

SL POWER SLB125 SERIES

125 Watts Single Output
Medical & Industrial Grade



Medical



Industrial

Advanced Energy's SL Power SLB125 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. SLB125 power supplies provide up to 125 Watts with air flow. All models have output overvoltage, short circuit and overload protection and a small 2 x 4 x 1.2 inch form factor.

AT A GLANCE

Total Power

125 Watts

Input Voltage

90 to 264 VAC

of Outputs

Single

SPECIAL FEATURES

- 85 Watts Convection
- 125 Watts with 200 LFM Airflow
- Small 2" x 4" x 1.2" Form Factor
- Certified to 90 to 264 VAC Input
- For 1U Applications
- 2 x MOPP Isolation
- Meets Heavy Industrial/4th Edition EMC
- -20°C to 70°C Operating Temperature Range
- 3 Years Warranty

SAFETY

- UL/CSA/IEC/IEC60601-1, 3rd. Ed.
- EN/IEC62368-1



ELECTRICAL SPECIFICATIONS

Input	
Input range	90 to 264 VAC, 47 to 63 Hz, 1Ø
Input current	1.0 A max at 230 VAC, 2.0 A max at 115 VAC
Inrush current	70 A max., cold start @ 25°C
Input fuses	F2: 3.15 A, 250 VAC
Leakage current	Earth <500 µA @ 264 VAC, 60 Hz, NC
Efficiency (typ. @ 25°C)	SLB125S12x, SLB125S15x 89% @ 230 VAC, 86.5% @ 115 VAC, full load SLB125S18x 89% @ 230 VAC, 87.0% @ 115 VAC, full load SLB125S24x, SLB125S36x 89% @ 230 VAC, 87.0% @ 115 VAC, full load SLB125S48x, SLB125S56x 90% @ 230 VAC, 88% @ 115 VAC, full load
Isolation voltage	Input/Ground: 1500 VAC (1 MOPP) Input/Output: 4000 VAC (2 MOPP) Output/Ground: 1500 VAC Double/reinforced between input and output
Output	
Maximum power	Max of 85 Watts for convection cooled, 125 Watts for fan cooled.
Ripple and noise	0.5% RMS, 1% pk-pk for all models. (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	±2% (Maximum deviation from nominal voltage for all loading conditions)
Minimum load	Not required
Overshoot	<5% overshoot at turn-on, <5% overshoot at turn-off, under all conditions
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 ±3.5%, @ 25°C
Hold-up time	16 ms minimum from loss of AC input at 115 VAC
Turn on time	<2 s @ 115 VAC (<3 s for 12 V output model)
Cooling	Convection (85 W Output), forced air of 200 LFM (125W output)
Reliability	
MTBF	>500K hours, 25°C, full rated load (Calculation is done based on Telcordia reports)
Warranty	3 years
Protection	
Overvoltage protection	OVP firing reduces output voltage to <50% of nominal in <50 ms. See "Ordering Information" for trip range.
Short circuit protection	Short across the output terminals will not cause damage to the unit. Hiccup mode.
Thermal protection	Will shutdown upon an over temperature condition.
Overload protection	120% to 180% of rated output current value. Hiccup mode.

SAFETY

UL/CSA/Demko	EN/CSA/UL/IEC 60601-1 3rd edition BF Rated & EN62368-1
CB report	Yes
Isolation type	Double/Reinforced between input and output

ORDERING INFORMATION

Model Number	Output Voltage	Output Current (Convection)	Output Current (Force Air)	Output Power (Force Air)	Total Regulation	OVP Threshold	Ripple & Noise
SLB125S12x	12 V	7.1 A	9.8 A	118 W	±2%	14.0 ± 1.1V	0.5%RMS, 1.5% pk-pk
SLB125S15x	15 V	5.6 A	7.9 A	118 W	±2%	18.0 ± 1.5V	0.5%RMS, 1.0% pk-pk
SLB125S18x	18 V	4.7 A	6.5 A	125 W	±2%	21.0 ± 3.0V	0.5%RMS, 1.0% pk-pk
SLB125S24x	24 V	3.6 A	5.2 A	125 W	±2%	28.0 ± 4.0V	0.5%RMS, 1.0% pk-pk
SLB125S36x	36 V	2.4 A	3.5 A	125 W	±2%	40.0 ± 4.0V	0.5%RMS, 1.0% pk-pk
SLB125S48x	48 V	1.8 A	2.6 A	125 W	±2%	55.0 ± 4.0V	0.5%RMS, 1.0% pk-pk
SLB125S56x	56 V	1.5 A	2.2 A	125 W	±2%	60.0 ± 4.0V	0.5%RMS, 1.0% pk-pk

Notes: Replace the "x" at the end of the model number with "C" for class II (ungrounded) input or replace with "K" for class I (grounded) input.

