



PROTEK POWER

200-300 WATT MEDICAL SWITCHING POWER SUPPLIES

DESCRIPTION

The PM300 series comprising single and multiple output models for 200-300 watts of continuous output power is specially designed for medical and ITE applications, not for life-supporting equipment. They operate at 90-264 VAC input voltage without the need of a selector strap. 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. A cover-and-fan assembly can be added during manufacturing.

FEATURES

- EN61000-3-2 class A and D compliant
- Power Factor 0.98 typical
- Overvoltage protection
- Short-circuit protection
- Power Fail Detect (PFD)
- 100% burn-in at full rated load
- Remote sense on output #1 and output #2
- Remote inhibit – TTL high disables output
- Compliant with RoHS requirements

INPUT SPECIFICATIONS

Input voltage :	90-264 VAC
Input frequency:	47-63 Hz
Input current :	4.7A (rms) for 115 VAC 2.3A (rms) for 230 VAC
Earth leakage current:	100 uA max. @ 115 VAC, 60 Hz 220 uA max. @ 230 VAC, 50 Hz

OUTPUT SPECIFICATIONS

Output voltage/current :	See rating chart
Total output power :	See rating chart
Ripple and Noise :	2% peak to peak maximum
Overvoltage protection :	Provided on output #1 only; set at 115-140% of its nominal output voltage
Overcurrent protection :	All outputs protected to short circuit conditions
Temperature coefficient :	All outputs $\pm 0.04\%$ / $^{\circ}\text{C}$ 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 master output dropping 5% below its nominal value. This signal also provides a minimum delay of 100ms after master output is within regulation.
Remote inhibit :	Requires an external TTL high level signal to inhibit outputs for standard models.

PM300 SERIES

CE (LVD)
RoHS



New!!

Safety Standard Approvals :



UL60601-1, CSA C22.2 No. 601.1
File No. E178020
UL 60950-1
File No. E137410
TÜV EN60601-1



TÜV EN60950-1

ENVIRONMENTAL SPECIFICATIONS

Operating temperature :	0 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$
Storage temperature :	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
Relative humidity :	5% to 95% non-condensing
Derating :	Derate from 100% at +50 $^{\circ}\text{C}$ linearly to 50% at +70 $^{\circ}\text{C}$
Cooling :	200/250/300 watts continuous output power at 35 CFM forced air cooling or 100/125/150 watts at convention cooling

GENERAL SPECIFICATIONS

Switching frequency :	70 KHz ± 10 KHz
Power factor :	0.98 typical
Efficiency :	70% minimum on all models
Hold-up time :	12 msec minimum at 110 VAC
Line regulation :	$\pm 0.2\%$ maximum at full load
Inrush current :	30A @ 115 VAC or 60A @ 230 VAC, at 25 $^{\circ}\text{C}$ cold start
Withstand voltage :	4000 VAC from input to output 1500 VAC from input to ground 500 VAC from output to ground
MTBF :	300,000 hours minimum at full load at 25 $^{\circ}\text{C}$ ambient, calculated per MIL-HDBK-217F
EMC Performance (EN60601-1-2: 2001)	
EN55011:	Class B conducted, Class B radiated
EN61000-3-2:	Harmonic distortion, Class A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ± 8 KV air and ± 6 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, ± 2 KV
EN61000-4-5:	Surge, ± 1 KV diff., ± 2 KV com.
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 3 A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500 ms, 60% reduction for 100 ms and >95% reduction for 10 ms

UNIVERSAL INPUT

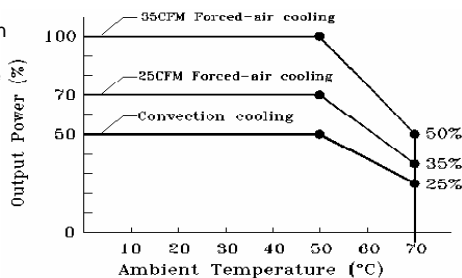
PM300 MEDICAL SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

