PROTEK 163-180 WATT POWER FACTOR CORRECTED SUPPLIES

DESCRIPTION

The PFC160 series of AC/DC switching power supplies are capable of delivering 163/165/180 watts of continuous power and incorporate active power factor correction. Two outputs in each unit are equipped with current sharing. Other features include remote sense, Power Fail Detect signal and isolated outputs. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking. The series is designed to meet the requirements of data networking, computing and telecommunication systems.

PFC160 SERIES CE (LVD)

FEATURES

- **EN6100-3-2 class A and D compliant**
- **Power Factor 0.98 typical**
- **Overvoltage protection**
- **Short-circuit protection**
- **Power Fail Detect (PFD) and remote inhibit**
- **100% burn-in at full rated load**
- **Remote sense on output #1 and output #2**
- **DC power good**
- **5V stand by output**

Safety Standard Approvals :

UL 60950-1, CSA C22.2 NO. 60950-1
File NO. E137410

EN60950-1
Certificate No. R 50057011

INPUT SPECIFICATIONS

Input voltage :	85 to 264 VAC
Input frequency :	47 to 63 Hz
Input current :	2.9A (rms) for 115VAC 1.4A (rms) for 230VAC
Leakage current :	0.4mA max. @ 115VAC, 60Hz 0.8mA max. @ 230VAC, 50Hz

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 :	163/165/180 watts continuous output power at 30CFM forced air cooling or 80 watts at convection cooling

OUTPUT SPECIFICATIONS

Output voltage/current :	See rating chart
Total output power :	See rating chart
Ripple and Noise :	1% or 50mV 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 1 ms prior to master output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after master output is within regulation.
Remote inhibit :	Requires an external TTL high level signal to inhibit outputs for standard models.

GENERAL SPECIFICATIONS

Switching frequency :	94KHz ±10KHz
Power factor :	0.98 typical
Efficiency :	70% minimum on all models
Hold-up time :	20 msec minimum at 110VAC
Line regulation :	±0.5% maximum at full load
Inrush current :	18 amps @ 115VAC, or 36 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 minimum at full load at 25℃ ambient, calculated per MIL-HDBK-217F

EMC performance (EN55024)

EN55022:	Class B conducted, Class B radiated
FCC Part 15:	Class B conducted, Class B radiated
VCCI:	Class B conducted, Class B radiated
EN61000-3-2:	Harmonic distortion, Class B 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

PROTEK

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OUTPUT VOLTAGE/CURRENT RATING CHART

(1)(2)(3)(6) Model	Output #1 (4) Vnom.	Imax. No Fan	Imax. 30 CFM	Ipeak	Tol.	Output #2 (4) Vnom.	Imax. No Fan	Imax. 30 CFM	Ipeak	Tol.	Output #3 (5) Vnom.	Imax. No Fan	Imax. 30 CFM	Ipeak	Tol.	Output #4 (5) Vnom.	Imax. No Fan	Imax. 30 CFM	Ipeak	Tol.	Max. Output Power
PFC160-10B	5.1V	16A	32A	40A	2%			(N/A)					(N/A)					(N/A)			163W
PFC160-12B	12V	6.7A	15A	20A	2%			(N/A)					(N/A)					(N/A)			180W
PFC160-14B	24V	3.4A	7.5A	10A	2%			(N/A)					(N/A)					(N/A)			180W
PFC160-18B	48V	1.7A	3.75A	5A	2%			(N/A)					(N/A)					(N/A)			180W
PFC160-31-3B	+3.3V	15A	30A	38A	2%	+5.1V	10A	20A	22A	3%	12V	2A	4.5A	5A	3%			(N/A)			165W
PFC160-36B	+5.1V	15A	30A	32A	2%	+12V	5A	10A	11A	3%	24V	2A	3A	4A	3%			(N/A)			165W
PFC160-40B	+5.1V	15A	30A	32A	2%	+12V	5A	10A	11A	3%	12V	2A	4A	5A	3%	5V	2A	4A	5A	3%	165W
PFC160-40-2B	+2.5V	15A	30A	38A	2%	+3.3V	10A	20A	22A	3%	12V	2A	4A	5A	3%	5V	2A	4A	5A	3%	165W
PFC160-40-3B	+5.1V	15A	30A	32A	2%	+3.3V	10A	20A	22A	3%	12V	2A	4A	5A	3%	12V	2A	4A	5A	3%	165W
PFC160-42-2B	+3.3V	15A	30A	38A	2%	+2.5V	10A	20A	22A	3%	5V	2A	4A	5A	3%	12V	2A	4A	5A	3%	165W
PFC160-42-3B	+3.3V	15A	30A	38A	2%	+5.1V	10A	20A	22A	3%	12V	2A	4A	5A	3%	12V	2A	4A	5A	3%	165W

Note：(1) Peak output current with 10% maximum duty cycle for less than 30seconds.

(2) 165 watts at 30 CFM force air cooling or 80 watts maximum at convection cooling, except single output models which are 180 watts at 30 CFM forced air cooling or 80 watts at convection cooling.

(3) Total output current of Vo1 & Vo2 is 40A maximum, except single output models.

