

File E194063
Project 05CA31887

Issued: October 17, 2005
Revised: August 02, 2009

REPORT

On

POWER CIRCUIT AND MOTOR-MOUNTED APPARATUS - POWER SUPPLY

***TDK-Lambda Americas Inc.**

San Diego, CA

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DESCRIPTION

PRODUCT COVERED:

USL, CNL - Power Circuit and Motor-Mounted Apparatus - Open Type Switching Power Supplies, Models LZS-A500-3, LZS-A1000-3, LZS-A1000-2, **LZS-A1000-2-009**, LZS-A1500-3, LZS-A1500-3-001 and LZS-A1500-4, may be followed by any 4 alpha-numeric characters.

GENERAL:

These are open type, switching power supply modules that are intended for use in pollution degree 2 environment. These were evaluated to UL 508, Standard for Industrial Control Equipment, Seventeenth Edition and are intended for use in Industrial Control Applications.

ELECTRICAL RATINGS:

| Model(s) | Input Rating | Maximum Output Rating (dc) | | | Surrounding Air Temp |
|------------------------|---|--------------------------------|--------------------|---------------------|----------------------|
| | | V | A | W | |
| LZS-A500-3 | 100-240 V ac, 7.3 A, 47-63 Hz Operating Range 85-265 V ac | 18.0-29.4 18.0-29.4 | 21 12.6 | 504 302 | 60°C 70°C |
| LZS-A1000-2 | 100-240 V ac, 15 A, 47-63 Hz Operating Range 85-265 V ac | 10.0-15.75 10.0-15.75 | 84 50.4 | 1008 605 | 60°C 70°C |
| LZS-A1000-2-009 | 100-240 V ac, 15 A, 47-63 Hz Operating Range 85-265 V ac | 9.2-15.75 9.2-15.75 | 84 50.4 | 1008 605 | 60°C 70°C |
| LZS-A1000-3 | 100-240 V ac, 15 A, 47-63 Hz Operating Range 85-265 V ac | 18.0-29.4 18.0-29.4 | 42 25.2 | 1008 605 | 60°C 70°C |
| * LZS-A1500-3 | 100-240 V ac, 15 A, 47-63 Hz Operating Range 85-265 V ac | 18.0-29.4 18.0-29.4 | 63 ** | 1512 907 | 60°C 70°C |
| * LZS-A1500-3-001 | 100-240 V ac, 17.6 A, 47-63 Hz Operating Range 85-265 V ac | 18.0-29.4 18.0-29.4 | 63 ** | 1512 907 | 60°C 70°C |
| * LZS-A1500-4 | 100-240 V ac, 18 A, 47-63 Hz Operating Range 85-265 V ac | 36.0-56.0 36.0-56.0 | 31.25 ** | 1512 907 | 60°C 70°C |

NOTE: ** See Output De-Rating Table

TABLE I - De-Rating Table for LZS-A1500-3:

| Input Voltage, (Vac) | Output Voltage, (Vdc) | Max. Output Current, (A) | Max. Output Power, (W) | Surrounding Air Temp, °C |
|----------------------|-----------------------|--------------------------|------------------------|--------------------------|
| 85 | 18 | 56 | 1008 | 60 |
| | 24 | 42 | 1008 | |
| | 29.4 | 34.3 | 1008 | |
| 85 | 18 | 33.6 | 605 | 70 |
| | 24 | 25.2 | 605 | |
| | 29.4 | 20.6 | 605 | |
| 100 | 18 | 61.4 | 1104 | 60 |
| | 24 | 46 | 1104 | |
| | 29.4 | 37.6 | 1004 | |
| 100 | 18 | 36.8 | 662 | 70 |
| | 24 | 27.6 | 662 | |
| | 29.4 | 22.5 | 662 | |
| 120 | 18 | 63 | 1134 | 60 |
| | 24 | 50 | 1200 | |
| | 29.4 | 40.9 | 1200 | |
| 120 | 18 | 40 | 720 | 70 |
| | 24 | 30 | 720 | |
| | 29.4 | 24.5 | 720 | |
| 180 to 265 | 18 | 63 | 1134 | 60 |
| | 24 | 63 | 1512 | |
| | 29.4 | 51.5 | 1512 | |
| 180 to 265 | 18 | 50.4 | 907 | 70 |
| | 24 | 37.8 | 907 | |
| | 29.4 | 30.9 | 907 | |

