

# SL POWER SLB300 SERIES

300 Watts Single Output  
Medical & Industrial Grade



Medical



Industrial

Advanced Energy's SL Power SLB300 medically-approved AC-DC power supplies are available with a nominal main output of 12 V, 15 V, 18 V, 24 V, 36 V, 48 V or 56 V. SLB300 power supplies provide up to 300 Watts with air flow. All models have output overvoltage, short circuit and overload protection and a 3 x 5 x 1.4 inch form factor.

## AT A GLANCE

### Total Power

300 Watts

### Input Voltage

80 to 264 VAC

### # of Outputs

Single



### SPECIAL FEATURES

- 190 Watts Convection
- 300 Watts with 100 LFM Airflow
- 3" x 5" x 1.4" Form Factor
- Universal Input 80 to 264 VAC
- For 1U Applications
- Class B Conducted and Radiated EMI
- 3 Years Warranty
- RoHS Compliant

### SAFETY

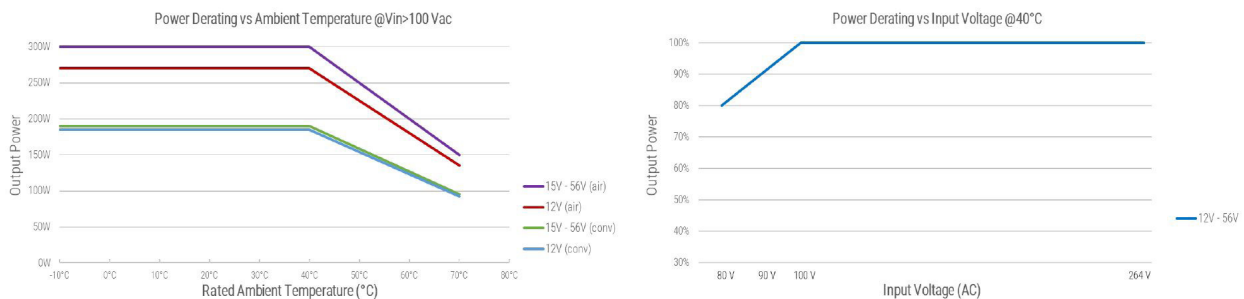
- EN/CSA/IEC/UL62368-1
- EN/CSA/IEC/UL60601-1-1, 3rd Ed

**ELECTRICAL SPECIFICATIONS**

Input	
Input range	80 to 264 VAC, 47 to 63 Hz, 1Ø. 120 to 370 VDC
Earth leakage current	<300 µA @ 264 VAC, 60 Hz, NC; <600 µA SFC
Efficiency	92% typical
Isolation voltage (Class I version)	Input/Ground: 1800 VAC (1 MOPP) Output/Ground: 1800 VAC (1 MOPP)
Isolation voltage (Class II version)	Input/Output: 4300 VAC (2 MOPP)
Output	
Maximum power	Max of 190 Watts for convection cooled, 300 Watts with 100 LFM air flow. See "Ordering Information" section for specific voltage model ratings
Output voltage	See "Ordering Information" section
Voltage adjustability	Fixed output
Ripple and noise	0.5% RMS, 1% pk-pk for all models. See "Ordering Information" section for details. (20 MHz bandwidth, differential mode. Measured with noise probe directly across output terminals, and load terminated with 0.1µF ceramic and 10µF low ESR capacitors)
Total regulation	±3% (combined line, load and initial setting)
Minimum load	Not required
Switching frequency	PFC: fixed, 65 kHz. Main Converter: variable 35 to 200 kHz, 65 to 70 kHz at full load
Transient response	500 µs response time for return to within 0.5% of final value for a 50% load step change, $\Delta i/\Delta t < 0.2 \text{ A}/\mu\text{s}$ . Max. voltage deviation is ±3%
Hold-up time	16 ms at 190 W, 120 VAC, 60Hz
Turn on time	<3 s @ 115 VAC, full load
Reliability	
MTBF	250K hours, 25°C, 110 VAC
Protection	
Overvoltage protection	Latch mode. See "Ordering Information" for trip range.
Short circuit protection	Short across the output terminals will not cause damage to the unit. Hiccup mode. Auto recovery.
Thermal protection	Will shutdown upon an over temperature condition.
Overload protection	130% to 180% of rated output current value. Hiccup mode.

**DERATING CURVE**

Notes: 190 W convection cooled and 300 W continuous with 100 LFM airflow, derate output power to 50% at 70°C.



Notes: Tested at 300 LFM airflow. Other values available upon request.

