PM650 Series

650-700 WATTS SINGLE & MULTIPLE OUTPUT AC/DC MEDICAL



Features

- **EN61000-3-2 class A and D compliant.**
- **Power factor 0.98 typical.**
- **Remote sense on output 1 and output 2.**
- **Overvoltage protection.**
- **Overcurrent protection.**
- **Power fail detection (PFD) signal.**
- **100% burn-in at full rated load.**
- **Remote inhibit - TTL high disables output.**
- **Short curcuit protection**
- **Thermal protection.**

Specifications

INPUT

Input Voltage	90-264Vac
Frequency	47Hz–67Hz
Input Current	7.1A (rms) for 115Vac. 3.5A (rms) for 230Vac.
Leakage current	100µA max. @ 115Vac. 60Hz. 165µA max. @ 230Vac. 50Hz.
Isolation	Input – Output: 4000VAC Input – Ground: 1500VAC Output – Ground: 500VAC
Inrush Current	40A @ 115V, 80A @ 230V

OUTPUT

Output Voltage	See table
Output Current	See table
Ripple & Noise	2% peak to peak
Line Regulation	±0.2% maximum at full load.
Load Regulation	See table
Transient Response	Max. deviation 4% recovering to 1% within 500µs after 25% load charge
Overvoltage Protection	Provided on V1 only. Set at 115%–140% of nominal.
Overcurrent Protection	All outputs protected for short circuit conditions
Temperature Coefficient	All outputs ±0.04% per °C.
Holdup Time	Typically 12ms at 110VAC.
PFD Signal	Power fail detection signal. TTL logic low upon loss of input power.
Remote inhibit	Requires an external TTL high level signal to inhibit outputs for standard models.

OPERATING

MTBF	300,000 hrs @ 25°C
Efficiency	70% minimum.

ENVIRONMENTAL

Operating Temperature	0°C to 70°C
Derating	Derate to 50% at 70°C
Storage Temperature	-40°C to 85°C
Relative Humidity	5%–95% non-condensing

STANDARDS AND APPROVALS

Safety standards	UL2601-1, CSA C22.2, TUV EN60601-1
C-Tick	AS/NZS CISPR11 Group 1, Class A
EMC standards	EN60601-1-2: 2001,EN61000-3-2, -3, EN61000-4-2, -3, -4, -5, -6, -8, -11
EMI standards	EN55011 Class B

MECHANICAL

Dimensions	266.7x127x63.5mm
Weight	TBA.

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Selection Table

MODEL	OUTPUT #1				OUTPUT #2				OUTPUT #3				MAX. OUTPUT
NUMBER	VNOM	IMIN	IMAX	TOL	VNOM	IMIN	IMAX	TOL	VNOM	IMIN	IMAX	TOL	POWER
PM650-12	12V	0A	54.2A	2%									650W
PM650-13	15V	0A	43.4A	2%									650W
PM650-14	24V	0A	27.1A	2%									650W
PM650-15	27V	0A	24.1A	2%									650W
PM650-16	30V	0A	21.7A	2%									650W
PM650-18	48V	0A	14.9A	2%									700W
PM650-20	24V	1.5A	18A	3%	12V	1.2A	22A	5%					650W
PM650-21	24V	1.5A	18A	2%	15V	1.0A	18A	5%					650W
PM650-22	48V	0.75A	9A	2%	24V	0.6A	12A	5%					650W
PM650-23	48V	0.75A	9A	2%	12V	1.2A	22A	5%					650W
PM650-24	48V	0.75A	9A	2%	15V	1.0A	18A	5%					650W
PM650-30	24V	1.5A	18A	2%	12V	1.2A	22A	5%	3.3V	0A	10A	3%	650W
PM650-31	24V	1.5A	18A	3%	15V	1.0A	18A	5%	3.3V	0A	10A	3%	650W
PM650-32	24V	1.5A	18A	2%	12V	1.2A	22A	5%	5.1V	0A	10A	3%	650W
PM650-33	24V	1.5A	18A	2%	15V	1.0A	18A	5%	5.1V	0A	10A	3%	650W
PM650-34	48V	0.75A	9A	2%	12V	1.2A	22A	5%	3.3V	0A	10A	3%	650W
PM650-35	48V	0.75A	9A	2%	15V	1.0A	18A	5%	3.3V	0A	10A	3%	650W
PM650-36	48V	0.75A	9A	2%	12V	1.2A	22A	5%	5.1V	0A	10A	3%	650W
PM650-37	48V	0.75A	9A	2%	15V	1.0A	18A	5%	5.1V	0A	10A	3%	650W

NOTES: (1) Add suffix "B" for U-bracket format and "C" for enclosed format.
(2) All outputs are floating. It can be connected externally for postive or negative output.
(3) Output 1 and 2 can be adjusted within ±5% of their nominal voltage.
(4) Output 3 can be adjusted within ±15% of their nominal voltage.
(5) 650 watts for "C" version with a cover and fan assembly 325 watts for "B" version without moving air (maximum current of ouput #1 & #2 derated to 70%), or 450 watts with 50 CFM forced air provided by user.
(6) Single output models may be operated at no-load. At no-load, output voltage tolerance increases to 10%.

