




FEATURES

- ☐ EN61000-3-2 Class A and D Compliant
- ☐ Power Factor 0.98 Typical
- ☐ Overvoltage Protection
- ☐ Overcurrent Protection
- ☐ Thermal Protection
- ☐ Power Fail Detection
- ☐ 100% Burn In at Full Load
- ☐ Remote Sense (Outputs #1 & #2)
- ☐ Remote Inhibit
- ☐ RoHS Compliant 
- ☐ CE Mark / CB Report



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

INPUT SPECIFICATIONS

- Input voltage ☐ 90 to 264VAC
- Input frequency ☐ 47 to 63Hz
- Input current ☐ 10A (rms) for 115VAC
5A (rms) for 230VAC
- Earth leakage current ☐ 100uA max. @115VAC, 60Hz
165uA max. @230VAC, 60Hz

OUTPUT SPECIFICATIONS

- Output voltage/current ☐ See rating chart (Page 2)
- Total output power ☐ See rating chart (Page 2)
- Ripple and noise ☐ 2% peak to peak maximum
- Overvoltage protection ☐ Provided on output #1 only. Set at 115 - 140% of 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. Signal appears at least 1ms prior to master output dropping 5% below its nominal value. 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.

SAFETY SPECIFICATIONS

UL/cUL 60601-1, TUV EN60601-1
CE Mark(LVD)
CB Report

Note: Designed for medical applications, not life support equipment.

ENVIRONMENTAL SPECIFICATIONS

- Operating temperature ☐ 0°C to +70°C
- Storage temperature ☐ -40°C to +85°C
- Relative humidity ☐ 5% to 95% non-condensing
- Derating ☐ Derate from 100% power at +50°C linearly to 50% power at +70°C

GENERAL SPECIFICATIONS

- Switching frequency ☐ 70KHz ±110KHz
- Power factor ☐ 0.98 typical
- Efficiency ☐ 80% minimum
- Hold-up time ☐ 12 msec minimum at 110VAC
- Line regulation ☐ ±0.2% maximum at full load
- Inrush current ☐ 50A @ 115VAC or 100A @ 230VAC, at 25°C cold start
- Withstand voltage ☐ 4000VAC from input to output
1500VAC from input to ground
500VAC from output to ground
- MTBF ☐ 300,000 hours minimum at full load
At 25°C ambient, calculated per MIL-HDBK-217F

EMI SPECIFICATIONS (EN60601-1-2)

- EN55011: Class B conducted, Class A radiated
- EN61000-3-2: Harmonic distortion, Class A and D
- EN61000-3-3: Line flicker
- EN61000-4-2: ESD, ± 8KV air and ± 6KV contact
- EN61000-4-3: Radiated immunity, 3V/m
- EN61000-4-4: Fast transient/burst, ±2KV
- EN61000-4-5: Surge, ± 1KV diff., ± 2KV com.
- EN61000-4-6: Conducted immunity, 3Vrms
- EN61000-4-8: Magnetic field immunity, 3A/m
- EN61000-4-11: Voltage dips, 30% reduction for 500ms, 60% reduction for 100ms and >95% reduction for 10ms



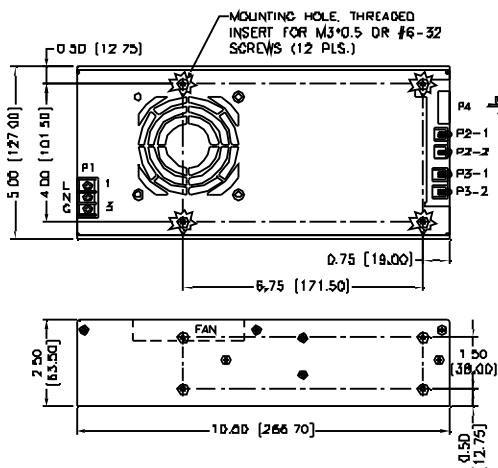
OUTPUT VOLTAGE/CURRENT RATING CHART

MODEL	Output # 1				Output # 2				Output # 3				Max. Output Power
	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	
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
PM650-17	36V	0A	18.1A	2%									650W
PM650-18	48V	0A	14.6A	2%									700W
PM650-20	24V	1.5A	18A	2%	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	2%	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 or "C" for enclosed format with fan control function, e.g. PM650-14C.
2. All outputs are floating. It can be connected externally for positive or negative output.
3. Output #1 can be adjusted within +/- 5% of their nominal voltage.
4. Output #3 can be adjusted within +/- 15% of their nominal voltage.
5. 650~700 watts for "C" version with cover-and-fan assembly. 325~350 watts for "B" version without moving air (maximum current of output #1 and #2 derated to 70%), or 650 watts with 50 CFM forced air provided by user.
6. All models may operated at no-load. At no-load, output voltage tolerance increases to 10%.