## ORDERING INFORMATION

Model Number	Output Voltage	With Air Flow		Convection		Conduction		Fan Output
		Output Current	Output Power	Output Current	Output Power	Output Current	Output Power	
SLB300S12x	12 V	22.5 A	270 W	15.4 A	185 W	15.4 A	185 W	Custom modifications available upon request
SLB300S15x	15 V	20.0 A	300 W	12.7 A	190 W	12.7 A	190 W	
SLB300S18x	18 V	16.7 A	300 W	10.6 A	190 W	10.6 A	190 W	
SLB300S24x	24 V	12.5 A	300 W	7.9 A	190 W	7.9 A	190 W	
SLB300S36x	36 V	8.3 A	300 W	5.3 A	190 W	5.3 A	190 W	
SLB300S48x	48 V	6.3 A	300 W	4.0 A	190 W	4.0 A	190 W	
SLB300S56x	56 V	5.4 A	300 W	3.4 A	190 W	3.4 A	190 W	

## Notes:

1. Consult factory for availability of all models as some models will be part of the initial product release.
2. Total convection power is 190 Watts.

## EMI/EMC COMPLIANCE

Conducted emissions	EN55011/22/32 Class B, FCC Part 15, Subpart B, Class B
Radiated emissions	EN55011/22/32 Class A, FCC Part 15, Subpart B, Class A w/6db margin
Harmonic current emissions	EN61000-3-2, Class A
Voltage fluctuations & flicker	IEC61000-3-3
Electro static discharge immunity	Static Discharge Immunity EN55024/IEC61000-4-2, Level 4: ±8kV contact, ±15kV air, Crit. A; IEC60601-1-2, 4th Ed. Table 4
Radiated RF immunity	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz; IEC60601-1-2, 4th Edition, Table 4
Electrical fast transients / bursts	EN55024/IEC61000-4-4, Level 4, ±4kV, 100Khz rep rate, 40A, Criteria A; IEC60601-1-2, 4th Edition, Table 5
Surge susceptibility	EN55024/IEC61000-4-5, Level 4, ±2kV DM, ±4kV CM, Criteria A; Surpasses IEC60601-1-2, 4th Ed. requirements.
Conducted RF susceptibility	EN55022/IEC61000-4-6, 3V/m – Level 4, 0.15 to 80Mhz; and 12V/m in ISM and amateur radio bands between 0.15Mhz and 80Mhz, 80% AM at 1KHz; IEC60601-1-2, 4th Edition, Table 5.
Power frequency magnetic fields test	EN55024/IEC1000-4-8, Level 4: 30A/m, 50/60 Hz; IEC60601-1-2, 4th Edition, Table 4
Voltage dip immunity	EN55024/IEC/EN61000-4-11: 100% dip for 10 ms, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees; 100% dip for 20ms, 0 deg., Crit. A; 100% dip for 5000ms (250/300 cycles), Crit. B; 60% dip for 100ms, Criteria B; 30% dip for 500ms, Crit. A; IEC60601-1-2, 4th Edition, Table 5

## Notes:

Performance criteria are based on EN55024. According to the standards, performance criteria are decoded 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

## ENVIRONMENTAL SPECIFICATIONS

Vibration	Operating: 0.003g <sup>2</sup> /Hz, 1.5grms overall, 3 axes, 10 min/axis Non-operating: 0.026g <sup>2</sup> /Hz, 5.0grms overall, 3 axes, 1 hr/axis
Shock	Operating: Half-sine, 20gpk, 10ms, 3 axes, 6 shocks total Non-operating: Half-sine, 40 gpk, 10ms, 3 axes, 6 shocks total
Operating temperature	-10°C to +70°C. Start up at -40°C, Full load
Temperature derating	Derate output power linearly above 40°C to 50% at 70°C
Storage temperature	-40°C to +85°C
Altitude	Operating: -500 to 15,000 ft (5000 m). Non-operating: -500 to 40,000 ft
Relative humidity	5% to 95%, non-condensing

