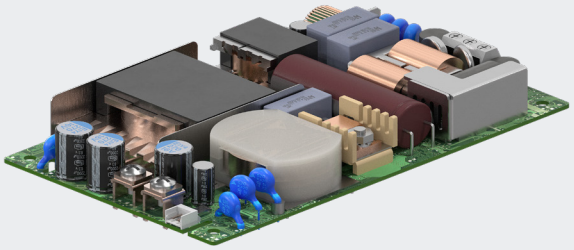
SL POWER
LPP300 SERIES

300 W Single Output Low Profile

Medical Industrial



Advanced Energy's SL Power LPP300 AC-DC are low profile (0.75") open frame power supplies suitable for many medical and industrial applications where space is at a premium.

LPP300 series models are available with nominal main outputs of 12 V, 24 V, or 48 V, and provide up to 300 W output power (with airflow).

All models have output overvoltage, short circuit, and overload protection and a small 3" x 5" x 0.75" form factor.

AT A GLANCE

Total Power

300 W

Input Voltage

85 to 264 VAC

# of Outputs

Single

SPECIAL FEATURES

- Low profile height of 0.75"
- Suitable for type BF applications
- 300 W max output power
- 3" x 5" x 0.75" size
- Industrial/medical safety
- -20°C to 70°C with derating
- 12 V fan output
- High efficiency 90% typical
- ±5% adjustment range

SAFETY

- IEC/EN/cUL60601-1, Type BF
- IEC/EN/cUL62368-1
- CB report
- CE

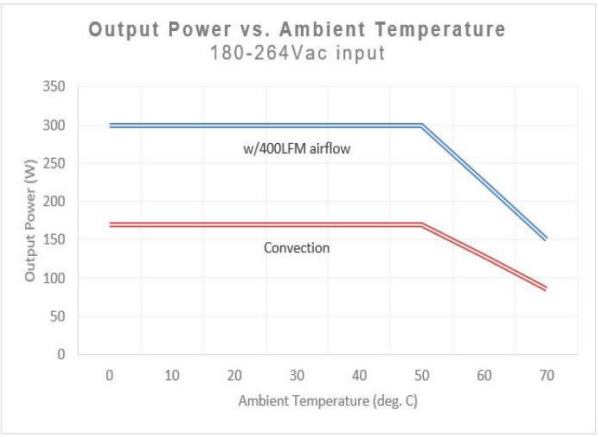
EMI/EMC

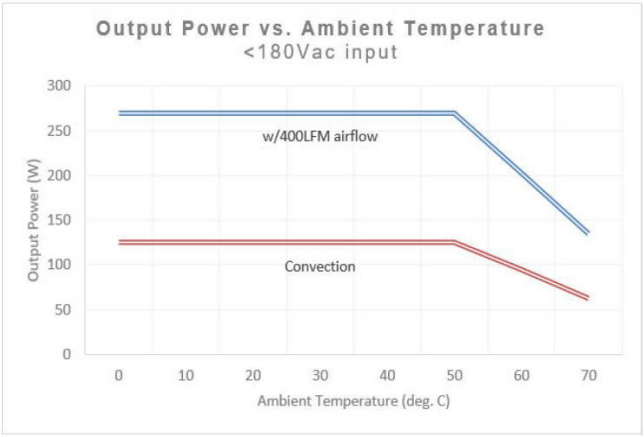
- EMI Class B
- IEC/EN60601-1-2, 4th Ed.

ELECTRICAL SPECIFICATIONS

Input	
Input Voltage	85 to 264 VAC (operating range), derating below 180 VAC 100 to 240 VAC (safety rating)
Frequency	47 to 63 Hz
Power Factor	0.9 min.
Input Current	TBD A max. at 115 VAC input, TBD A max. at 230 VAC input
Inrush Current	Cold start: 125 A peak at 264 VAC
Harmonics	Meets EN61000-3-2, Class A
Hold Up Time	16 ms min. at 120 W output, 10 ms min. at 185 W output
Turn On Time	2 s max. at 115 VAC input
Leakage Current Complies with BF rated application requirements	<500 µA at 264 VAC, 60 Hz, NC (Input-Earth) per IEC60601-1 Fig.13 <100 µA at 264 VAC, 60 Hz, NC (Input-Output) per IEC60601-1 Fig.15 <5000 µA at 264 VAC, 60 Hz, NC (Output-Earth) per IEC60601-1 Fig.16
Insulation Safety Rating Complies with BF rated application requirements	Input to GND: 2000 VAC (1 MOPP) Input to Output: 4000 VAC (2 MOPP) Output to GND: 2000 VAC (1 MOPP)
Output	
Output Power	170 W (Convection), 300 W (400 LFM airflow) 180 to 264 VAC input 125 W (Convection), 270 W (400 LFM airflow) <180 VAC input
Load Regulation	±2%
Line Regulation	±1%
Minimum Load	None required
Ripple and Noise	1% of Vout[1,2,3]
Output Adjustability	±5%
Over Load Protection	110% to 160% rated output current value, hiccup mode, auto-recovery
Short Circuit Protection	Short across the output terminals will not cause damage to the unit, hiccup mode
Over Voltage Protection	115% to 155% of nominal output voltage, latching, recycle AC power to recover
Over Temperature Protection	Will shut down upon an overtemperature condition, recycle AC power to reset

Note 1: 20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals, and load terminated with 0.1 µF ceramic and 47 µF low ESR capacitors.
Note 2: Ripple and noise at <0°C operating temperature will be <2.5% of Vout at 0% to 30% output load.
Note 3: 2% of Vout for <20% load.





