500-1500W Industrial Power supplies

https://product.tdk.com/en/power/lzsa
www.emea.lambda.tdk.com/lzsa

Industrial COTS Test COMM Broadcast

The LZSA series offers a unique feature set not commonly found with standard off-the-shelf supplies. Compliance to the MIL-STD-810E standards for shock and vibration and board coating make the LZSA power supplies ideal for use in a variety of harsh environment applications. They also comply with the tough ring wave lightning surge test per IEEE C62.41. Features include remote on/off, remote sense, frequency synchronization and a wide operating temperature range of -40°C to +71°C. The series also has a wide adjustment range which can be programmed using an external voltage or resistance.

Features	Benefits
• Rugged Mechanical Design With Coating on PCBs	• High Reliability in Harsh Environments
• Superior Thermal Design	• Long Life Even at 71°C Operation
• Wide Range, Programmable Output Adjustment	• Reduces The Need For custom Outputs
• Input Voltage Transient Protection	• Reduced System Filtering

Model Selector

Part Number for Ordering	Model Number*	Nominal Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)
LZSA-1000-2	LZS-A1000-2	12	10 - 15.75	84	1008
LZSA-500-3	LZS-A500-3	24	18 - 29.4	21	504
LZSA-1000-3	LZS-A1000-3	24	18 - 29.4	42	1008
LZSA-1500-3-001	LZS-A1500-3-001	24	18 - 29.4	63	1512 (3)
LZSA-1500-4	LZS-A1500-4	48	36 - 56	31.5	1512 (3)

* This part number is listed on the LZSA rating label and safety files

Specification

Model		LZSA500	LZSA1000	LZSA1500
Input				
Input Voltage Range (Operating)	Vac	85 - 265		
Nominal Input Voltage Range	Vac	100-240 (Note: Safety certified for 90-264Vac)		
Input Frequency [2]	Hz	47-440 (Note: Safety certified for 47-63Hz only)		
DC Input Voltage range [1]	Vdc	100-380V (Note: Safety certified for AC input only)		
Input Current Maximum (100Vac)	A	7.3	15	18
Inrush Current (110 / 220Vac)	A	25 / 45	30 / 40	
Leakage Current (AC line to chassis ground)	uA	<500 at 265Vac, 60Hz		<1500 at 265 Vac, 60Hz
Power Factor	-	EN61000-3-2 Class A		
Harmonics	-	EN61000-3-2 Compliant		
Hold Up Time at 110Vac Input	ms	20 hold up, 20 ride through		
Efficiency (Typical)	-	84		
Emissions	-	EN55032/EN55011 Class B, EN61000-3-3, MIL STD 461/462D, CE102		
Immunity	-	See Immunity Table		
Line Dip	-	SEMI F47 Compliant [4]		
Safety Certifications and Markings	-	IEC/EN/UL/CSA62368-1, 60950-1, UL508, CE Mark, UKCA Mark		

Immunity

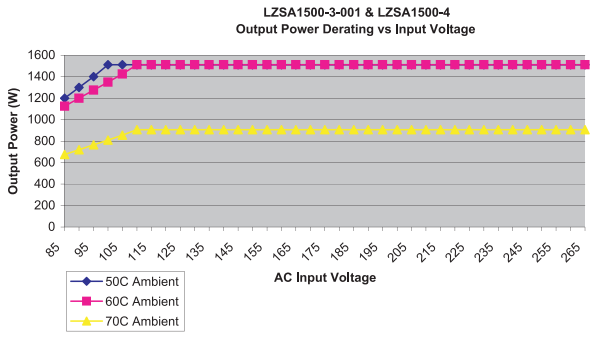
Test	Standard	Test Level	Criteria	Notes
ESD	IEC 61000-4-2	±8kV air discharge, ±6kV contact discharge	B	See test report on website
Radiated Susceptibility	IEC 61000-4-3	10V/m, 80 - 1000MHz (80% AM at 1kHz)	A	
Electrical Fast Transient Burst	IEC 61000-4-4	AC line pulses of ±2 kV; I/O line pulses of ±2kV>3m	A	
Surge	IEC 61000-4-5	±2kV common mode, ±1kV differential mode	A	
Conducted Susceptibility	IEC 61000-4-6	10Vrms, 150kHz - 80 MHz 1kHz 80% AM	A	
Magnetic fields	IEC 61000-4-8	30Arms/m @ 50Hz	A	
Voltage Dips and Input Interruptions	IEC 61000-4-11	Voltage Dips of 30%, 60% and 100%; Interruptions of >95%	A & B	
Ring Wave	IEEE C62.41	6kV/30 ohms	A	
SEMI F47 Line Dip	SEMI F47			See installation manual on website