MECHANICAL SPECIFICATIONS



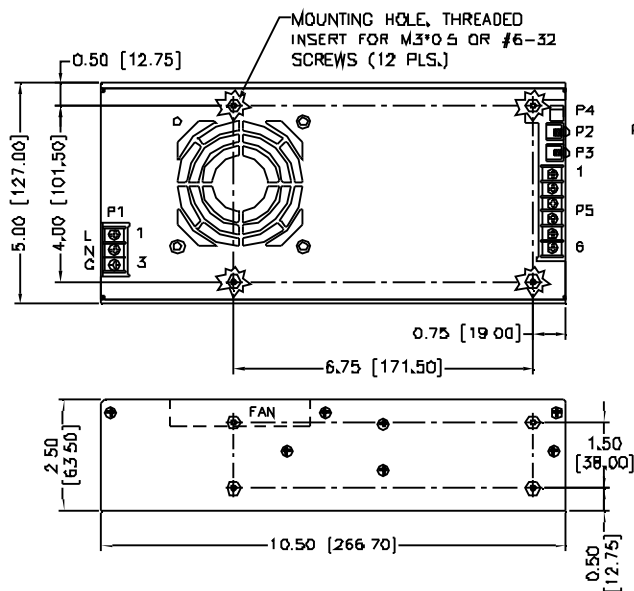
Single Output Models

- NOTE:
1. Dimensions shown in inch [mm].
 2. Tolerance 0.02 [0.5] maximum.
 3. Input connector P1 is Dinkle DT-35-BD1W -03 series are M3, Nickel plated.
 4. Connector P4 mates with Molex housing 30-37-2103 and pins 3263.
 5. P2-1, P2-2, P3-1 & P3-2 M3x0.5 screw connectors.
 6. Weight.



MECHANICAL SPECIFICATIONS

Multiple Output Models



NOTE:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0,5] maximum.
3. Input connector P1 is Dinkie DT-35-B01W
-03 screws are M3, Nickle plated.
4. Connector P4 mates with Malex housing
50-37-5103 and pins 5263
5. P2,P3: M3*0.5 screw connections.
6. Output connector P5 is Dinkie DT-35-
B01W-06 screws are M3, Nickle plated.
7. Weight:

PIN CHARTS

Single Output Models

MODEL	CONN PIN	P1 (AC)			P2	P3	P4			
		1	2	3			1	2	3	4
PM650-12 PM650-14 PM650-16 PM650-18	PM650-13 PM650-15 PM650-17	LIVE	NEUTRAL	GROUND	+V	-V	SIGNAL GROUND (-V)	+S (V)	-S (V)	PFD

MODEL	CONN PIN	P4						
		5	6	7	8	9	10	
PM650-12 PM650-14 PM650-16 PM650-18	PM650-13 PM650-15 PM650-17	INHIBIT +Ve	INHIBIT -Ve	N.C.	N.C.	0V (FAN)	FAN	

Multiple Output Models

MODEL	CONN PIN	P1 (AC)			P2	P3	P4			
		1	2	3			1	2	3	4
PM650-20 PM650-22 PM650-24 PM650-31 PM650-33 PM650-35 PM650-37	PM650-21 PM650-23 PM650-30 PM650-32 PM650-34 PM650-36	LIVE	NEUTRAL	GROUND	+V1	-V1	SIGNAL GROUND (-V)	+S (V1)	-S (V1)	PFD

MODEL	CONN PIN	P4							P5					
		5	6	7	8	9	10	1	2	3	4	5	6	
PM650-20 PM650-22 PM650-24	PM650-21 PM650-23	INHIBIT +Ve	INHIBIT -Ve	+S (V2)	-S (V2)	0V (FAN)	FAN	+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	