EMC/EMI COMPLIANCE

Conducted Emissions	EN55011/32/CISPR11/32 Class B, FCC Part 15.107, Class B, Measured at 10%, 50%, and 100% load steps; 3db margin typical, at 120 and 230 VAC
Radiated Emissions	EN55011/32/CISPR11/32 Class A, FCC Part 15.107, Class A, Measured at 10%, 50%, and 100% load steps; TBD margin typical, at 120 and 230 VAC
Harmonic Current Emissions	EN61000-3-2, Class A at 230 VAC, 100% load
Flicker Test	EN61000-3-3
Electro-Static Discharge (ESD) Immunity	EN55024/IEC61000-4-2, Level 4: ±15 kV air, ±8 kV contact, Criteria A; IEC60601-1-2, 4th Edition, Table 4
Radiated RF EM Fields Susceptibility	EN55022/EN61000-4-3, 10 V/m (80 MHz to 2.7 GHz), 80% AM at 1 kHz, IEC60601-1-2 4th Edition, Table 4
Electrical Fast Transients (EFT)/Bursts	EN55024/IEC61000-4-4, Level 4, ±4 kV, 100 Khz rep rate, 40 A, Criteria A; IEC60601-1-2, 4th Edition, Table 5
Surges, Line to Line (DM) and Line to GND (CM)	EN55024/IEC61000-4-5, Level 4, ±2 kV line to line (DM), ±4 kV line to GND (CM), Criteria A; Surpasses IEC60601-1-2, 4th Ed,req
Conducted Disturbances Induced by RF Fields	EN55022/IEC61000-4-6, 3 V/m, Level 4, (0.15 MHz to 80 MHz; and 12 V/m) in ISM and amateur radio bands between 0.15 MHz and 80 MHz, 80% AM at 1 kHz, IEC60601-1-2, 4th Edition, Table 5
Rated Power Frequency Magnetic Fields	EN55024/IEC61000-4-8, Level 4: 30 A/m, 50/60 Hz, IEC60601-1-2, 4th Edition, Table 4
Voltage Interruptions, Dips, Sags & Surges	EN55024/IEC/EN61000-4-11: 100% dip for 10 ms, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees 100% dip at 100% output power for 20 ms, 0 deg., Criteria B 100% dip at 70% output power for 20 ms, 0 deg., Criteria A 100% dip for 5000 ms (250/300 cycles), Criteria B 60% dip for 100 ms, Criteria B 30% dip at 100% output power for 500 ms, Criteria B 30% dip at 70% output power for 500 ms, Criteria A IEC 60601-1-2, 4th Edition, Table 5

Note 1: EMI filtering is provided to meet the EMC requirements above. Unless otherwise stated, all tests are done at full load and 115 and 230Vac input. If any test would be marginal at other conditions, testing may be done at other stated conditions. All tests are to be performed in accordance with the stated standard. Acceptance is based on the supply continuing to function properly. Under some conditions, the outputs may pass through some level of signal.

Note 2: According to the standards, performance criteria are defined as following:

A – Normal performance during and after the test

B – Temporary degradation, self-recoverable

C – Temporary degradation, operator intervention required to recover the operation

D – Permanent damage

Note 3: Class B radiated emissions can be achieved by using Fair-Rite P/N 0443167251 or equiv. on the main output cable, and Fair-Rite P/N 0431173951 or equiv. on the fan output cable.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20°C to +70°C ambient (output power derated to 50% load at 70°C)
Storage Temperature	-40°C to +85°C
Humidity	5% to 95% RH, non-condensing
MTBF	> 500,000 hours
Operating Altitude	-500 m to 5,000 m
Vibration	Transportation Vibration ISTA-1A, Random Vibration per IEC60068-2-64; Shock Pulse per IEC60068-2-27, each of three axes
RoHS	ROHS compliant
REACH	REACH compliant