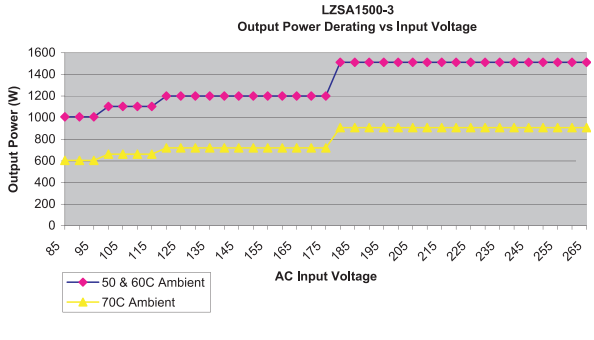
Specification

Model		LZSA500	LZSA1000	LZSA1500
Output				
Line Regulation	%	0.10		
Load Regulation	%	0.10		
Transient Response	-	±1% deviation, recovering to ±0.2% in <1.25ms (25% load change)		
Temperature Coefficient	ppm/°C	100		
Ripple & Noise (pk-pk) (max.)	mV	75	75	24V: 75, 48V: 150
Minimum Load	A	None		
Overcurrent Protection	%	110-130		
Overvoltage Protection	-	User adjustable from front panel		
Overtemperature Protection	-	Internal thermostat. Cycle AC to reset.		
Remote Sense	-	Compensates for a total of 1V cable drop		
Remote On/Off	-	TTL compatible, active high		
Remote Adjust	-	Using front panel potentiometer, Resistance (1k/V), or Voltage (1V/V)		
Input Power Good	-	Opto coupled, conducts up to 1mA @ <0.4V when active		
DC Good	-	Opto coupled, conducts up to 1mA @ <0.4V when active		
Inverter good	-	Opto coupled, conducts up to 1mA @ <0.4V when active		
Synchronization (Sync)	-	Auxiliary signal at approximately 200kHz used for synchronizing with other equipment.		
Indicators	-	Green LED indicates output good; red LED indicates overvoltage, overtemperature, or overcurrent		
Parallel Operation	-	Single wire current share		
Series Operation	-	See Installation Manual		
Environmental				
Operating Temperature	°C	-40 to +71, derate linearly to 60% load from 60 - 71° (A 20 minute warm up period needed for <30°)		
Storage Temperature	°C	-40 to +85		
Humidity (non condensing)	%RH	10 - 90		
Cooling	-	Variable speed, ball bearing fan		
Altitude	m	3,000 operating, 12,000 non-operating		
Withstand Voltage	VDC	Input to Ground 2,121, Input to Output 4,242, Output to Ground 500		
Vibration	-	MIL-STD-810E, Method 514.4, Category 1, 9		
Shock	-	MIL-STD-810E, Method 516.4, Procedure I, II, IV, VI		
Other				
Weight (Typ)	lbs / kg	6.6 / 2.95	8.1 / 3.7	
Size (WxHxD) (excluding bus bars)	mm	108 x 121 x 260	143 x 121 x 267	
Size (WxHxD) (excluding bus bars)	Inches	4.25 x 4.75 x 10.25	5.62 x 4.75 x 10.5	
MTBF - Bellcore	Hours	132,958	99,039	99,039
Warranty	Years	5		

