


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 $\pm 0.04\%/^{\circ}\text{C}$ 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. 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 $\pm 110\text{KHz}$
Power factor :	0.98 typical
Efficiency :	80% minimum
Hold-up time :	12 msec minimum at 110VAC
Line regulation :	$\pm 0.2\%$ 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, $\pm 8\text{KV}$ air and $\pm 6\text{KV}$ contact
EN61000-4-3:	Radiated immunity, 3V/m
EN61000-4-4:	Fast transient/burst, $\pm 2\text{KV}$
EN61000-4-5:	Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ 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

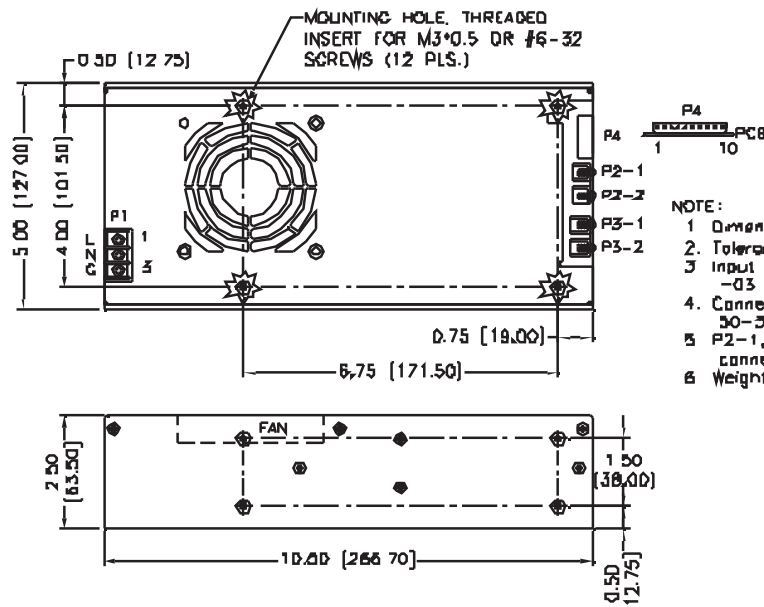
MODEL	Output # 1				Output # 2				Output # 3				Max. Output Power
	Vnom.	Imin.	I _{max.}	Tol.	Vnom.	Imin.	I _{max.}	Tol.	Vnom.	Imin.	I _{max.}	Tol.	
PM650-12	12V	0A	54.2A	2%									650W
PM650-13	15V	0A	43.4A	2%									650W
PM650-14	24V	0A	27.1A	2%									650W
PM650-15	27V	0A	24.1A	2%									650W
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 for mat 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

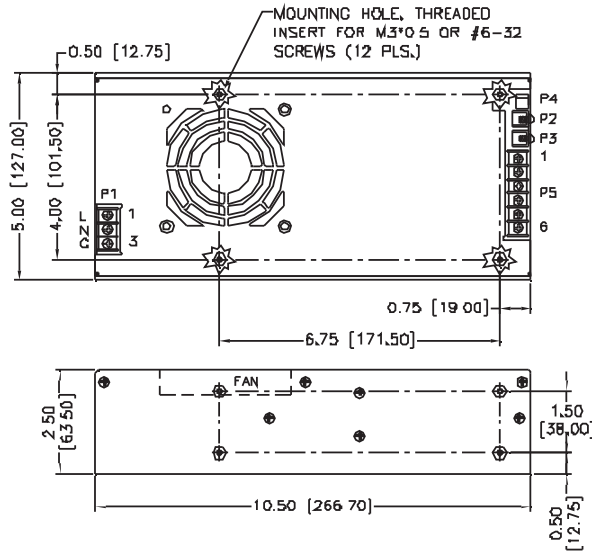


NOTE:

1. Dimensions shown in inch [mm].
2. Tolerance 0.02 [0.5] maximum.
3. Input connector P1 is Dinkle 07-35-801W -03 series are M3, Nickel plated
4. Connector P4 mates with Molex housing 30-37-3103 and pins 3263
5. P2-1, P2-2, P3-1 & P3-2 M3*0.5 screw connections.
6. Weight

Specifications are subject to change without notice. It is responsibility of each customer to thoroughly test each product and part number under their unique parameters and environments to ensure a product will work properly and reliably.

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-35-801W -03 screws are M3, Nickel plated.
 4. Connector P4 mates with Molex housing 50-37-5103 and pins 5263
 5. P2,P3: M3*0.5 screw connections.
 6. Output connector P5 is Dinkie DT-35-801W-06 screws are M3, Nickel 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

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