EMI/EMC COMPLIANCE

Conducted emissions	EN55032 Class B; FCC Part 15 (Class I and Class II Input Models)
Radiated emissions	EN55032 Class B; FCC Part 15 (Class I and Class II Input Models)
Harmonic current emissions	EN61000-3-2, Class A, B, C & D, Meets class C from 25W to 125W. This is based on limits set @ 125W
Voltage fluctuations & flicker	EN61000-3-3
Electro static discharge immunity	EN61000-4-2, Level 3: 6kV contact, 8kV air, Criteria A
Radiated RF fields susceptibility	EN61000-4-3, Level 3 (3V/m), Criteria A
Electrical fast transients / bursts	EN61000-4-4, Level 3 (PS: 2kV-40A, other lines 1kV-20A), Criteria A, EN55024/IEC61000-4-4, Level 4, ±4kV, 100Khz rep rate, 40A, Criteria A, IEC60601-1-2, 4th Edition, Table 5
Surge susceptibility	EN61000-4-5, Installation Class 3 (1kV diff. mode, 2kV common mode), Criteria A
Conducted RF susceptibility	EN61000-4-6, Level 3 (3Vrms), Criteria A
Power frequency magnetic fields test	EN61000-4-8, Level 3 (3A/m), Criteria A
Voltage Sags & Surges	EN61000-4-11, 95% dip/0.5 cycle (Criteria A), 60%/5 cycles (Criteria B), 30%/25 cycles (Criteria A), Loading is 70% of 100W with 100VAC

Notes:

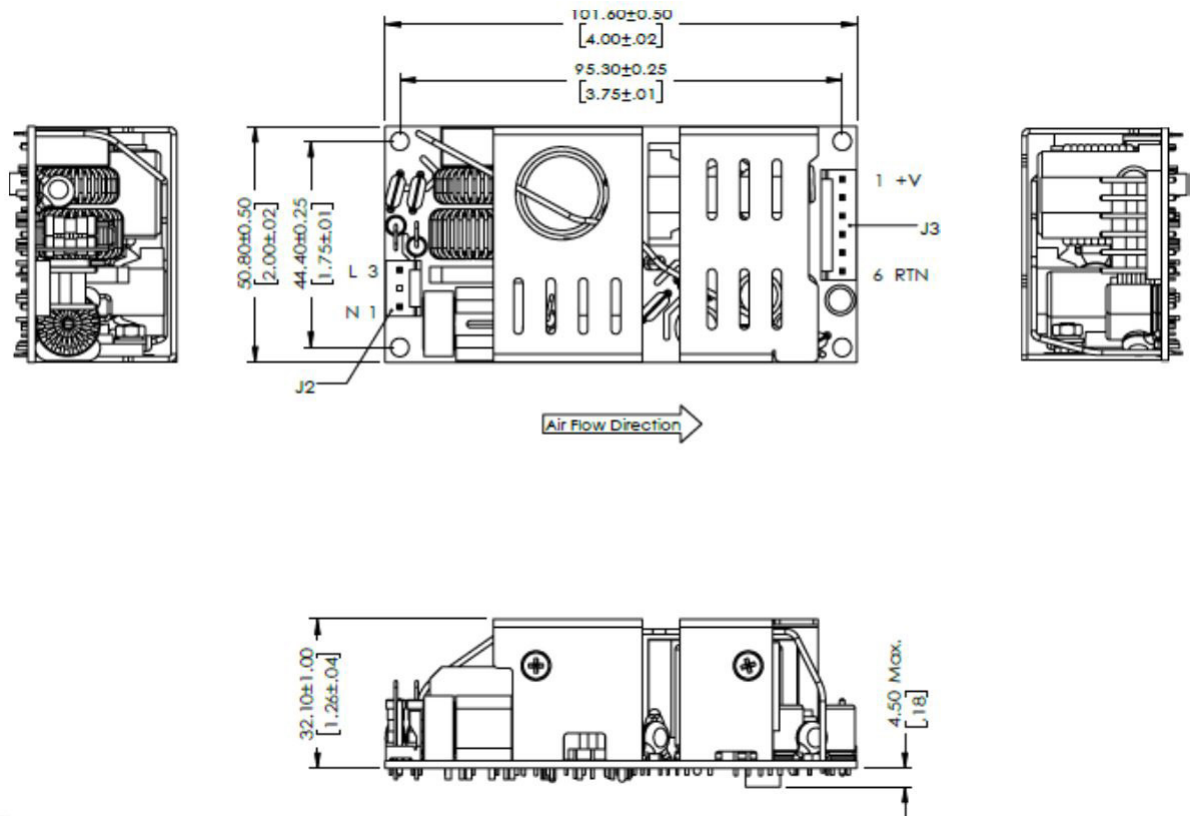
Performance criteria are based on EN55024. According to the standards, performance criteria are decoded as following:

- 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	Random vibration per MIL-STD-810E, Method 514.4, Cat. 1, Figure 514.4-1, 1 hr in each of three axes
Shock	Non-operating: Half-sine, 40 gpk, 10ms, 3 axes, 6 shocks total
Cooling	Convection / Air flow
Operating temperature	-20°C to +70°C
Temperature derating	50% derating at 70°C
Storage temperature	-40°C to +85°C
Altitude	Operating: -500 to 5,000 m. Non-operating: -500 to 40,000 ft
Relative humidity	5% to 95%, non-condensing

MECHANICAL DRAWING



- Notes:
- 1. All dimensions in mm (inches), undefined tolerance is $\pm 0.5\text{mm}$ (.02").
 - 2. Mounting holes should be connected together for EMI purpose.
 - 3. FG is safety ground connection.
 - 4. This power supply requires mounting on metal standoffs 0.20" (5mm) min. in height.

PIN ASSIGNMENTS

Connector	Pin Assignments		Mating Connector	Mating Pin
J2 (Input connector)	PIN 1	AC Neutral	Tyco/AMP: 640250-3	3-640252-1
	PIN 2	SPARE		
	PIN 3	AC Line		
J3 (Output connector)	PIN 1	+Vo	AMP: 640250-6	3-640252-1
	PIN 2	+Vo		
	PIN 3	+Vo		
	PIN 4	RTN		
	PIN 5	RTN		
	PIN 6	RTN		



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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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