



## 200 WATT SWITCHING POWER SUPPLIES

### DESCRIPTION

The PU200 series comprises single and multiple output models for 200 watts of continuous output power. Auto-ranging input allows them to operate from any line voltage throughout the world without a selector strap. All auxiliary outputs are with magnetic amplifier or linear regulator to keep regulation. 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.

### FEATURES

- Auto-ranging input
- Overvoltage protection
- Short-circuit protection with auto-recovery
- Power Fail Detect  PFD  signal
- 100  burn-in at full rated load
- Optional cover-and-fan assembly

### INPUT SPECIFICATIONS

- Input voltage**  90 to 130 VAC, or 180 to 264 VAC  auto-ranging
- Input frequency**  47 to 63 Hz
- Input current**  4.5A  rms  for 115VAC  
2.6A  rms  for 230VAC
- Leakage current**  0.4mA max. @ 115VAC, 60Hz  
0.8mA max. @ 230VAC, 50Hz

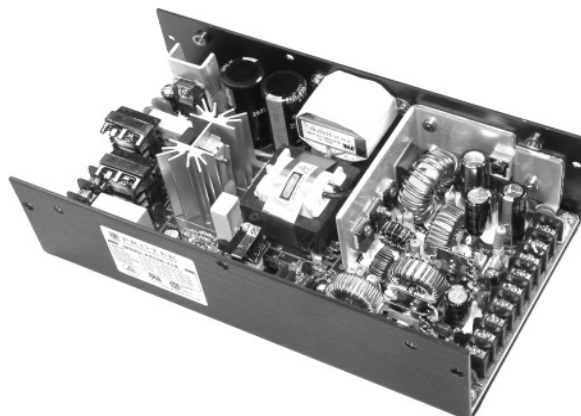
### OUTPUT SPECIFICATIONS

- Output voltage/current**  See rating chart
- Total output power**  200 watts maximum
- Ripple and noise**  2  peak to peak maximum
- Overvoltage protection**  Provided on output #1 only; set at 112-132  of its nominal output voltage
- Overcurrent protection**  All outputs protected to short circuit conditions
- Temperature coefficient**  All outputs  $\pm 0.04$   /  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
- PFD signal**  TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1 ms prior to +5V output dropping 5  below its nominal value. This signal also provides a minimum delay of 100 ms after +5V is within regulation.




### ENVIRONMENTAL SPECIFICATIONS

- Operating temperature**  0  to +70
- Storage temperature**  -40  to +85
- Relative humidity**  5  to 95  non-condensing
- Derating**  Derate from 100  at +50  linearly to 50  at +70
- Cooling**  25 CFM forced air, provided on "C" version, to be provided for "B" version by user.

### PU200 SERIES



### Safety Standard Approvals

-  **UL 60950-1**  
File No. E137410
-  **CSA C22.2 No. 60950-1**  
File No. LR93632
-  **TÜV EN60950-1**  
Certificate No. R9452561

### GENERAL SPECIFICATIONS

- Switching frequency**  75KHz  $\pm 5$ KHz
- Efficiency**  70  minimum on all models
- Hold-up time**  12 msec minimum at 110VAC
- Line regulation**   $\pm 0.5$   maximum at full load
- Inrush current**  20 amps @ 115VAC, or 40 amps @ 230VAC, at 25  cold start
- Withstand voltage**  3000VAC from input to output  
1500VAC from input to ground  
500VAC from output to ground
- MTBF**  450,000 hours minimum at full load at 25  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,  $\pm 8$ KV air and  $\pm 4$ KV contact
  - EN61000-4-3: Radiated immunity, 3V/m for 80~25,00 MHz
  - EN61000-4-4: Fast transient/burst,  $\pm 1$ KV
  - EN61000-4-5: Surge,  $\pm 1$ KV diff.,  $\pm 2$ 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 >90% reduction for 10ms

