

File E161936
Project 4790749520

Issued: March 09, 2010
Revised April 12, 2023

REPORT

on

POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL
BUSINESS EQUIPMENT - COMPONENT
POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION
TECHNOLOGY EQUIPMENT - COMPONENT

NIPRON CO LTD
AMAGASAKI-SHI HYOGO-KEN 660-0095 JP

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UL TEST REPORT AND PROCEDURE

| | |
|------------------------------------|---|
| Standard: | UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements) |
| Certification Type: | Component Recognition |
| CCN: | QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment) |
| Complementary CCN: | QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment) |
| Product: | Switching Power Supply |
| Model: | NSP6F-220P-... where "." in model number maybe blank, any number 0-9 or any letter A-Z |
| Rating: | Input: 100-240 Vac, 2.2-0.92 A, 50/60 Hz Output: 3.3 Vdc, 10 A; 5 Vdc, 10 A; 12 Vdc, 10 A; -12 Vdc, 0.3 A; 5 VSB, 1.5 A |
| Applicant Name and Address: | NIPRON CO LTD 2-57 OHAMA-CHO AMAGASAKI-SHI HYOGO-KEN 660-0095 JAPAN |

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.

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

Prepared by: Yoshifusa Koyanagi

Reviewed by: Tadao Nakayama

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

The product covered by this Test Report is a Switching Power Supply provided with metal enclosure and a DC cooling fan.

The Switching Power Supply contains an additional charging/discharging circuit for Battery Pack for back-up power, which activates to discharge mode when the supply source is disconnected.

Model Differences

N/A

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : for building-in
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -15%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 2000m
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 1.25
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 60°C at 60% of rated output load; 40°C at 100% of rated load.
- The means of connection to the mains supply is: Appliance Inlet
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Appliance Inlet
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

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 Rapid Discharging Test was conducted on the optional Battery Pack. Results indicate chemical leaks. The optional Battery Pack shall be evaluated and subjected to the Rapid Discharge Test in the end-product.
- The optional Battery Pack is provided with an automotive type fuse, which may not be relied on for safety.

- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at non-hazardous energy levels: All outputs
- The power supply terminals and/or connectors are: Suitable for factory wiring only (Output)
- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Electrical (except for AC Inlet side) and Fire (except for AC Inlet side)
- The equipment is suitable for direct connection to: AC mains supply (Appliance Inlet)
- If the replaceable battery is located in an Operator Access Area, and it can be serviced by an Operator, the following statement shall be adjacent to the battery or provided in both the User and Service Instructions: "CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO INSTRUCTIONS"
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 467 Vrms, 899 Vpk
- The maximum investigated branch circuit rating is: 20 A
- X-Capacitors may have variation in capacitance up to 1.0 uF maximum (C1), 0.22 uF maximum (C2, C38). Therefore, consideration shall be given in controlling the capacitance value in end product application with respect to touch current issue.
- Y-Capacitors may have variation in capacitance up to 2200 pF maximum (C3, C4, C5, C39). Therefore, consideration shall be given in controlling the capacitance value in end product application with respect to touch current issue.
- This component has been evaluated in 'control of fire spread' method assuming appropriate fire enclosure is provided in end product. Unless the fire enclosure is made of non-combustible or V-0 material, the separation from the PIS shall be considered. (QQJQ2, QQJQ8)
- Regarding the suitability of AC Inlet side enclosure as fire enclosure, see Enclosure Id. 07-07 for details.

Additional Information

This Test Report was based on the above CB Test Certificate and Test Report and was submitted by the CB Scheme. The test results and clause verdicts of the above noted report were reviewed and found to comply with the applicable U.S. and Canadian (Bi-National) Standard for Safety for Information Technology Equipment - Safety - Part 1: General Requirements, UL 60950-1 Revised 2011-12-19 and CAN/CSA-C22.2 No. 60950-1-07 + A1:2011. As a result the clause verdicts and test results for this Test Report were noted as N/A and have been referred to the NEMKO AS, Gaustadalléen 30, Blindern, Oslo, Norway Test Report for details. All test data has been retained in UL's files.

Additional Standards

The product fulfills the requirements of: CSA C22.2 No. 60950-1-07 + A1:2011, UL 60950-1 2nd Ed. Revised 2011-12-19, UL 62368-1 3rd Edition, Revised October 22, 2021, CAN/CSA C22.2 No. 62368-1:19, 3rd Edition, Revised October 22, 2021

Markings and instructions

| Clause Title | Marking or Instruction Details |
|---|--|
| 1.7.1 Power rating - Ratings | Ratings (voltage, frequency/dc, current) |
| 1.7.1 Power rating - Company identification | Listee's or Recognized company's name, Trade Name, Trademark or File Number |
| 1.7.1 Power rating - Model | Model Number |
| 1.7.6 Fuses - Rating | Rated current and voltage and type located on or adjacent to fuse or fuseholder. |

Special Instructions to UL Representative

Inspect the Transformer(s) listed in BD1.1 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 BD1.1 be conducted at the Component Manufacturer.

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

| Model | Component | Removable Parts | Test probe location | V rms | V dc | Test Time, s |
|--|------------------|-----------------|---------------------|----------|------|--------------|
| NSP6F-220P-... where "." in model number maybe blank, any number 0-9 or any letter A-Z | Transformer (T1) | N/A | PRI to SEC | 300 0 | 4242 | 1 |

Earthing Continuity Test Exemptions - This test is not required for the following models:

NSP6F-220P-... where "." in model number maybe blank, any number 0-9 or any letter A-Z

Electric Strength Test Exemptions - This test is not required for the following models:

NSP6F-220P-... where "." in model number maybe blank, any number 0-9 or any letter A-Z

Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:

N/A

Sample and Test Specifics for Follow-Up Tests at UL

| Model | Component | Material | Test | Sample(s) | Test Specifics |
|-------|-----------|----------|------|-----------|----------------|
| N/A | -- | -- | -- | -- | -- |