ORDERING INFORMATION

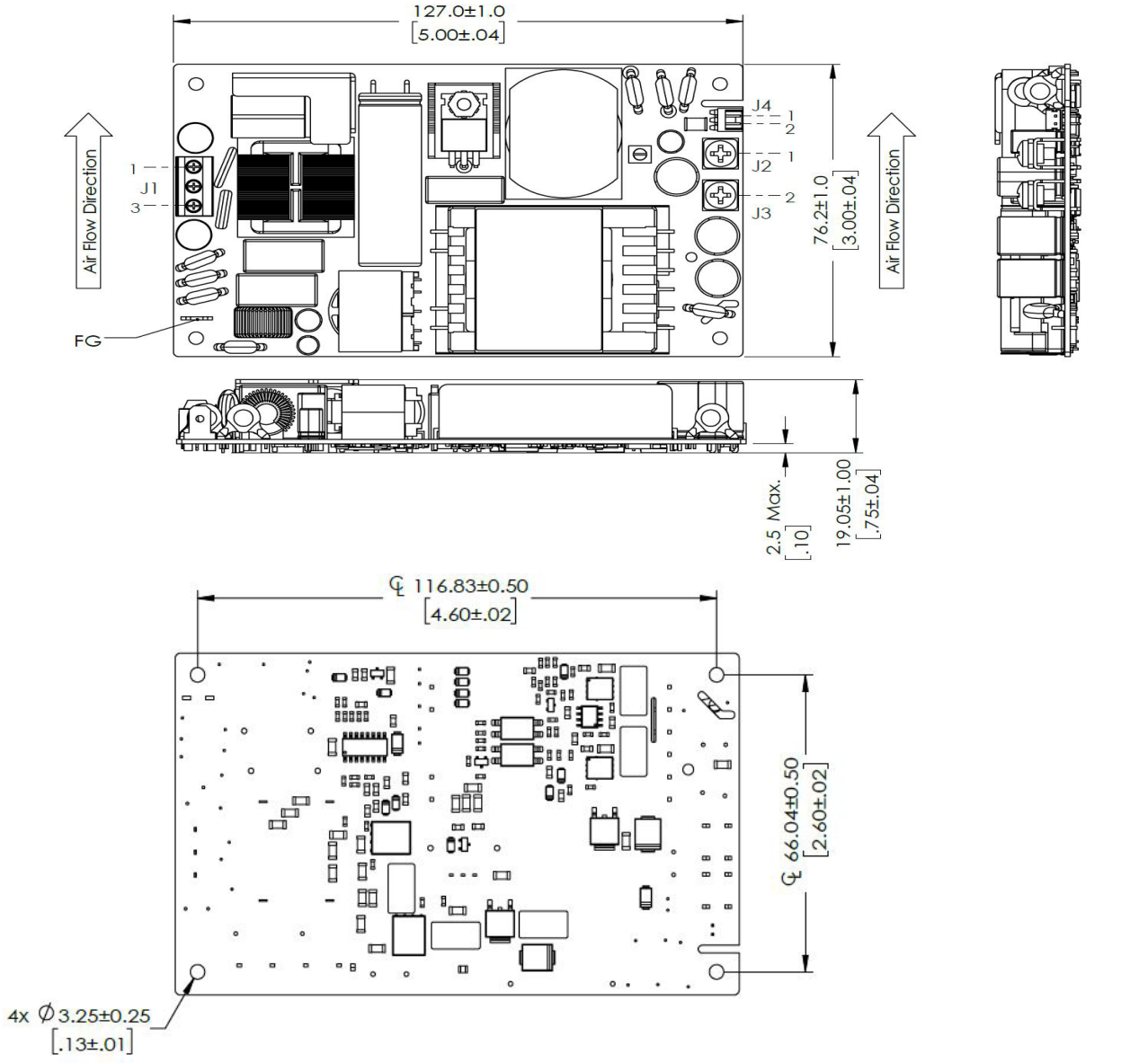
Model Number	Output Voltage	240 VAC Input Voltage Range				115 VAC Input Voltage Range			
		Output Current (forced airflow)[1]	Output Power (forced airflow)[1, 2]	Output Current (convection cooling)	Output Power (convection cooling)[2]	Output Current (forced airflow)	Output Power (forced airflow)[1, 2]	Output Current (convection cooling)	Output Power (convection cooling)[2]
LPP300S12K	12 V	24 A	300 W	14.170 A	170 W	21.50 A	270 W	10.42 A	125 W
LPP300S24K	24 V	12 A	300 W	7.090 A	170 W	10.75 A	270 W	5.21 A	125 W
LPP300S48K	48 V	6 A	300 W	3.655 A	170 W	5.38 A	270 W	2.61 A	125 W

Note 1: @240 VAC norminal input range, 400 LFM airflow required
Note 2: Total output power (including fan output 12 V@1 A)

PIN ASSIGNMENT

Connector	Pin #	Assignment	Mating Connector	Mating Pin
J1 (AC Input)	1	AC Line		Phoenix Contact 3200742
	2	NC		
	3	AC Neutral		
J2, J3 (DC Output)	1 (J2)	+Vout		Molex 19141-0058/0059/0063/0064/0065/0066
	2 (J3)	-Vout		
J4 (Fan Output)	1	-Vout	Molex 51065-0200	Molex 50372-8000
	2	+Vout		
FG		Ground		Molex 19002-0005

MECHANICAL DRAWING



ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

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