

500-1500W Industrial Power supplies

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



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	8	15	18	
Inrush Current (110 / 220Vac)	A	25 / 45	30 / 40		
Leakage Current	uA	<500 at 265Vac, 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			

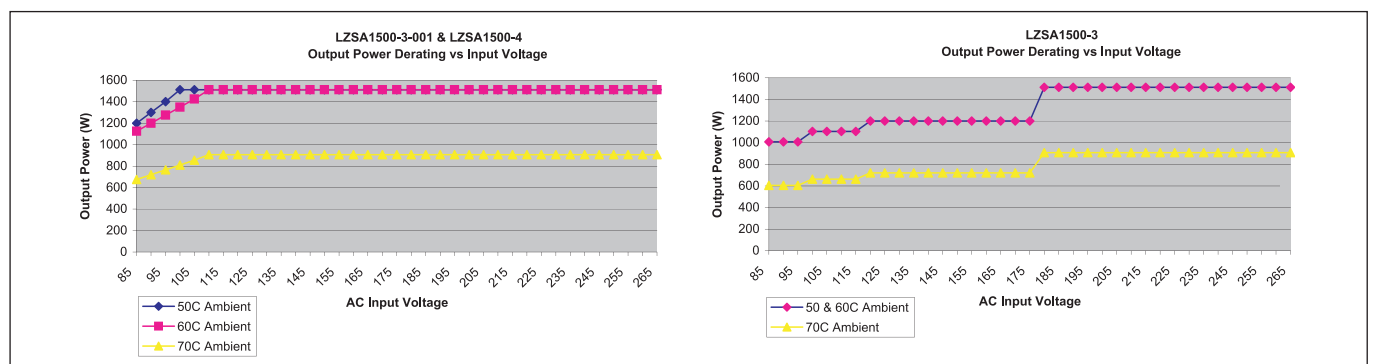
Immunity				
Test	Standard	Test Level	Criteria	Notes
ESD	IEC 61000-4-2	±8kV air discharge, ±6kV contact discharge	B	See test report on website
Radiated Susceptibility	IEC 61000-4-3	10V/m, 80 - 1000MHz (80% AM at 1kHz)	A	
Electrical Fast Transient Burst	IEC 61000-4-4	AC line pulses of ±2 kV; I/O line 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



FRONT VIEW

0.28 (7.14mm) DIA.
1 HOLE PER BUS BAR

REMOTE ON/OFF
ENABLE SWITCH

V OUT ADJ.
OV ADJ.

INDICATOR
LIGHTS

POSITION AC INPUT
TERMINAL BLOCK
Screw Size #6-32

SCREW FOR
CORD CLAMP

#6-32 GROUND
STANDOFF

4 POSITION OUTPUT
TERMINAL BLOCK

12 PIN
SIGNAL CONNECTOR
OPTION BOARD

15 PIN "D"
CONNECTOR RECEPTACLE

SIDE VIEW

11.25
[285.7mm]

1.10
[27.9mm]

2.82
[71.5mm]

4.75
[120.5mm]

10.25
[260.3mm]

REAR VIEW

4.25
[108.0mm]

BOTTOM VIEW

M4 THREADED INSERTS
.25" MAXIMUM SCREW PENETRATION
(4 PLACES)

6.50
[165.1mm]

3.00
[76.2mm]

6.25
[158.8mm]

AIRFLOW
(SEE NOTE 1)

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.

Technical drawing of the M4x0.7T terminal block, showing four views: Front View, Side View, Rear View, and Bottom View. The drawing includes dimensions in inches and millimeters, and callouts for various components and features.

Front View: Shows the terminal block with 12 pins. Callouts include: REMOTE ON/OFF ENABLE SWITCH, 1 HOLE PER BUS BAR, POSITION OUTPUT TERMINAL BLOCK, 1.10 [27.9mm], 2.62 [71.8mm], 12 PIN SIGNAL CONNECTOR OPTION BOARD, 15 PIN "D" CONNECTOR RECEPTACLE, 2 POSITION AC INPUT TERMINAL BLOCK SCREW SIZE #6-32, #6-32 SCREW FOR LINE CORD CLAMP, #6-32 GROUND STANDOFF, INDICATOR LIGHTS, V OUT ADJ., OV ADJ., and FRONT VIEW.

