PROTEK POWER

200 WATT POWER FACTOR CORRECTED SUPPLIES

DESCRIPTION

The PFC200 series comprises single and multiple output models for 200 watts of continuous output power. All models have a power factor better than 0.95, and have the same mechanical dimensions and output pinning as their corresponding PU200 series models. All auxiliary outputs are with magnetic amplifier to keep regulation. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking. Both "B" and "C" versions are with UL, CSA and TÜV approvals.

PFC200 SERIES

CE (LVD)
RoHS

FEATURES

- **Power factor 0.98 typical**
- **90 VAC to 264 VAC universal input**
- **In compliance with EN 55024, EN 61000-3-2 and EN 61000-3-3**
- **Overvoltage protection**
- **Short-circuit protection**
- **Power Fail Detect（PFD）signal**
- **100% burn-in at full rated load**
- **Remote sense on single output models**
- **Compliant with RoHS requirements**

Safety Standard Approvals：

c UL us — **UL 60950-1, CSA C22.2 NO. 60950-1**
File No. E137410

TÜV Rheinland — **TÜV EN60950-1**
Certificate No. R9955628

INPUT SPECIFICATIONS

Input voltage：	90 to 264VAC
Input frequency：	47 to 63Hz
Input current：	3.6A（rms）for 115VAC 1.8A（rms）for 230VAC
Touch 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 ±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 1ms prior to +5V output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms 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

GENERAL SPECIFICATIONS

Switching frequency:	94KHz ±10KHz
Power factor:	0.98 typical
Efficiency:	70% minimum on all models
Hold-up time：	12 msec minimum at 110VAC
Line regulation:	±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:	300,000 hours 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 and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ± 8KV air and ± 4KV contact
EN61000-4-3:	Radiated immunity, 3V/m
EN61000-4-4:	Fast transient/burst, ± 1KV
EN61000-4-5:	Surge, ± 1KV diff., ± 2KV 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

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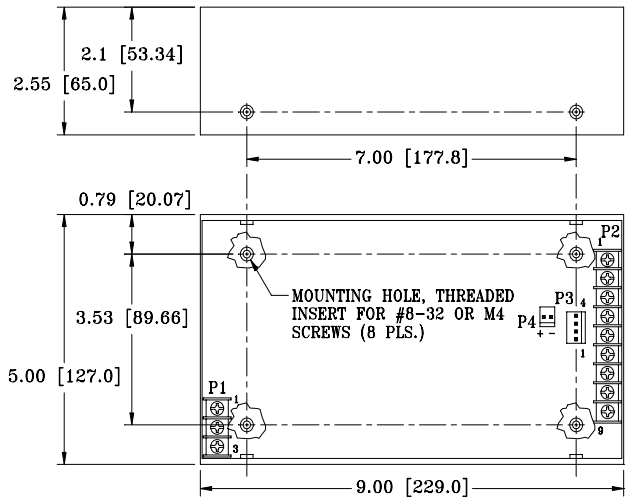
UNIVERSAL INPUT PFC200 SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

(1)(5) MODEL	Output #1 Vnom.	Imin.	Imax.	Tol.	Output #2 (2) Vnom.	Imin.	Imax.	Tol.	Output #3 Vnom.	Imin.	Imax.	Tol.	Output #4 (3) Vnom.	Imin.	Imax.	Tol.	Maximum Output Power (4)
PFC200-10	5V	3.0A	40A	2%				(N/A)				(N/A)				(N/A)	200W
PFC200-12	12V	1.2A	16.7A	2%				(N/A)				(N/A)				(N/A)	200W
PFC200-13	15V	1.0A	13.4A	2%				(N/A)				(N/A)				(N/A)	200W
PFC200-14	24V	0.6A	8.4A	2%				(N/A)				(N/A)				(N/A)	200W
PFC200-16	30V	0.5A	6.7A	2%				(N/A)				(N/A)				(N/A)	200W
PFC200-18	48V	0.5A	4.2A	2%				(N/A)				(N/A)				(N/A)	200W
PFC200-23	+5V	3.0A	30A	2%	+12V	0A	8A	4%				(N/A)				(N/A)	200W
PFC200-24	+5V	3.0A	30A	2%	+15V	0A	6A	4%				(N/A)				(N/A)	200W
PFC200-25	+5V	3.0A	30A	2%	+24V	0A	4A	4%				(N/A)				(N/A)	200W
PFC200-30	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-5V	0A	6A	4%				(N/A)	200W
PFC200-31	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%				(N/A)	200W
PFC200-32	+5V	3.0A	30A	2%	+15V	0A	6A	4%	-15V	0A	4A	4%				(N/A)	200W
PFC200-33	+5V	3.0A	30A	2%	+15V	0A	6A	4%	-12V	0A	4A	4%				(N/A)	200W
PFC200-40	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%	5V	0A	6A	4%	200W
PFC200-41	+5V	3.0A	30A	2%	+15V	0A	6A	4%	-15V	0A	4A	4%	24V	0A	4A	4%	200W
PFC200-42	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-12V	0A	4A	4%	12V	0A	4A	4%	200W
PFC200-44	+5V	3.0A	30A	2%	+12V	0A	8A	4%	-15V	0A	4A	4%	15V	0A	4A	4%	200W
PFC200-45	+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. PFC200-45C.
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. All models may be operated at no-load. At no-load, output voltage tolerance increases to 10%. The output #1 of multiple output models requires 3A to support other outputs at their maximum rated loads.

MECHANICAL SPECIFICATIONS



NOTES:
1. Dimension 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 in 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 PFC200-14,-16,-25),or 12V/0.2A (other models).
7. Weight: 1.30 kgs. (2.86 lbs.) approx. for “B” version
   1.50 kgs. (3.30 lbs.) approx. for “C” version

PIN CHART

CONN / PIN / MODEL	P1 1	P1 2	P1 3	P2 1, 2	P2 3, 4, 5	P2 6	P2 7	P2 8	P2 9	P3 1	P3 2	P3 3	P3 4
PFC200-10 PFC200-12 PFC200-13 PFC200-14 PFC200-16 PFC200-18	AC LIVE	AC NEUTRAL	AC GROUND	-SENSE	RET.	OUTPUT #1	OUTPUT #1	OUTPUT #1	+SENSE	FAN	COM. RET.	COM. RET.	PFD
PFC200-23 PFC200-24 PFC200-25	AC LIVE	AC NEUTRAL	AC GROUND	OUTPUT #1	COM. RET.	OUTPUT #2	N.C.	N.C.	N.C.	FAN	COM. RET.	COM. RET.	PFD
PFC200-30 PFC200-31 PFC200-32 PFC200-33	AC LIVE	AC NEUTRAL	AC GROUND	OUTPUT #1	COM. RET.	OUTPUT #2	OUTPUT #3	N.C.	N.C.	FAN	COM. RET.	COM. RET.	PFD
PFC200-40 PFC200-41 PFC200-42 PFC200-44 PFC200-45	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

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