delay time 100-1000 ms, turn-off delay time 1 ms minimum

Inhibit: TTL high to turn off output

OUTPUT POWER DERATING CURVE



OUTPUT VOLTAGE/CURRENT RATING CHART

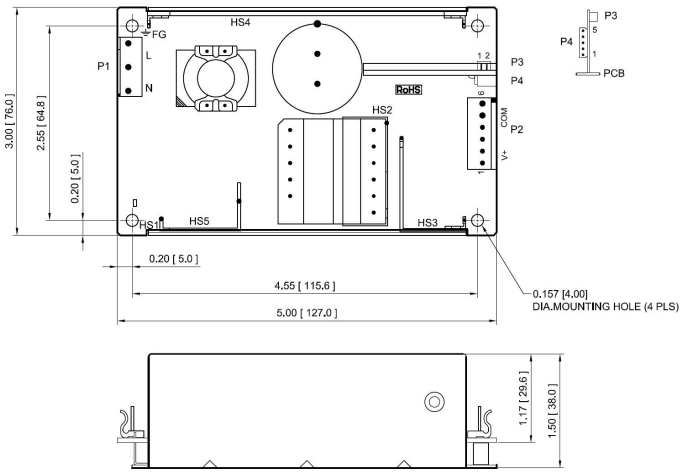
	Output							Efficiency (typical)	
Model(1)	V1	Min. Current(4)	Max. Current at convection	Max. Current at 5.3 CFM (2)	Tol.	Ripple & Noise(3)	Max. Power(2)	@ 150 W 115/230 Vac	@ 200 W 115/230 Vac
PU202-12B	12 V	0.1 A	12.50 A	16.67 A	±2%	120 mV	150 W/200 W	88/91%	88/90%
PU202-13B	15 V	0.1 A	10.00 A	13.34 A	±2%	150 mV	150 W/200 W	88/91%	88/91%
PU202-13-1B	18 V	0.1 A	8.34 A	11.12 A	±2%	180 mV	150 W/200 W	88/91%	88/91%
PU202-14B	24 V	0.1 A	6.25 A	8.34 A	±2%	240 mV	150 W/200 W	88/91%	88/91%
PU202-15B	28 V	0.1 A	5.36 A	7.15 A	±2%	280 mV	150 W/200 W	88/91%	88/91%
PU202-17B	36 V	0.1 A	4.17 A	5.56 A	±2%	360 mV	150 W/200 W	88/91%	88/91%
PU202-18B	48 V	0.1 A	3.13 A	4.17 A	±2%	480 mV	150 W/200 W	89/92%	89/92%

NOTES:

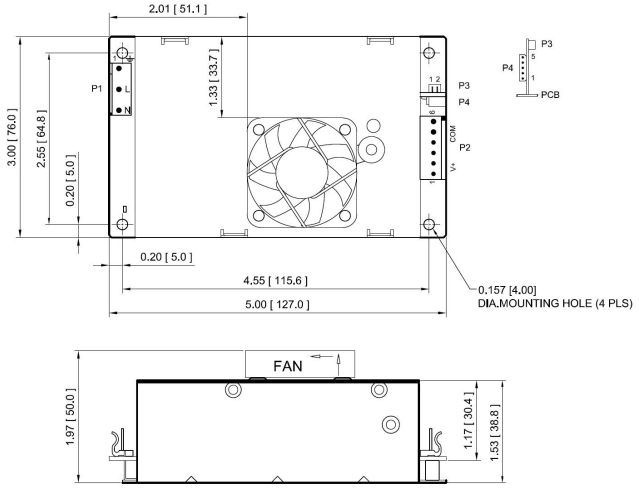
1. Suffix “B” in model numbers denotes U-bracket form. Change suffix “B” to “C” for enclosed form with cover-and-fan assembly, e.g. PU202-14C
2. 150 W without moving air or 200 W with 5.3 CFM forced air provided by user for “B” version, 200 W for “C” version with cover-and-fan assembly. The adequacy of cooling air is judged by the measured core temperature of transformer T1 below 75℃ at 25℃ ambient, or below 100℃ at 50℃ ambient.
3. 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.
4. All models may be operated at no-load without damage. At no load, output voltage fluctuates beyond 5% due to the burst-mode operation of the control IC in them for energy saving.

MECHANICAL SPECIFICATIONS

U-bracket Form



Enclosed Form



NOTES:

1. Dimensions shown in inches [mm], tolerance 0.02 [0.5] maximum.
2. Input connector P1: Molex header 09-65-2058 or equivalent, mating with Molex housing 09-50-1051 or equivalent.
3. Output connector P2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
4. Fan connector P3: JST header S2B-ZR-3.4 or equivalent, mating with JST housing ZHR-2 or equivalent.
5. Connectors P4: Molex header 22-05-7055 or equivalent, mating with Molex housing 50-37-5053 or equivalent.
6. Weight: 390 grams (0.86 lbs.) approx. for U-bracket form, 440 grams (0.97 lbs.) for enclosed form
7. Fixing of units to end equipment is through standoffs and the four mounting holes in PCB.
8. Ground tab is 0.25 [6.35] × 0.032 [0.8] fast-on connector.

PIN CHART

CONN / PIN / MODEL	P1					P2					
	1	2	3	4	5	1	2	3	4	5	6
PU202-12B PU202-15B PU202-13B PU202-17B PU202-13-1B PU202-18B PU202-14B	Ground	Void	Live	Void	Neutral	+V1			Common Return		

CONN / PIN / MODEL	P3		P4				
	1	2	1	2	3	4	5
PU202-12B PU202-15B PU202-13B PU202-17B PU202-13-1B PU202-18B PU202-14B	+12V Fan	Common Return	-Sense	+Sense	PFD	Inhibit	Common Return