

## UL TEST REPORT AND PROCEDURE

|                                    |   |
|------------------------------------|---|
| <b>Standard:</b>                   | UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)<br>CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)  |
| <b>Certification Type:</b>         | Component Recognition   |
| <b>CCN:</b>                        | QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)  |
| <b>Complementary CCN:</b>          | N/A   |
| <b>Product:</b>                    | Switching Power Supply  |
| <b>Model:</b>                      | GPSA-5000-48Px, GPSA-5000-96Px (where x may be maximum 20 characters, any alphanumeric character, slash, hyphen or blank, which denotes control number)   |
| <b>Rating:</b>                     | <p>Model GPSA-5000-48Px:<br/>Input: 200-240V~, 50/60Hz, 15.5-13A, 3phase<br/>Output: 48Vdc/100A, 12VSB/0.5A</p> <p>Model GPSA-5000-96Px:<br/>Input: 200-240V~, 50/60Hz, 18-15A, 3phase<br/>Output: 96Vdc/60A, 12VSB/0.5A</p> <p>or</p> <p>Input: 200-240V~, 50/60Hz, 15.9-13.4A, 3phase<br/>Output: 96Vdc/52A, 12VSB/0.5A</p> |
| <b>Applicant Name and Address:</b> | NIPRON CO LTD<br>2-57 OHAMA-CHO<br>AMAGASAKI-SHI<br>HYOGO-KEN 660-0095 JAPAN  |

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Report Reference # E161936-A6050-UL

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: Yoshifusa Koyanagi / Project  
Handler

Reviewed By: Tadao Nakayama / 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**

The product is a building-in type switching power supply.

**Model Differences**

Model GPSA-5000-96Px is basic model in this report.

Model GPSA-5000-48Px is identical to Model GPSA-5000-96Px except for Transformer (T101), PTC Thermistor (TH101), PWB Layout, some secondary components, and output rating.

Suffixes x denote control numbers which do not affect safety.

Model GPSA-5000-96Px has two different Input/Output rating.

**Test Item Particulars**

|  |  |
|--|--|
| Classification of use by   | Ordinary person<br>Children likely to be present |
| Supply Connection  | AC Mains   |
| Supply % Tolerance   | Other<br>+ 10 % / - 15 %                         |
| Supply Connection – Type   | Terminal Block (for building-in)                 |
| Considered current rating of protective device as part of building or equipment installation | 20 A;<br>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)                                      | See Enclosure Id. 07-01                          |
| IP protection class  | IPX0   |
| Power Systems  | TN<br>IT - 230 V L-L                             |
| Altitude during operation (m)  | 3000 m   |

|  |                                |
|--|--------------------------------|
| Altitude of test laboratory (m)  | approximately 10 - 20 m        |
| Mass of equipment (kg)   | approximately 8.34 kg          |
| <p><b>Engineering Conditions of Acceptability</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• The following product-line tests are conducted for this product : Electric Strength, Earthing Continuity</li> <li>• The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary – Earthed Dead Metal: 347 Vrms/864 Vpk, Primary-Secondary: 439 Vrms/1.10 Vpk</li> <li>• The following output circuits are at ES1 energy levels : 48V, 12VSB</li> <li>• The following output circuits are at ES2 energy levels : 96V</li> <li>• The following output circuits are at PS3 energy levels : All output (declared)</li> <li>• The maximum investigated branch circuit rating is : 20 A</li> <li>• The investigated Pollution Degree is : 2</li> <li>• Proper bonding to the end-product main protective earthing termination is : Required</li> <li>• An investigation of the protective bonding terminals has : been conducted</li> <li>• The following end-product enclosures are required : Electrical, Fire (except for Rear side)</li> <li>• 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) : T101 (Class B)</li> <li>• The power supply was evaluated to be used at altitudes up to : 3,000 m</li> <li>• The power supply terminals and/or connectors are: Suitable for factory wiring only</li> <li>• Peak current of Output is not evaluated in this report.</li> <li>• The Heating Test shall be evaluated in the end-product.</li> </ul> |                                |
| <p><b>Additional Information</b></p> <p>Regarding the Derating of temperature of Tma and Input Voltage, output condition, and sample position, see Enclosure Id: 07-01 for details.</p> <p>Unless otherwise stated, all tests were conducted with Model GPSA-5000-96Px as representative model and with star connection.</p> <p>Also, unless otherwise stated, all tests of Model GPSA-5000-96Px were conducted with PTC Thermistor (TH101) shorted.</p> <p>Copy of marking plate of represent models attached in the Copy of marking plate can be representative of other series of models because this copy of marking plate includes all required items and same items are described in the marking plate of other series models.</p> <p>The National Differences for Australia/New Zealand based on AS/NZS 62368.1:2018 were evaluated and the results are attached to this Test Report. See Enclosure Id. 07-19 (National Differences of Australia/New Zealand to IEC 62368-1:2014). (For information only since the ND/GD TRF latest revision does not match the latest revision of IEC Standard TRF used for evaluation)</p>  |                                |
| <p><b>Additional Standards</b></p> <p>The product fulfills the requirements of: EN 62368-1:2014 + A11:2017, UL 62368-1 2nd Edition, Issued December 1, 2014, CSA CAN/CSA-C22.2 No. 62368-1 2nd Edition, Issued December 1, 2014</p>  |                                |
| <p><b>Markings and Instructions</b></p>  |                                |
| Clause Title   | Marking or Instruction Details |