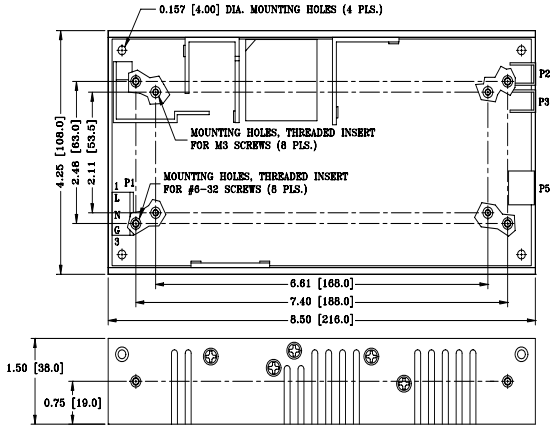
(4) Output #1 and Output #2 are built for current sharing.

(5) Output #3 and Output #4 are isolated from others and have individual return.

(6) Standby output is rated 5V/0.25A for single output models or 5V/2A for multiple output models.

MECHANICAL SPECIFICATIONS

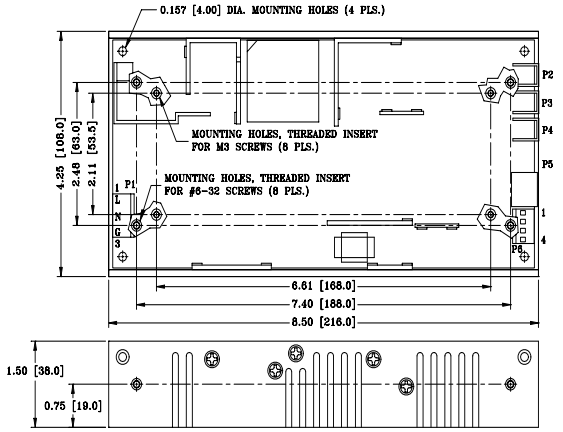
Single output models



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 mates with Molex housing 09-50-8051 and Molex 2878 series crimp terminal.
4. Connector P5 mates with Molex housing 90142-0010 and pins 90119-2110.
5. Connector P2, P3 mates with Molex housing BB-124-08.
6. Weight: 1.05 Kgs (2.32 Lbs.) approx.

Multiple output models



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 mates with Molex housing 09-50-8051 and Molex 2878 series crimp terminal.
4. Output connector P6 mates with Molex housing 09-50-8041 and Molex 2878 series crimp terminal.
5. Connector P5 mates with Molex housing 90142-0010 and pins 90119-2110.
6. Connector P2, P3, P4 mates with Molex housing BB-124-08
7. Weight: 1.05 Kgs (2.32 Lbs.) approx.

MEMO:

PIN CHART

Single Output Models

CONN / PIN / MODEL	P1			P2	P3	P5		
	1	2	3			1	2	3
PFC160-10B	LIVE	NEUTRAL	GROUND	OUTPUT # 1	COM.	N.C.	5V STAND BY	N.C.
PFC160-12B PFC160-14B PFC160-18B	LIVE	NEUTRAL	GROUND	OUTPUT # 1	COM.	N.C.	5V STAND BY	N.C.

CONN / PIN / MODEL	P5						
	4	5	6	7	8	9	10
PFC160-10B	VO1 CURRENT SHARE	COMMON	+VO1 SENSE	SENSE COMMON	REMOTE INHIBIT	DC POWER GOOD	PFD
PFC160-12B PFC160-14B PFC160-18B	VO1 CURRENT SHARE	COMMON	+VO1 SENSE	SENSE COMMON	REMOTE INHIBIT	DC POWER GOOD	N.C.

Multiple Output Models

CONN / PIN / MODEL	P1			P2	P3	P4	P5				
	1	2	3				1	2	3	4	5
PFC160-31-3B PFC160-36B	LIVE	NEUTRAL	GROUND	OUTPUT # 1	COM3	OUTPUT # 2	VO2 CURRENT SHARE	5V STANDBY	+ V02 SENSE	VO1 CURRENT SHARE	COMMON
PFC160-40B PFC160-40-2B PFC160-40-3B PFC160-42-2B PFC160-42-3B	LIVE	NEUTRAL	GROUND	OUTPUT # 1	COM3	OUTPUT # 2	VO2 CURRENT SHARE	5V STANDBY	+ V02 SENSE	VO1 CURRENT SHARE	COMMON

CONN / PIN / MODEL	P5					P6			
	6	7	8	9	10	1	2	3	4
PFC160-31-3B PFC160-36B	+VO1 SENSE	SENSE COMMON	REMOTE INHIBIT	DC POWER GOOD	PFD	OUTPUT # 3	OUTPUT # 3 RET.	N.C.	N.C.
PFC160-40B PFC160-40-2B PFC160-40-3B PFC160-42-2B PFC160-42-3B	+VO1 SENSE	SENSE COMMON	REMOTE INHIBIT	DC POWER GOOD	PFD	OUTPUT # 3	OUTPUT # 3 RET.	OUTPUT # 4	OUTPUT # 4 RET.

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