

## Ex300PQ-M 200-300W Series

### 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.



### OPERATING 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  $\pm 10$  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 radiate d  
EN61000-3-2: Harmonic distortion, Class A and D  
EN61000-3-3: Line flicker  
EN61000-4-2: ESD,  $\pm 8$  KV air and  $\pm 6$  KV contact  
EN61000-4-3: Radiated immunity, 3 V/m  
EN61000-4-4: Fast transient/burst,  $\pm 2$  KV  
EN61000-4-5: Surge,  $\pm 1$  KV diff.,  $\pm 2$  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

### SAFETY APPROVALS

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

## OUTPUT VOLTAGE/CURRENT RATINGS

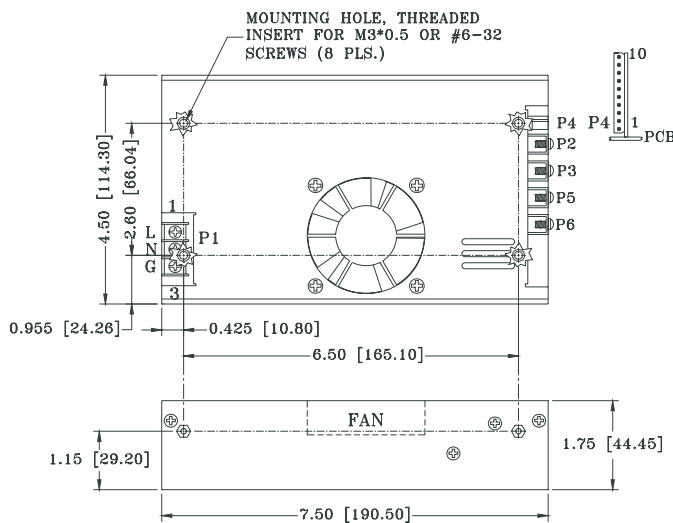
Model	Output # 1				Output # 2				Output # 3				Maximum Output # 4				Output Power
	Vnom.	Imin.	I <sub>max.</sub>	Tol.	Vnom.	Imin.	I <sub>max.</sub>	Tol.	Vnom.	Imin.	I <sub>max.</sub>	Tol.	Vnom.	Imin.	I <sub>max.</sub>	Tol.	
E1200PQ-M33	3.3V	3.0 A	60 A	3%													200 W
E1300PQ-M05	5.1V	3.0 A	60 A	2%													300 W
E1300PQ-M12	12V	1.2 A	25 A	2%													300 W
E1300PQ-M15	15V	1.0 A	20 A	2%													300 W
E1300PQ-M24	24V	0.6 A	12.5 A	2%													300 W
E1300PQ-M30	30V	0.5 A	10 A	2%													300 W
E1300PQ-M48	48V	0.5 A	6.3 A	2%													300 W
E4250PQ-M03051212	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
E4300PQ-M05121205	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
E4300PQ-M05151524	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
E4300PQ-M05121212	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
E4300PQ-M05121224	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
E4300PQ-M05121215	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
E4300PQ-M05241212	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
E4300PQ-M05240515	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
E4300PQ-M05120524	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
E4300PQ-M24120512	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
E4300PQ-M24120524	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
E4300PQ-M24121212	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
E4300PQ-M24240515	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
E4300PQ-M24241212	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:

- Optional fan control
- All outputs are floating. It can be connected externally for positive or negative output.
- Output #1 & #2 can be adjusted within  $\pm 5\%$  of their nominal voltage.
- Output #3 & #4 can be adjusted within  $\pm 15\%$  of their nominal voltage.
- Single output models may be operated at no-load. At no-load, output voltage tolerance increases to 10%.

## MECHANICAL SPECIFICATIONS

### Single Output Models

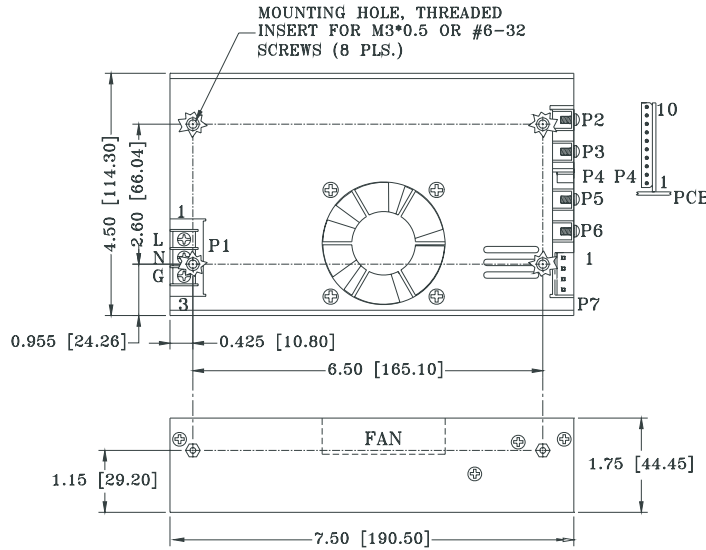


### NOTES:

- 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.

## MECHANICAL SPECIFICATIONS

Multiple Output Models



### NOTES:

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

## PIN CHART

Single Output Models

P1 (AC)			P2	P3	P4			
1	2	3			1	2	3	4
LIVE	NEUTRAL	GROUND	+VO1	+VO1	SIGNAL GROUND (- VO1)	+S (VO1)	-S (VO1)	PFD

P4						P5	P6	P7			
5	6	7	8	9	10			1	2	3	4
INHIBIT	N.C.	N.C.	N.C.	0V (FAN)	FAN	-VO1	-VO1	VOID	VOID	VOID	VOID

Multiple Output Models

P1 (AC)			P2	P3	P4			
1	2	3			1	2	3	4
LIVE	NEUTRAL	GROUND	+VO1	-VO1	SIGNAL GROUND (- VO1)	+S (VO1)	-S (VO1)	PFD

P4						P5	P6	P7			
5	6	7	8	9	10			1	2	3	4
INHIBIT	N.C.	+S (VO2)	-S (VO2)	0V (FAN)	FAN	+VO2	-VO2	+VO3	-VO3	+VO4	-VO4