Side View: Shows the side profile of the terminal block. Dimensions include 11.50 [292.1mm], 10.50 [266.7mm], and 4.75 [120.7mm].

Rear View: Shows the rear of the terminal block. Dimensions include 5.63 [142.9mm] and 4.75 [120.7mm].

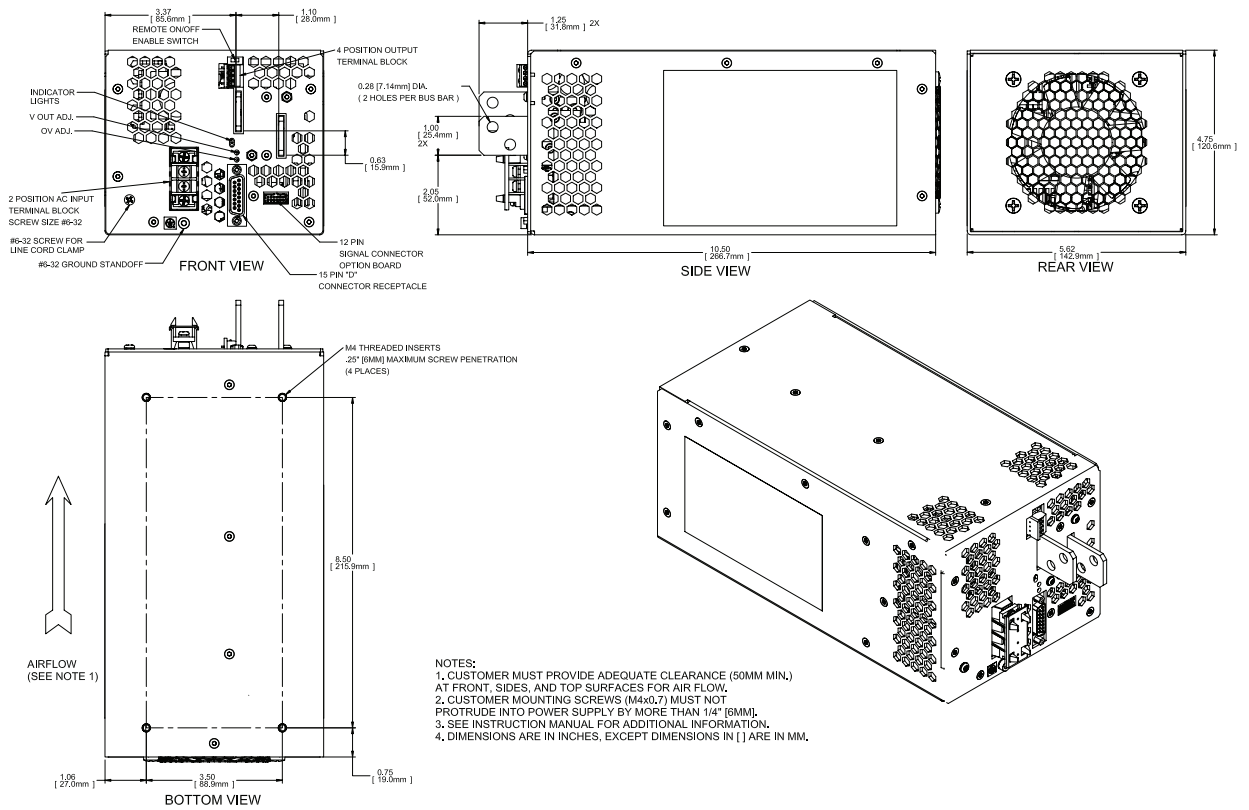
Bottom View: Shows the bottom of the terminal block. Dimensions include 1.063 [27.0mm], 3.50 [88.9mm], 8.50 [215.9mm], and .75 [19.1mm].

Notes:

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Airflow: An arrow indicates the direction of airflow, pointing upwards.

LZSA 1500 Outline Drawing



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