# AUTORANGING INPUT

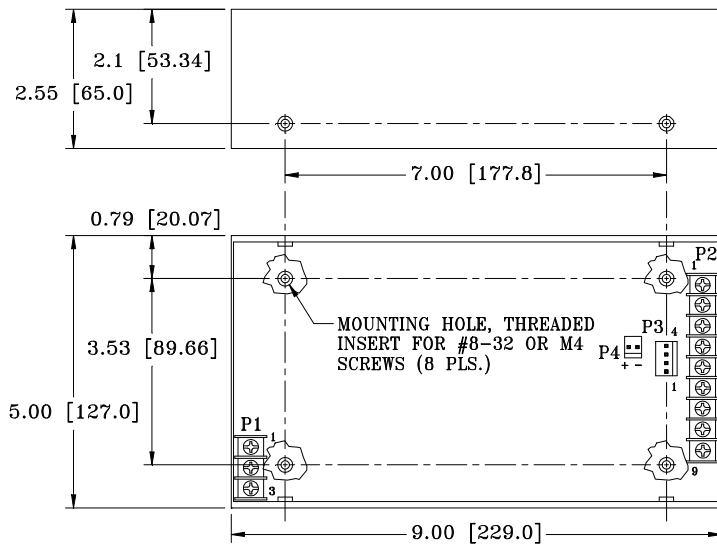
# PU200 SERIES

## OUTPUT VOLTAGE/CURRENT RATING CHART

(1)(5)(6) Model	Output #1				Output #2 (2)				Output #3				Output #4 (3)				Maximum Output Power (4)
	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	
PU200-10	5V	3.0A	40A	2%		(N/A)				(N/A)				(N/A)			200W
PU200-12	12V	1.2A	16.7A	2%		(N/A)				(N/A)				(N/A)			200W
PU200-13	15V	1.0A	13.4A	2%		(N/A)				(N/A)				(N/A)			200W
PU200-14	24V	0.6A	8.4A	2%		(N/A)				(N/A)				(N/A)			200W
PU200-16	30V	0.5A	6.7A	2%		(N/A)				(N/A)				(N/A)			200W
PU200-18	48V	0.5A	4.2A	2%		(N/A)				(N/A)				(N/A)			200W
PU200-23	+5V	3.0A	30A	2%	+12V	0A	8A	4%		(N/A)				(N/A)			200W
PU200-24	+5V	3.0A	30A	2%	+15V	0A	6A	4%		(N/A)				(N/A)			200W
PU200-25	+5V	3.0A	30A	2%	+24V	0A	4A	4%		(N/A)				(N/A)			200W
PU200-30	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-5V	0A	6A	4%		(N/A)			200W
PU200-31	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%		(N/A)			200W
PU200-32	+5V	3.0A	30A	2%	+15V	0A	6A	4%	-15V	0A	4A	4%		(N/A)			200W
PU200-33	+5V	3.0A	30A	2%	+15V	0A	6A	4%	-12V	0A	4A	4%		(N/A)			200W
PU200-40	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%	5V	0A	6A	4%	200W
PU200-41	+5V	3.0A	30A	2%	+15V	0A	6A	4%	-15V	0A	4A	4%	24V	0A	4A	4%	200W
PU200-42	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%	12V	0A	4A	4%	200W
PU200-44	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-15V	0A	4A	4%	15V	0A	4A	4%	200W
PU200-45	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%	24V	0A	4A	4%	200W

- Notes:
- (1) Add suffix "B" for U-bracket format and "C" for enclosed format, e.g. PU200-45C.
  - (2) Peak current is 12A on +12V, 9A on +15V and 6A on +24V.
  - (3) Output #4 is floating. It can be connected externally for positive or negative output.
  - (4) 200 watts for "C" version with a cover-and-fan assembly. 150 watts for "B" version without moving air (maximum current of output #1 & #2 derated to 70%), or 200 watts with 25 CFM forced air provided by user.
  - (5) When the remote Sense facility is not used, +Sense must be connected to +V, and -Sense to Return, on P2 connector.
  - (6) All models may be operated at no-load. At no-load, output voltage tolerance increases to 10%.

## MECHANICAL SPECIFICATIONS



### NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Beau Inc. P/N 72-5-03C output connector P2 is Beau Inc. P/N 72-5-09C, Screws are #6-32 on 0.375 inch centers.
4. Connector P3 mates with Molex housing 22-01-1043 and Molex 40445 series crimp terminal.
5. Connector P4 mates with Molex housing 22-01-1023 and Molex 40445 series crimp terminal.
6. P4 is for DC fan rated 24V/0.12A (models PU200-14, -16, -25), or 12V/0.2A (other models).
7. Weight:  
1.20 Kgs (2.65 Lbs.) approx. for "B" version  
1.50 Kgs (3.31 Lbs.) approx. for "C" version

## PIN CHART

MODEL	CONN PIN	P1			P2						P3			
		1	2	3	1, 2	3, 4, 5	6	7	8	9	1	2	3	4
PU200-10 PU200-12 PU200-13 PU200-14 PU200-16 PU200-18	PU200-12 PU200-14 PU200-18	AC LIVE	AC NEUTRAL	AC GROUND	-SENSE	RET.	OUTPUT #1	OUTPUT #1	OUTPUT #1	+SENSE	FAN	COM. RET.	COM. RET.	PFD
PU200-23 PU200-25	PU200-24	AC LIVE	AC NEUTRAL	AC GROUND	OUTPUT #1	COM. RET.	OUTPUT #2	N.C.	N.C.	N.C.	FAN	COM. RET.	COM. RET.	PFD
PU200-30 PU200-32	PU200-31 PU200-33	AC LIVE	AC NEUTRAL	AC GROUND	OUTPUT #1	COM. RET.	OUTPUT #2	OUTPUT #3	N.C.	N.C.	FAN	COM. RET.	COM. RET.	PFD
PU200-40 PU200-42 PU200-45	PU200-41 PU200-44	AC LIVE	AC NEUTRAL	AC GROUND	OUTPUT #1	COM. RET.	OUTPUT #2	OUTPUT #3	OUTPUT #4 RETURN	OUTPUT #4	FAN	COM. RET.	COM. RET.	PFD