Pin Chart

	P1(AC)			P2	P3	P4									
MODEL/PIN	1	2	3			1	2	3	4	5	6	7	8	9	10
PM650-12 PM650-13 PM650-14 PM650-16 PM650-17 PM650-18	Live	Neutral	Ground	+V	-V	Signal Ground (-V01)	+S(V01)	-S(V01)	PFD	Inhibit +ve	Inhibit -ve	N.C.	N.C.	0V (Fan)	Fan

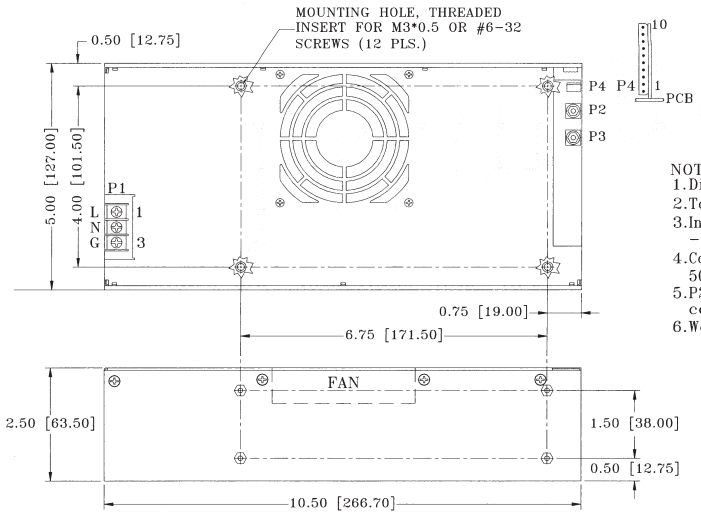
	P1(AC)			P2	P3	P4									
MODEL/PIN	1	2	3			1	2	3	4	5	6	7	8	9	10
PM650-20 PM650-21 PM650-22 PM650-23 PM650-24 PM650-30 PM650-31 PM650-32 PM650-33 PM650-34 PM650-35 PM650-36 PM650-37	Live	Neutral	Ground	+V01	+V01	Signal Ground (-V01)	+S(V01)	-S(V01)	PFD	Inhibit	Inhibit -ve	-S(V02)	-S(V02)	0V (Fan)	Fan

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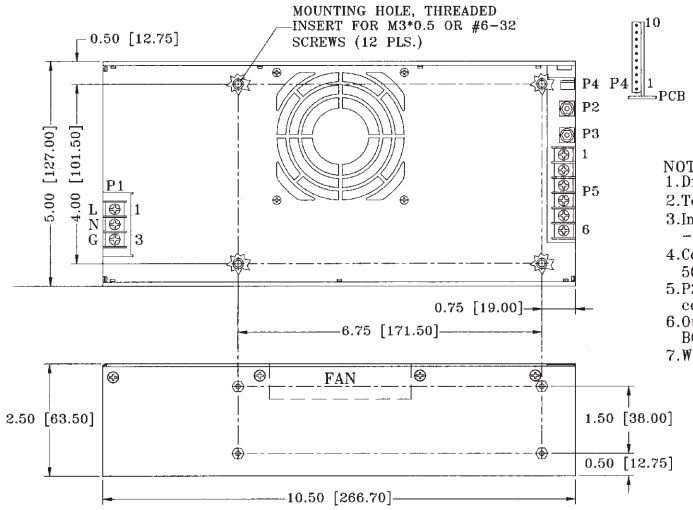
		P5					
MODEL/PIN		1	2	3	4	5	6
PM650-20 PM650-22 PM650-24	PM650-21 PM650-23	+V2	+V2	-V2	-V2	N.C.	N.C.
PM650-30 PM650-32 PM650-34 PM650-36	PM650-31 PM650-33 PM650-35 PM650-37	+V2	+V2	-V2	-V2	+V3	-V3

Technical Illustration



NOTES:
1. Dimensions shown in inch [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. P2,P3: Output studs are nickel plated copper, M5*0.8mm threaded.
6. Weight:

SINGLE



NOTES:
1. Dimensions shown in inch [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. P2,P3: Output studs are nickel plated copper, M5*0.8mm threaded.
6. Output connector P5 is Dinkle DT-35-B01W-06 screws are M3, Nickel plated.
7. Weight:

MULTIPLE