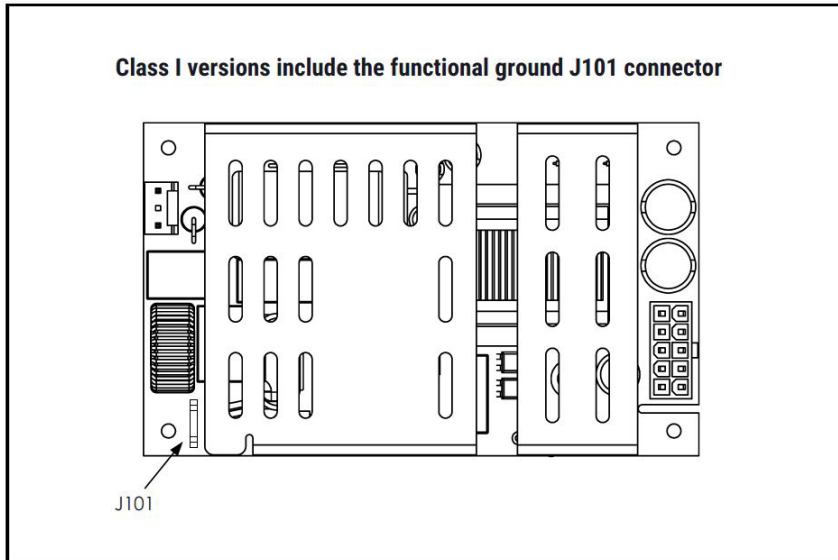
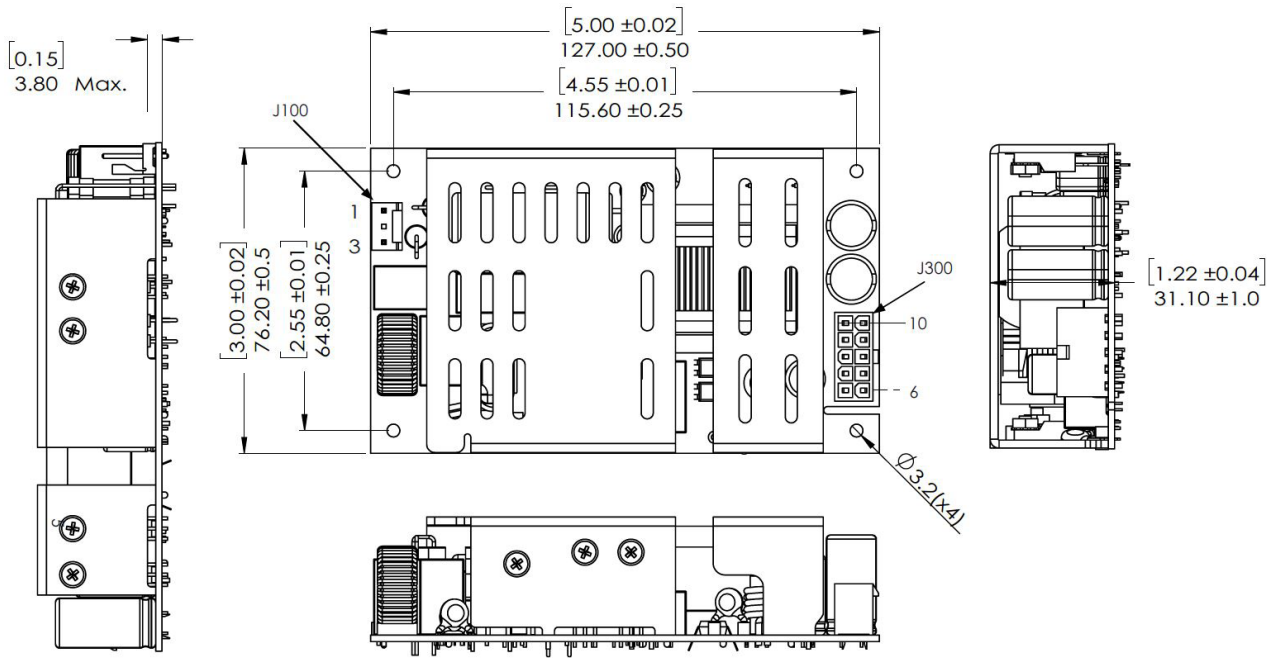
## PIN ASSIGNMENTS

Type	Connector	Pin Assignments		Mating Connector
J100 (Input connector, Class II)	TE# 640445-3 (1 pin removed)	PIN 1	AC Neutral	TE/AMP# 640250-3 Pins: 640252-1
		PIN 3	SPARE	
J101 (Ground, Class I only) <sup>23</sup>	AMP 1217125-1	-	Functional Ground (FG)	MOLEX# 19002-0001
J300 (Output connector)	MOLEX# 87427 (2x5)	PIN 1	RTN	MOLEX# 39-01-2105 Or CviLux# CP-01110030 Pins: CP-01100106-HC
		PIN 2	RTN	
		PIN 3	RTN	
		PIN 4	+Vo	
		PIN 5	+Vo	
		PIN 6	RTN	
		PIN 7	RTN	
		PIN 8	+Vo	
		PIN 9	+Vo	
		PIN 10	+Vo	

## Notes:

- Contact AE for other compatible connector options.
- For Class I: the power supply should be mounted on a conducted plate for better EMI performance.
- FG is safety ground connection, Class I only.
- This power supply requires mounting on standoffs 0.20" (5mm) minimum in height.

MECHANICAL DRAWING



Notes:

1. All dimensions in mm (inches).
2. Mounting holes should be grounded for EMI purpose.
3. FG is safety ground connection.
4. This power supply requires mounting on metal standoffs 0.20" (5mm) min. in height.
5. Dimensions: W: 3.0" x L: 5.0" x H: 1.4"
6. Weight: 370 g.



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## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three 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.

**PRECISION | POWER | PERFORMANCE | TRUST**

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