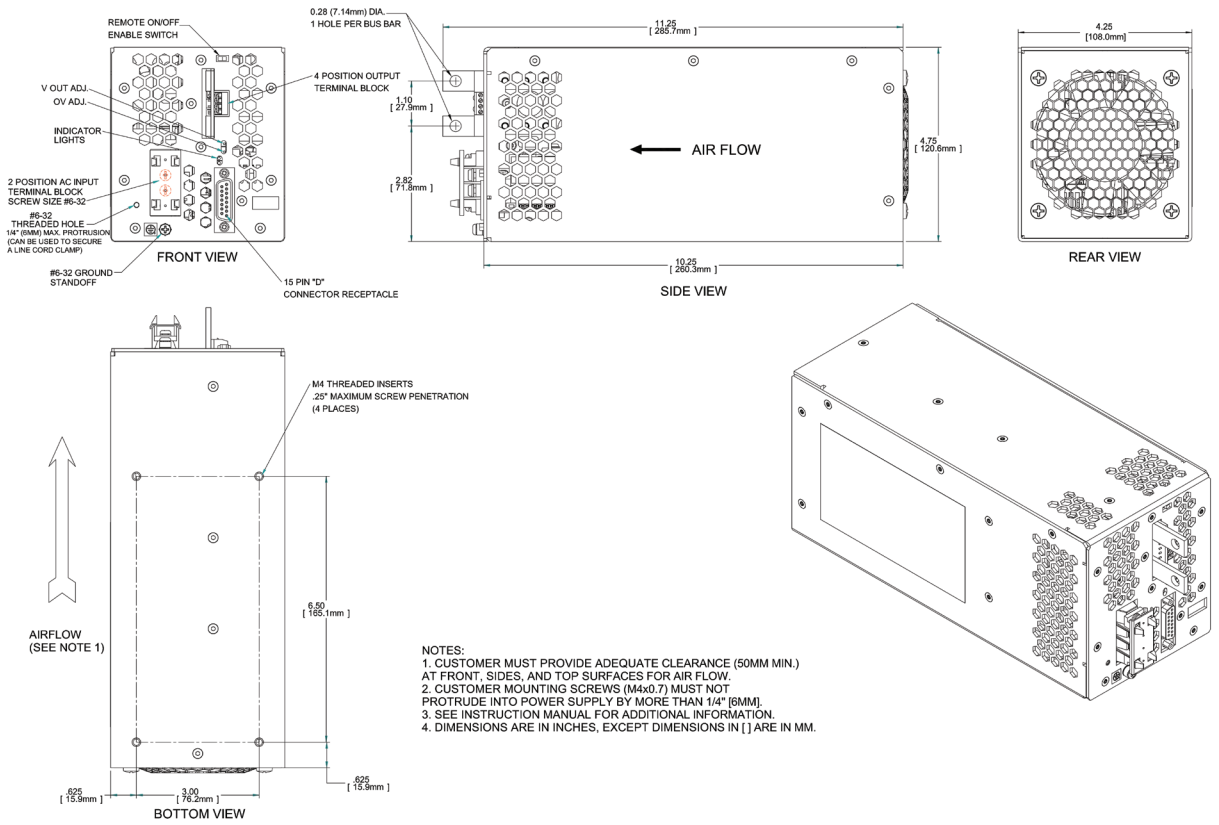
Notes
(1) Startup >110VDC
(2) Reduced power factor above 63Hz
(3) 1512W @ 180-265Vac, 1200W @ 120Vac, 1104W @ 100Vac, 1008W @ 85Vac
(4) See website for detailed specifications, test methods and installation manual