|   |   |
|---|---|
| Equipment identification marking – Manufacturer identification  | Listee's or Recognized companys name, Trade Name, Trademark or File Number                                      |
| 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)" |
| <b>Special Instructions to UL Representative</b><br>For transformer test - 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 Production-Line Testing Requirements be conducted at the component manufacturer. |   |

| <b>BD1.0</b>   |  |                 |                      |            |           |              |
|--|--|-----------------|----------------------|------------|-----------|--------------|
| <b>TABLE: Production-Line Testing Requirements</b>   |  |                 |                      |            |           |              |
| <b>BD1.1</b>   |  |                 |                      |            |           |              |
| <b>Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.</b>   |  |                 |                      |            |           |              |
| Model  | Component  | Removable parts | Test probe location  | Test V rms | Test V dc | Test Time, s |
| GPSA-5000-48Px, GPSA-5000-96Px   | Transformer (T1), Type MT1699 X                          | --              | Primary to Secondary | 3000       | 4000      | 1            |
| GPSA-5000-96Px   | Transformer (T101), Type MT1698 X                        | --              | Primary to Secondary | 3000       | 4000      | 1            |
| GPSA-5000-48Px   | Transformer (T101), Type MT1707 X                        | --              | Primary to Secondary | 3000       | 4000      | 1            |
| GPSA-5000-48Px, GPSA-5000-96Px   | Transformer (T105), Type CT1052 X                        | --              | Primary to Secondary | 3000       | 4000      | 1            |
| GPSA-5000-48Px, GPSA-5000-96Px   | Transformers (DT101, DT102, DT103, DT104), Type DT1067 X | --              | Primary to Secondary | 3000       | 4000      | 1            |
| <b>BD1.2</b>   |  |                 |                      |            |           |              |
| <b>Earthing Continuity Test Exemptions – This test is not required for the following models:</b>   |  |                 |                      |            |           |              |
| GPSA-5000-48Px, GPSA-5000-96Px   |  |                 |                      |            |           |              |
| <b>BD1.3</b>   |  |                 |                      |            |           |              |
| <b>Electric Strength Test Exemptions – This test is not required for the following models:</b>   |  |                 |                      |            |           |              |
| GPSA-5000-48Px, GPSA-5000-96Px   |  |                 |                      |            |           |              |
| <b>BD1.4</b>   |  |                 |                      |            |           |              |
| <b>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.</b> |  |                 |                      |            |           |              |
| N/A  |  |                 |                      |            |           |              |

| <b>BE1.0</b>   |           |          |      |            |                |
|--|-----------|----------|------|------------|----------------|
| <b>Sample and Test Specifics for Follow-Up Tests at UL</b> |           |          |      |            |                |
| Model  | Component | Material | Test | Sample (s) | Test Specifics |
| N/A  | --        | --       | --   | --         | --             |