

UL TEST REPORT AND PROCEDURE

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|------------------------------------|---|
| Standard: | UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements) |
| Certification Type: | Component Recognition |
| CCN: | QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment) |
| Complementary CCN: | N/A |
| Product: | POWER SUPPLY |
| Model: | <p>NGB250SXXKZZ</p> <p>Where XX represents the output voltage which may be any number from 12 to 48. ZZ can be any number between 00-99, blank or any letter from AA to ZZ, only for market purpose, not influence safety function.</p> |
| Rating: | <p>Input: 100-240 Vac, 50-60 Hz, 3.0A</p> <p>Output: Model NGB250S12K For convection: 12Vdc/11.25A For 400LFM: 12Vdc/19.1A</p> <p>Model NGB250S15K For convection: 15Vdc/9.34A For 400LFM: 15Vdc/15.3A</p> <p>Model NGB250S24K For convection: 24Vdc/6.67A For 400LFM: 24Vdc/10.4A</p> <p>Model NGB250S48K For convection: 48Vdc/3.65A For 400LFM: 48Vdc/5.2A</p> |
| Applicant Name and Address: | <p>SL POWER ELECTRONICS CORP BLDG A 6050 KING DR VENTURA CA 93003 UNITED STATES</p> |

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Xing Liu/ Jie Qian / Handler

Reviewed By: Marshal Zhang / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

POWER SUPPLY utilizing a transformer for reinforced isolation between input and output, intended for building in. A suitable input/output connector is provided for internal connection in the end use product.

Model Differences

Power supply NGB250SXXKZZ series are similar to each other, except for T1 and secondary circuitry, which are used to serve for different outputs

Test Item Particulars

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| Classification of use by | Ordinary person |
| Supply Connection | AC Mains |
| Supply % Tolerance | +10%/-10% |
| Supply Connection – Type | mating connector |
| Considered current rating of protective device as part of building or equipment installation | 20 A; building; |
| Equipment mobility | for building-in |
| Over voltage category (OVC) | OVC II |
| Class of equipment | Class I |
| Access location | N/A |
| Pollution degree (PD) | PD 2 |
| Manufacturer's specified maximum operating ambient (°C) | Max. 50 |
| IP protection class | IPX0 |
| Power Systems | TN |
| Altitude during operation (m) | 5000 m |
| Altitude of test laboratory (m) | 2000 m or less |
| Mass of equipment (kg) | 0.273 max |

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : Max. 50 degree C
- The product is intended for use on the following power systems : TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%/-10%
- The equipment disconnect device is considered to be : evaluated in end use product

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The following product-line tests are conducted for this product : Electric Strength, Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-Earthed Dead Metal: 296 Vrms, 484 Vpk, Primary-Secondary: 296 Vrms, 484 Vpk,
- The following output circuits are at ES1 energy levels : All output ports of all models
- The following output circuits are at PS3 energy levels : All output ports of all models
- The maximum investigated branch circuit rating is : 20 A
- The investigated Pollution Degree is : 2
- Proper bonding to the end-product main protective earthing termination is : Required
- An investigation of the protective bonding terminals has : not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral : N
- The following end-product enclosures are required : Mechanical, Electrical, Fire
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C) : T1(Class F)
- The equipment is suitable for direct connection to : AC mains supply
- The power supply was evaluated to be used at altitudes up to : "5,000 m"
- Clause 5.6.4 and shall be evaluated in end products.

- Different output loading based on convection, and 400LFM, see model difference for details.

- An instructional safeguard shall state in end use product that the fuse is in the neutral, and that the mains shall be disconnected to de-energize the phase conductors
- The G1 tap shall be evaluated in end use product.

Additional Information

N/A

Additional Standards

The product fulfills the requirements of: EN 62368-1:2014 + A11:2017

Markings and Instructions

| Clause Title | Marking or Instruction Details |
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| Equipment identification marking – Manufacturer identification | Listees or Recognized companys name, Trade Name, Trademark or File Number |

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| Equipment identification marking – model identification | Model Number |
| Equipment rating marking – ratings | "Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)" |
| Fuses – replaceable by ordinary or instructed person | (component ID:F1, F2), "T6.3A 250VAC" located on or adjacent to fuse or fuseholder or in service manual. |
| Special Instructions to UL Representative Inspect the transformer(s) listed in table "Electric Strength Test Special Constructions" per AA1.1- (C): When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in the table be conducted at the component manufacturer. | |