Derating Charts



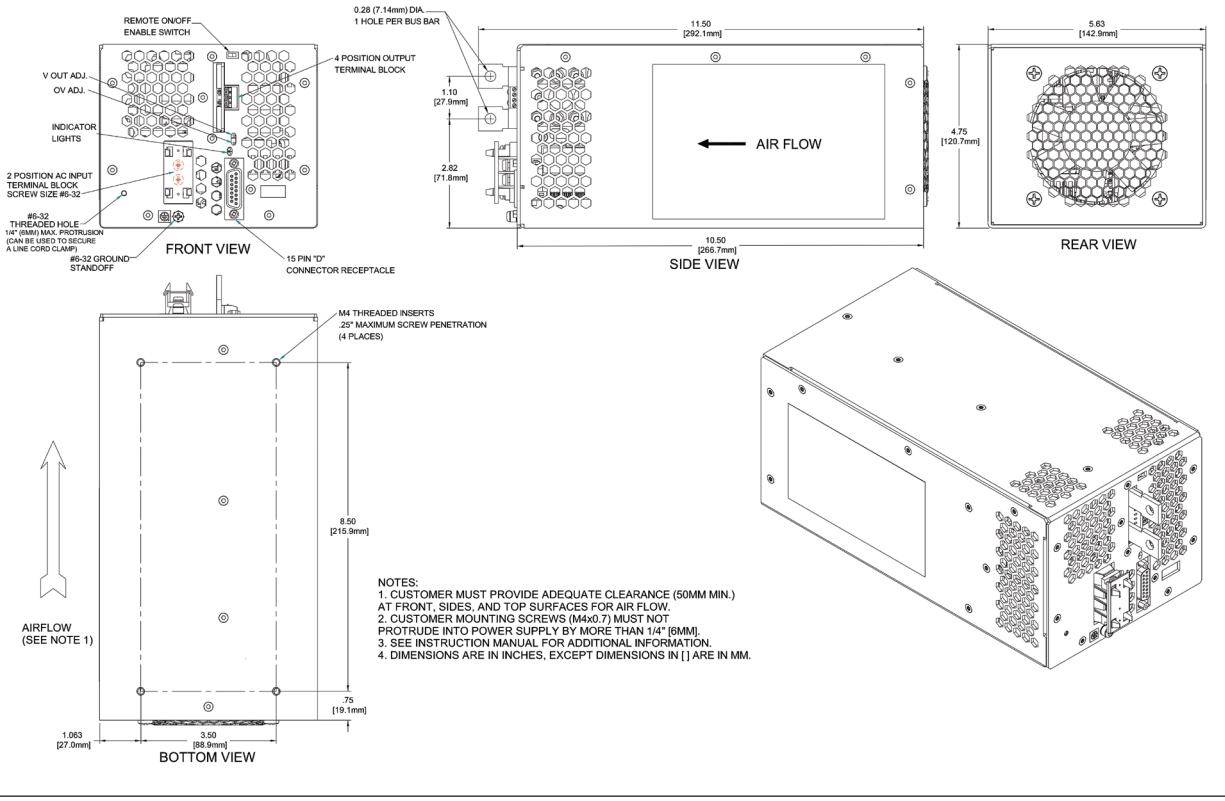


LZSA500 Outline Drawing



NOTES:
1. CUSTOMER MUST PROVIDE ADEQUATE CLEARANCE (50MM MIN.) AT FRONT, SIDES, AND TOP SURFACES FOR AIR FLOW.
2. CUSTOMER MOUNTING SCREWS (M4x0.7) MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4" [6MM].
3. SEE INSTRUCTION MANUAL FOR ADDITIONAL INFORMATION.
4. DIMENSIONS ARE IN INCHES, EXCEPT DIMENSIONS IN [ ] ARE IN MM.

LZSA1000-3 & LZSA1500-4 Outline Drawing



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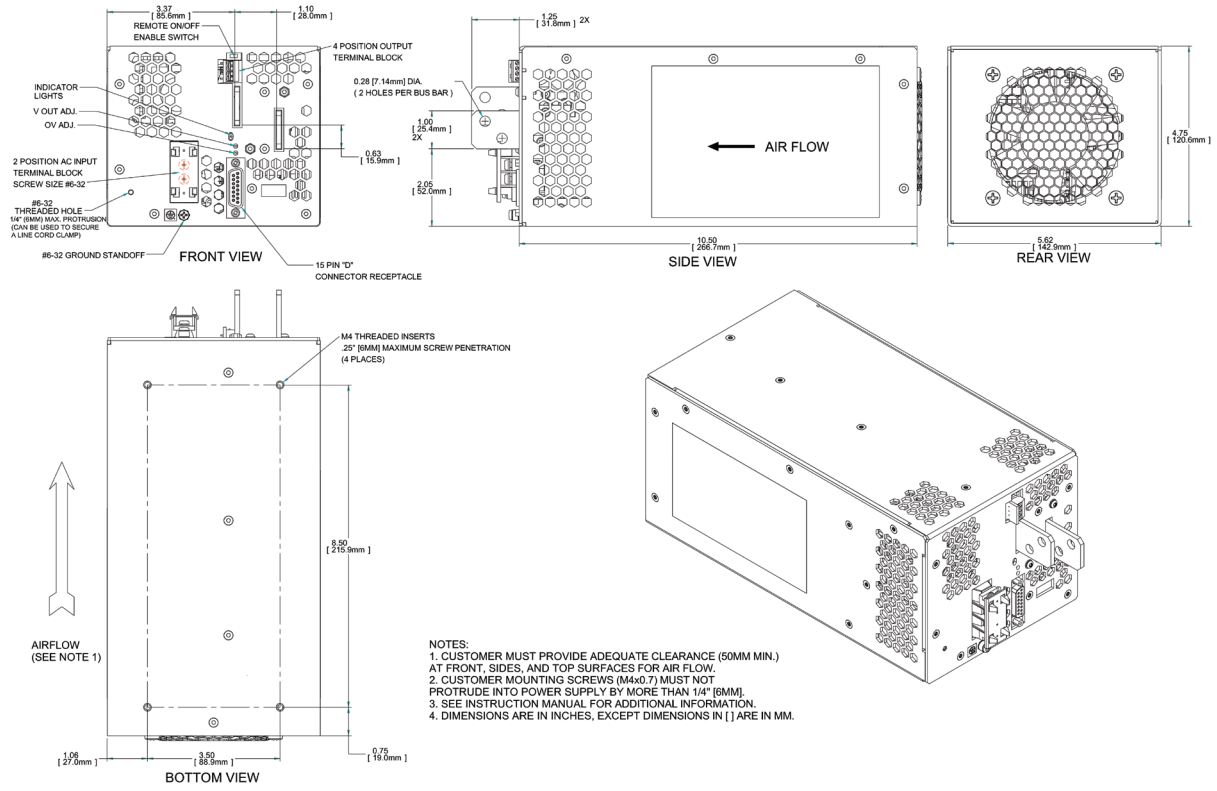
LZSA1000-2 & LZSA1500-3-001 Outline Drawing



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