UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2019-05-09 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (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:	N/A
Product:	Power Supply
Model:	pNSP2UF-1000Px, pNSP2U-1000Px, and pNSP2U-1000Px(12V), pNSP2U-800Px (where suffix "x" maybe replaced hyphen with some alphanumeric characters, or blank)
Rating:	<pNSP2UF-1000Px, pNSP2U-1000Px> Input: 100-240 Vac, 9.6-4.0 A, 50/60 Hz Continuous Rated Output: +3.3 Vdc, 20 A; +5 Vdc, 20 A; +12 Vdc, 63.3 A; -12 Vdc, 0.5 A; +5 Vsb, 2 A Total maximum 775.6 W Peak Output: +3.3 Vdc, 21 A; +5 Vdc, 21 A; +12 Vdc, 66 A; -12 Vdc, 0.5 A; +5 Vsb, 2 A Total maximum 982.3 W <pNSP2U-1000Px(12V)> Input: 100-240 Vac, 10-4.2 A, 50/60 Hz Continuous Rated Output: +12 Vdc, 66 A; +5 Vsb, 2 A Total maximum 802 W Peak Output: +12 Vdc, 83 A; +5 Vsb, 2 A Total maximum 1006 W <pNSP2U-800Px>

	Input: 100-240 Vac, 7.3-3.0 A, 50/60 Hz Continuous Rated Output: +3.3 Vdc, 20 A; +5 Vdc, 20 A; +12 Vdc, 47 A; -12 Vdc, 0.5 A; +5 Vsb, 2 A Total maximum 580 W Peak Output: +3.3 Vdc, 21 A; +5 Vdc, 21 A; +12 Vdc, 66 A; -12 Vdc, 0.5 A; +5 Vsb, 2 A Total maximum 800 W
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.

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 equipment is component type switching power supply for building into an end-product.

This equipment consists of 3 units as below.

- AC input units (2 units for redundant. And both units have no difference.)
- DC output unit (1 unit)

The each or all of 2 AC input units are detachable from DC output unit.

Model Differences

Model pNSP2UF-1000Px is base model in this Test Report.

Model pNSP2U-1000Px is similar to Model pNSP2UF-1000Px except for AC input construction, air flow direction of all fans and model identification. Appliance Inlet is used for AC input.

Model pNSP2U-1000Px(12V) is similar to Model pNSP2U-1000Px except for secondary output circuit and model identification. Secondary output circuits of +3.3 Vdc, +5 Vdc and -12 Vdc were deleted.

Model pNSP2U-800Px is similar to model pNSP2U-1000Px except for Input and output rating, derating curve of ambient temperature, Fan of AC Unit and DC Unit, addition of heat dissipation sheet.

(where suffix "x" maybe replaced hyphen with some alphanumeric characters, or blank, which denotes control number)

Test Item Particulars

Equipment mobility	for building-in (component type)
Connection to the mains	No direct connection or pluggable A
Operating condition	continuous
Access location	N/A
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)	20
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	up to 2000
Altitude of test laboratory (m)	approximately 10 to 20
Mass of equipment (kg)	approximately. 5.2 (for pNSP2UF-1000Px) / 4.7 (for pNSP2U-1000Px) / 4.4 (for pNSP2U-1000Px(12V)) / 4.6 (for pNSP2U-800Px)

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 40°C for 100% Load / 60°C for 60% Load (for pNSP2UF-1000Px, pNSP2U-1000Px, and pNSP2U-1000Px(12V)), 40°C for 100% Load / 50°C for 80% Load (for pNSP2U-800Px)
- The product is intended for use on the following power systems : TN
- LEDs provided in the product are considered low power devices : Yes

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 Production-Line tests are conducted for this product : Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-SELV: 416 Vrms, 760 Vpk, Primary-Earthed Dead Metal: 416 Vrms, 760 Vpk
- The following secondary output circuits are SELV : All outputs
- The following secondary output circuits are at hazardous energy levels : +12V output
- The following secondary output circuits are at non-hazardous energy levels : +3.3V output, +5V output, -12V output, +5Vsb output
- The power supply terminals and/or connectors are : Suitable for factory wiring only
- 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 for DC Output Unit and AC Input Unit.
- 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 : CN803, 1, 2 pins and CN804, 1, 2 pins of DC Output Unit of model pNSP2UF-1000Px.
- 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 B)
- The following end-product enclosures are required : Fire, Electrical
- The maximum normal load is as follows: The peak output is limited within continuous 5 seconds. And after peak output, continuous rated output is loaded. In the case of the use repeatedly, the time ratio is assumed to be 10% or less.
- The following tests shall be evaluated in the end-product. 5.1 - Touch Current Test

Additional Information

Maximum Normal Load (Test Conditions): See Enclosures Id 07-01 for details.

Additional Standards

The product fulfills the requirements of:

Markings and Instructions

Clause Title	Marking or Instruction Details
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.
1.7.8.3 Symbols - On/Off switch	All other controls to be marked with

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.

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	**Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.**					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
All models	Transformer (T1)	-	Primary to Secondary	3000 Vac or	4243 Vdc	1
All models	Transformer (T3)	-	Primary to Secondary	3000 Vac or	4243 Vdc	1
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	All models					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	N/A					
BD1.4	**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					

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