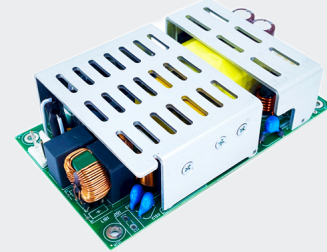


SL POWER SLB300 SERIES

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 1.22 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 1.22" Form Factor
- Universal Input 80 to 264 VAC
- For 1U Applications
- Class B Conducted and Radiated EMI
- 3 Years Warranty
- RoHS Compliant

SAFETY

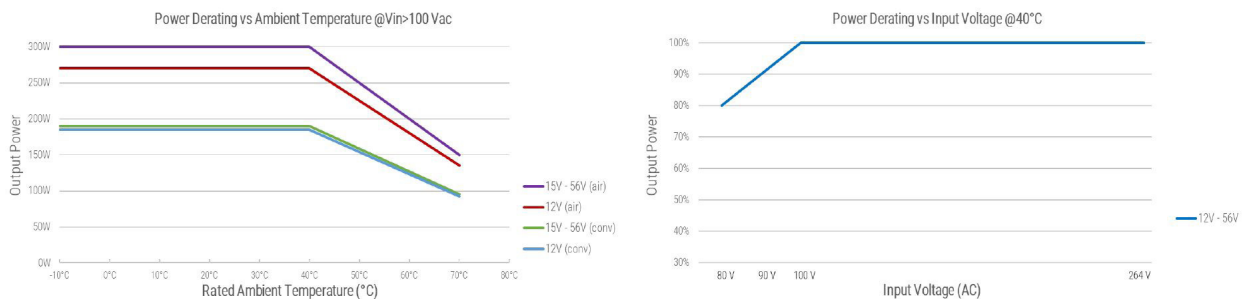
- EN/CSA/IEC/UL62368-1
- EN/CSA/IEC/UL60601-1-1, 3rd Ed

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 ² /Hz, 1.5grms overall, 3 axes, 10 min/axis Non-operating: 0.026g ² /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 |

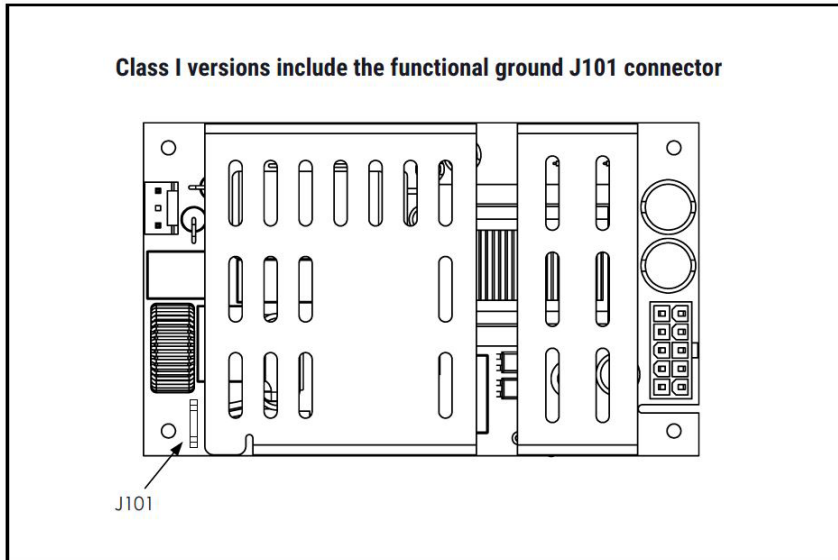
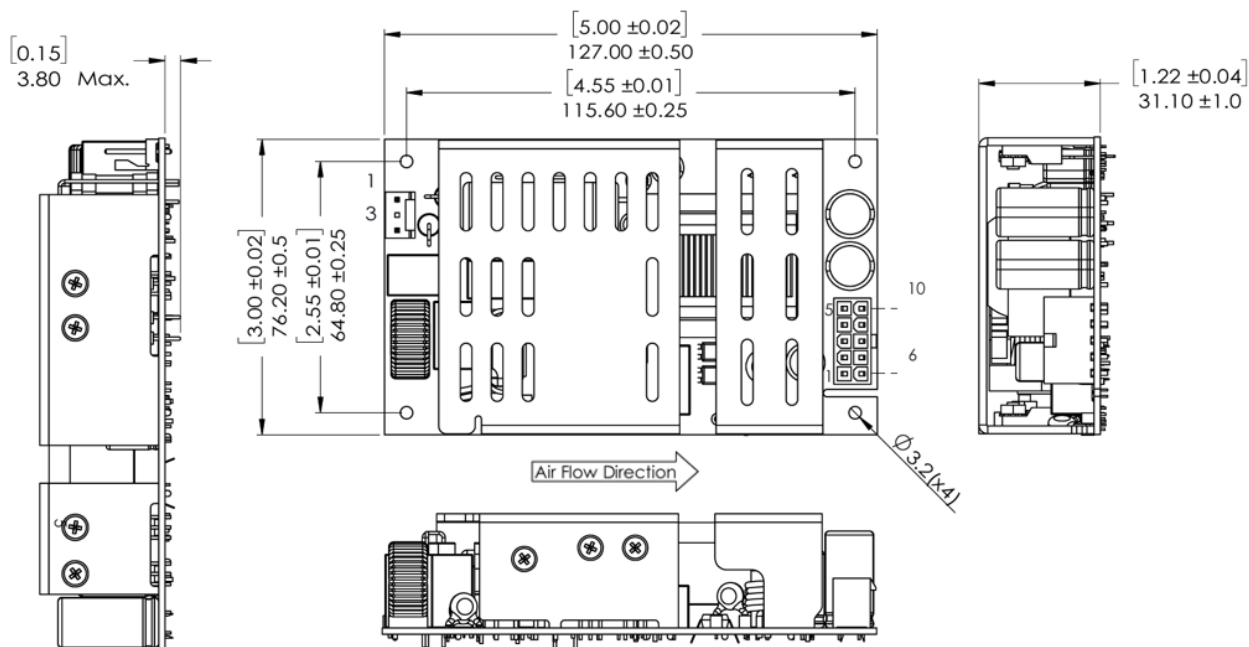
PIN ASSIGNMENTS

| 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 | AC Line | |
| J101 (Ground, Class I only) ²³ | 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: 1.22"
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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