(1) (2) (6) Model	Output # 1 (3)				Output # 2 (3)				Output # 3 (4)				Output # 4 (4)				Maximum Output Power (5)
	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	
PM300-10-3	3.3V	3.0 A	60 A	3%													200 W
PM300-10	5.1V	3.0 A	60 A	2%													300 W
PM300-12	12V	1.2 A	25 A	2%													300 W
PM300-13	15V	1.0 A	20 A	2%													300 W
PM300-14	24V	0.6 A	12.5 A	2%													300 W
PM300-16	30V	0.5 A	10 A	2%													300 W
PM300-18	48V	0.5 A	6.3 A	2%													300 W
PM300-40-3	3.3V	3.0 A	35 A	3%	5.1 V	2.0 A	22 A	2%	12 V	0 A	4 A	4%	12 V	0 A	4 A	4%	250 W
PM300-40	5.1V	2.0 A	35 A	2%	12 V	1.0 A	10 A	2%	12 V	0 A	4 A	4%	5.1 V	0 A	4 A	4%	300 W
PM300-41	5.1V	2.0 A	35 A	2%	15 V	0.8 A	8 A	2%	15 V	0 A	4 A	4%	24 V	0 A	2.5 A	4%	300 W
PM300-42	5.1V	2.0 A	35 A	2%	12 V	1.0 A	10 A	2%	12 V	0 A	4 A	4%	12 V	0 A	4 A	4%	300 W
PM300-45	5.1V	2.0 A	35 A	2%	12 V	1.0 A	10 A	2%	12 V	0 A	4 A	4%	24 V	0 A	2.5 A	4%	300 W
PM300-46	5.1V	2.0 A	35 A	2%	12 V	1.0 A	10 A	2%	12 V	0 A	4 A	4%	15 V	0 A	4 A	4%	300 W
PM300-47	5.1V	2.0 A	35 A	2%	24 V	0.5 A	5 A	2%	12 V	0 A	4 A	4%	12 V	0 A	4 A	4%	300 W
PM300-48	5.1V	2.0 A	35 A	2%	24 V	0.5 A	5 A	2%	5.1 V	0 A	4 A	4%	15 V	0 A	4 A	4%	300 W
PM300-49	5.1V	2.0 A	35 A	2%	12 V	1.0 A	10 A	2%	5.1 V	0 A	4 A	4%	24 V	0 A	2.5 A	4%	300 W
PM300-410	24V	0.5 A	6.3 A	2%	12 V	1.0 A	10 A	2%	5.1 V	0 A	4 A	4%	12 V	0 A	4 A	4%	300 W
PM300-411	24V	0.5 A	6.3 A	2%	12 V	1.0 A	10 A	2%	5.1 V	0 A	4 A	4%	24 V	0 A	2.5 A	4%	300 W
PM300-412	24V	0.5 A	6.3 A	2%	12 V	1.0 A	10 A	2%	12 V	0 A	4 A	4%	12 V	0 A	4 A	4%	300 W
PM300-413	24V	0.5 A	6.3 A	2%	24 V	0.5 A	5 A	2%	5.1 V	0 A	4 A	4%	15 V	0 A	4 A	4%	300 W
PM300-414	24V	0.5 A	6.3 A	2%	24 V	0.5 A	5 A	2%	12 V	0 A	4 A	4%	12 V	0 A	4 A	4%	300 W

NOTES:

