

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (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)
Product:	Power Supply for building-in, switch mode type
Model:	OZP-120-12, OZP-120-12/15, and OZP-120-24 (may be followed by suffix "-xynnz"; x is "J", "T" or "E", y is "0", "B" or blank, n is any number 0 to 9, any letter A to Z or blank and z is "-K" or "-C" or blank)
Rating:	Input: 100-240 Vac, 1.8 A, 50-60 Hz Output: OZP-120-12: 12 Vdc, 10 A (15 A peak) OZP-120-12/15: 12 Vdc, 10 A (15 A peak) / 15 Vdc, 8 A (12 A peak) OZP-120-24: 24 Vdc, 5 A (9 A peak)
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

Reviewed by: Satoru Ohnishi

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

Building-in type switching power supplies.

Model Differences

Each models are identical, except for output rating and secondary components.

Model Nomenclature:

OZP-120 -24 -J B 0 0 -C
I II III IV V VI VII

I. Model Designation

"OZP-120"

II. Rated Output Voltage

"12": 12 Vdc

"12/15": 12 / 15 Vdc

"24": 24 Vdc

III. Input/Output Terminal

"J": Connector

"T": Terminal Block

"E": Terminal Block (different type of "T")

IV. Back-Up Function (with Battery Unit)

"0": Not Provided

"B": Provided

V and VI. Revision No.

Any number 0 to 9, any letter A to Z or blank, which does not affected safety.

VII. Chassis and Cover

Blank: Not Provided

"C": Chassis Provided

"K": Chassis and Cover Provided

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : N/A
- Operating condition : continuous
- Access location : N/A
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- 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 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : less than 2000 m
- Altitude of test laboratory (m) : approximately 10 m
- Mass of equipment (kg) : approximately 0.4
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: Maximum 70°C. See Enclosed Id. 7-01 (Output Derating) and Id. 7-12 Output Derating (Model OZP-120-12 with Battery Unit Model BS24x-H12/2.0L-y (x=A to Z, y=R or T)) for details.
- The product is intended for use on the following power systems: TN

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 end-product Electric Strength Test is to be based upon a maximum working voltage of: PRI - Ground: 427 Vrms, 908 Vpk, PRI - SEC: 454 Vrms, 908 Vpk
- The following secondary output circuits are SELV: All outputs.
- The following secondary output circuits are at hazardous energy levels: All outputs.
- 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
- 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): Transformer (T1) (Class B)
- The following end-product enclosures are required: Fire, Electrical
- The maximum continuous power supply output (Watts) relied on forced air cooling from: 50 W for Models OZP-120-12, OZP-120-12/15 and 151.2 W for Model OZP-120-24 at 1.5 m/second applied to the power supply.
- RTI of Bobbin Material of Inductors (L1, L2) are minimum 120°C. RTI of Bobbin Material and Insulation Tape of Inductor (L3) is minimum 130°C.
- Marking "FG" located near the Input Terminal Block (CN1) or Input Connector (CN1), however, Limited Short-Circuit Test per CSA C22.2 No.04 has not been conducted. Therefore, protective earthing conductor shall not be connected directly to the Input Terminal Block (CN1) or Input

Connector (CN1).

Additional Information

Tests were conducted with following output conditions.

OZP-120-12/15:

12 Vdc (10.8 - 13.2 Vdc), 10 A (Maximum 120 W) without Forced Air.

15 Vdc (14.25 - 16.5 Vdc), 8 A (Maximum 120 W) without Forced Air.

12 Vdc (10.8 - 13.2 Vdc), 12.5 A (Maximum 150 W) with Forced Air.

15 Vdc (14.25 - 16.5 Vdc), 10 A (Maximum 150 W) with Forced Air.

12 Vdc (10.8 - 13.2 Vdc), Peak Current 15 A (Maximum 180 W), Maximum 10 Seconds, Duty 35 % and Effective Value of Current Maximum 10 A without Forced Air / Maximum 12.5 A with Forced Air.

15 Vdc (14.25 - 16.5 Vdc), Peak Current 12 A (Maximum 180 W), Maximum 10 Seconds, Duty 35 % and Effective Value of Current Maximum 8 A without Forced Air / Maximum 10 A with Forced Air.

OZP-120-24:

24 Vdc (22.8 - 28.8 Vdc), 5 A (Maximum 120 W) without Forced Air.

24 Vdc (22.8 - 28.8 Vdc), 6.3 A (Maximum 151.2 W) with Forced Air.

24 Vdc (22.8 - 28.8 Vdc), Peak Current 9 A (Maximum 216 W), maximum 10 Seconds, Duty 30 % and Effective Value of Current Maximum 5 A without Forced Air / Maximum 6.3 A with Forced Air.

OZP-120-24 may be provided with Back-Up Function with Battery Unit, if AC Supply stops, output is operated with Battery Unit. Battery Unit charged by output of Model OZP-120-24; therefore, if use with Battery Unit, Maximum Output Power is reduced minus 20 W from above Maximum Power.

OZP-120-12 may be provided with Back-Up Function with Battery Unit, if AC Supply stops, output is operated with Battery Unit. Battery Unit charged by output of Model OZP-120-12; therefore, if use with Battery Unit, Maximum Output Power is reduced minus 10 W from above Maximum Power.

Markings and instructions

Clause Title	Marking or Instruction Details
1.7.15 Replaceable Batteries	Following marking on Battery Unit. "CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the local regulation." or equivalent.
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

Special Instructions to UL Representative

Inspect Transformer (T1) 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
OZP-120-12, OZP-120-12/15 and OZP-120-24	Transformer (T1)	N/A	Primary to Secondary	3000	4242	1

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

OZP-120-12, OZP-120-12/15 and OZP-120-24

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

OZP-120-12, OZP-120-12/15 and OZP-120-24

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	--	--	--	--	--