TABLE II- LZS-A1500-3-001 Output De-rating

| Input Voltage (V ac) | Output Voltage (V dc) | Max Output Current (A) @ 50°C max ambient | Max Output Power (W) @ 50°C max ambient | Max Output Current (A) @ 60°C max ambient | Max Output Power (W) @ 60°C max ambient | Max Output Current (A) @ 70°C max ambient | Max Output Power (A) @ 70°C max ambient |
|----------------------|-----------------------|---|---|---|---|---|---|
| 85 | 18 | 63 | 1134 | 62.5 | 1125 | 37.5 | 675 |
| | 24 | 50 | 1200 | 46.9 | 1125 | 28.2 | 675 |
| | 29.4 | 40.8 | 1200 | 38.3 | 1125 | 23.0 | 675 |
| 90 | 18 | 63 | 1134 | 63 | 1134 | 40 | 720 |
| | 24 | 54.2 | 1300 | 50 | 1200 | 30 | 720 |
| | 29.4 | 44.2 | 1300 | 40.8 | 1200 | 24.5 | 720 |
| 95 | 18 | 63 | 1134 | 63 | 1134 | 42.5 | 765 |
| | 24 | 58.4 | 1400 | 53.1 | 1275 | 31.9 | 765 |
| | 29.4 | 47.6 | 1400 | 43.4 | 1275 | 26.1 | 765 |
| 100 | 18 | 63 | 1134 | 63 | 1134 | 45 | 810 |
| | 24 | 63 | 1512 | 56.3 | 1350 | 33.8 | 810 |
| | 29.4 | 51.4 | 1512 | 46.0 | 1350 | 27.6 | 810 |
| 105 | 18 | 63 | 1134 | 63 | 1134 | 47.5 | 855 |
| | 24 | 63 | 1512 | 59.4 | 1425 | 35.7 | 855 |
| | 29.4 | 51.4 | 1512 | 48.5 | 1425 | 29.1 | 855 |
| 110 - 265 | 18 | 63 | 1134 | 63 | 1134 | 50.4 | 907 |
| | 24 | 63 | 1512 | 63 | 1512 | 37.8 | 907 |
| | 29.4 | 51.42 | 1512 | 51.42 | 1512 | 30.9 | 907 |

TABLE III - LZS-A1500-4 Output De-rating

| Input Voltage (V ac) | Output Voltage (V dc) | Max Output Current (A) @ 50°C max ambient | Max Output Power (W) @ 50°C max ambient | Max Output Current (A) @ 60°C max ambient | Max Output Power (W) @ 60°C max ambient | Max Output Current (A) @ 70°C max ambient | Max Output Power (A) @ 70°C max ambient |
|----------------------|-----------------------|---|---|---|---|---|---|
| 85 | 36 | 31.5 | 1134 | 31.25 | 1125 | 18.75 | 675 |
| | 48 | 25 | 1200 | 23.45 | 1125 | 14.1 | 675 |
| | 56 | 21.45 | 1200 | 20.1 | 1125 | 12.05 | 675 |
| 90 | 36 | 31.5 | 1134 | 31.5 | 1134 | 20 | 720 |
| | 48 | 27.1 | 1300 | 25 | 1200 | 15 | 720 |
| | 56 | 23.25 | 1300 | 21.45 | 1200 | 12.9 | 720 |
| 95 | 36 | 31.5 | 1134 | 31.5 | 1134 | 21.25 | 765 |
| | 48 | 29.2 | 1400 | 26.6 | 1275 | 15.95 | 765 |
| | 56 | 25 | 1400 | 22.8 | 1275 | 13.7 | 765 |
| 100 | 36 | 31.5 | 1134 | 31.5 | 1134 | 22.5 | 810 |
| | 48 | 31.5 | 1512 | 28.15 | 1350 | 16.9 | 810 |
| | 56 | 27 | 1512 | 24.15 | 1350 | 14.5 | 810 |
| 105 | 36 | 31.5 | 1134 | 31.5 | 1134 | 23.75 | 855 |
| | 48 | 31.5 | 1512 | 29.7 | 1425 | 17.85 | 855 |
| | 56 | 27 | 1512 | 25.45 | 1425 | 15.3 | 855 |
| 110 - 265 | 36 | 31.5 | 1134 | 31.5 | 1134 | 25.2 | 907 |
| | 48 | 31.5 | 1512 | 31.5 | 1512 | 18.9 | 907 |
| | 56 | 27 | 1512 | 27 | 1512 | 16.2 | 907 |

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

Special Considerations - The following items are considerations that were used when evaluating this product.

USL: Indicates investigation to the U.S. Standard UL 508, 17th Edition.

*CNL: Indicates investigation to the Canadian National Standard(s) CSA C22.2 no. 107.1-01, **3rd** Edition.

Note: CNL = Canadian National Standards - Listed.

USL = United States Standards - Listed.

NOMENCLATURE BREAKDOWN:

The significance of the power supply's nomenclature is as follows:

| | |
|------------|------|
| LZS-A500-3 | XXXX |
| I | II |

I - Basic Series Designation

LZS-A500-3
LZS-A1000-2
LZS-A1000-2-009
LZS-A1000-3
LZS-A1500-3
LZS-A1500-3-001
LZS-A1500-4

II - Denoting cosmetic/packaging variations