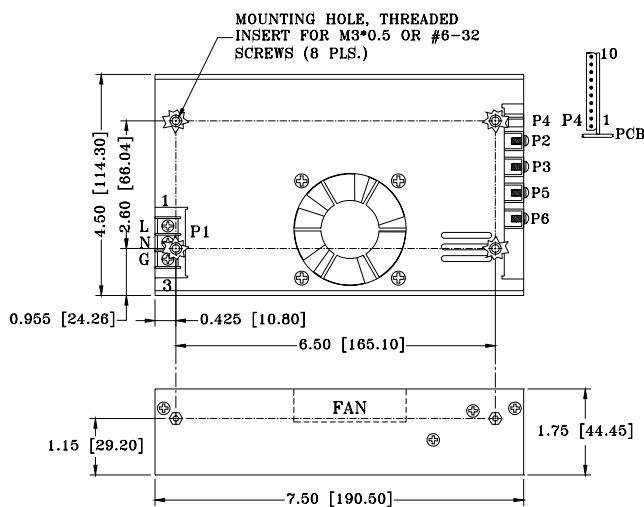
- Add suffix "B" for U-bracket format or "C" for enclosed format with optional fan control, e.g. PM300-45C.
- All outputs are floating. It can be connected externally for positive or negative output.
- Output #1 & #2 can be adjusted within ±5% of their nominal voltage.
- Output #3 & #4 can be adjusted within ±15% of their nominal voltage.
- 300 watts for "C" version with cover-and-fan assembly. 150 watts for "B" version without moving air (maximum current of output #1 & #2 derated to 50%), or 300 watts with 35 CFM forced air provided by user.
- PM300-10-3 is rated 200 watts with 35 CFM forced air cooling or 100 watts convection cooled. PM300-40-3 is rated 250 watts with 35 CFM forced air cooling (maximum current of output #1 & #2 derated to 50%) or 125 watts convection cooled.
- Single output models may be operated at no-load. At no-load, output voltage tolerance increases to 10%.



DERATING CURVE

MECHANICAL SPECIFICATIONS

Single Output Models



NOTES:

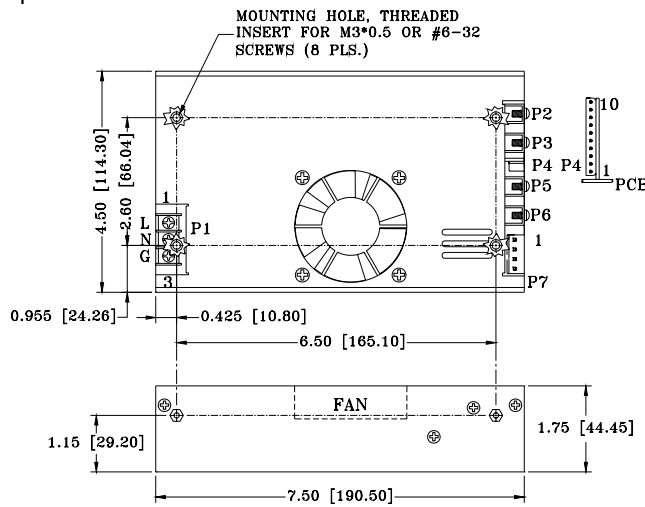
- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Input connector P1 is Dinkle DT-35-B01W-03 with M3, nickel-plated screws.
- Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
- Connectors P2, P3, P5 and P6: M3*0.5 screw connections
- Weight: 1.20 Kgs. (2.64 lbs.) approx.
- DC fan on P4 is rated at 12 V / 0.1 A.

UNIVERSAL

PM300 MEDICAL SERIES

MECHANICAL SPECIFICATIONS

Multiple Output Models



NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W-03.
Screws are M3, nickel plated.
4. Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
5. Connectors P2, P3, P5 and P6: M3*0.5 screw connections
6. Output connector P7 mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal.
7. Weight: 1.24 Kgs. (2.73 lbs.) approx.
8. DC fan on P4 is rated at 12 V /0.1 A.

PIN CHART

Single Output Models

MODEL	CONN PIN	P1 (AC)			P2	P3	P4			
		1	2	3			1	2	3	4
PM300-10-3	PM300-10	LIVE	NEUTRAL	GROUND	+VO1	+VO1	SIGNAL GROUND			
PM300-12	PM300-13						(-VO1)	+S (VO1)	-S (VO1)	PFD
PM300-14	PM300-16									
PM300-18										

MODEL	CONN PIN	P4						P5	P6	P7			
		5	6	7	8	9	10			1	2	3	4
PM300-10-3	PM300-10	INHIBIT	N.C.	N.C.	N.C.	0V (FAN)	FAN	-VO1	-VO1	VOID	VOID	VOID	VOID
PM300-12	PM300-13												
PM300-14	PM300-16												
PM300-18													

Multiple Output Models

MODEL	CONN PIN	P1 (AC)			P2	P3	P4			
		1	2	3			1	2	3	4
PM300-40-3	PM300-40	LIVE	NEUTRAL	GROUND	+VO1	-VO1	SIGNAL GROUND			
PM300-41	PM300-42						(-VO1)	+S (VO1)	-S (VO1)	PFD
PM300-45	PM300-46									
PM300-47	PM300-48									
PM300-49	PM300-410									
PM300-411	PM300-412									

MODEL	CONN PIN	P4						P5	P6	P7			
		5	6	7	8	9	10			1	2	3	4
PM300-40-3	PM300-40	INHIBIT	N.C.	+S (VO2)	-S (VO2)	0V (FAN)	FAN	+VO2	-VO2	+VO3	-VO3	+VO4	-VO4
PM300-41	PM300-42												
PM300-45	PM300-46												
PM300-47	PM300-48												
PM300-49	PM300-410												
PM300-411	PM300-412												

Headquarter Switzerland:
Angst+Pfister Sensors and Power AG

Thurgauerstrasse 66
CH-8050 Zurich
Phone +41 44 877 35 00
sensorsandpower@angst-pfister.com

Office Germany:
Angst+Pfister Sensors and Power
Deutschland GmbH
Edisonstraße 16
D-85716 Unterschleißheim
Phone +49 89 374 288 87 0
sensorsandpower.de@angst-pfister.com



We are here for you. Addresses and Contacts.

Sales Germany & Austria

Geometrical sensors
Other products

Kurt Stritzelberger
Phone +49 89 374 288 87 22
kurt.stritzelberger@angst-pfister.com

Pressure sensors
Other products

Gerhard Vetter
Phone +49 89 374 288 87 26
gerhard.vetter@angst-pfister.com

Gas sensors and modules

Peter Felder
Phone +41 44 877 35 05
peter.felder@angst-pfister.com

Sales Switzerland & Liechtenstein

Postcode 3000 – 9999

Basil Frei
Phone +41 44 877 35 18
basil.frei@angst-pfister.com

Postcode 1000 – 2999

Christian Mohrenstecher
Phone +41 76 444 57 93
christian.mohrenstecher@angst-pfister.com

Sales International Key Accounts

Peter Felder
Phone +41 44 877 35 05
peter.felder@angst-pfister.com

Sales Other Countries / Product Management

Pressure Sensors
Load Cells

Philipp Kistler
Phone +41 44 877 35 03
philipp.kistler@angst-pfister.com

Gas sensors
Gas sensor modules

Dr. Thomas Clausen
Phone +49 89 374 288 87 24
thomas.clausen@angst-pfister.com

Flow / Level / Medical products

Dr. Adriano Pittarelli
Phone +49 89 374 288 87 67
adriano.pittarelli@angst-pfister.com

Power supplies

Sebastiano Leggio
Phone +41 44 877 35 06
sebastiano.leggio@angst-pfister.com

Linear position sensors
Angle sensors

Eric Letsch
Phone +41 44 877 35 14
eric.letsch@angst-pfister.com

Accelerometers
Sensor elements

Christoph Kleye
Phone +49 89 374 288 87 61
christoph.kleye@angst-pfister.com

Drive technology
CH Postcode 5000 – 9999 / DE

Roman Homa
Phone +41 76 444 00 86
roman.homa@angst-pfister.com

Drive technology
CH Postcode 1000 – 4999 / AT / IT / FR

Christian Mohrenstecher
Phone +41 76 444 57 93
christian.mohrenstecher@angst-pfister.com

Harald Thomas
Phone +49 89 374 288 87 23
harald.thomas@angst-pfister.com