

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
Model:	OZM-015-0312N12, OZM-015-0315N15, OZM-015-0512N12 and OZM-015-0515N15. (followed by suffix "J0x-y"; (x is alphanumeric or number, y is "C" or "K" or blank))
Rating:	100-240 Vac, 0.4 A, 50-60 Hz
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.

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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 report is a Switching Power Supply for use in IT.

Output ratings are as follows.

Model OZM-015-0312N12

Output: 13.8W Max, +3.3V/2.0A (Peak: 3.0A) +12V/0.4A (Peak: 1.0A), -12V/0.2A (Peak: 0.3A)

Model OZM-015-0315N15

Output: 14.1W Max, +3.3V/2.0A (Peak: 3.0A) +15V/0.3A (Peak: 0.8A), -15V/0.2A (Peak: 0.3A)

Model OZM-015-0512N12

Output: 17.2W Max, +5V/2.0A (Peak: 3.0A) +12V/0.4A (Peak: 1.0A), -12V/0.2A (Peak: 0.3A)

Model OZM-015-0515N15

Output: 17.5W Max, +5V/2.0A (Peak: 3.0A) +15V/0.3A (Peak: 0.8A), -15V/0.2A (Peak: 0.3A)

Model Differences

Model OZM-015-0515N15 is described as base model in this report.

Model OZM-015-0515N15 is identical to Models OZM-015-0312N12, OZM-015-0315N15 and OZM-015-0512N12 except for model designation, output rating, Transformer (T1), and secondary components.

Followed by suffix "J0x-y"; (x is alphanumeric or number, y is "C" or "K" or blank)

Model designations: (Representative example)

[OZM-015-0515N15-J0x-y]

1) OZM: Series name

2) 015: Output power

3) 0312N12: Output voltage (03: +3.3Vdc, 12N12: ±12Vdc)

4) J: Input/Output Connection; "J": Nylon connector

5) 0: Backup function ("0": Not provided.)

6) x: Optional specification ("0": Not provided. This suffix is changed by option, that not related to safety.)

7) y: Chassis and Cover; "-C": Metal Chassis was provided., "-K": Metal Chassis and Metal Cover were provided., "Blank": Metal Chassis and Metal Cover were not provided.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : N/A

- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -15% (for manufacturer request)
- 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 to 20 m
- Mass of equipment (kg) : Approximately 0.12 kg (without Metal cover and Metal Chassis), Approximately 0.22 kg (with Metal chassis), Approximately 0.26 kg (with Metal chassis and Metal cover)
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 70°C (with Forced Air and without Metal Cover), 65°C (with Forced Air and with Metal Cover), 60°C (without Forced Air and without Metal Cover), 55°C (without Forced Air and with Metal Cover)
- The product is intended for use on the following power systems: TN
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: +12V, -12V outputs of Models OZM-015-0312N12, OZM-015-0512N12, +15V, -15V outputs of Models OZM-015-0315N15, OZM-015-0515N15.

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-Earthed Dead Metal: 265 Vrms, 544 Vpk, Primary-SELV: 287 Vrms, 568 Vpk
- The following secondary output circuits are SELV: All outputs of all models.
- The following secondary output circuits are at non-hazardous energy levels: All outputs of all models.
- The following output terminals were referenced to earth during performance testing: Input Connector (CN1)_(N), Input Connector (CN1)_(FG), Output Connector (CN2)_(G1), (G2).
- 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): T1 (Class B)
- The following end-product enclosures are required: Electrical, Fire

Additional Information

Test Condition:

No.	Tma	Forced Air	Metal Cover	Mount position	Rate of output load
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E161936-A74-UL

1	55°C	Without	With	A,B,C,D,E,F	100%
2	60°C	Without	Without	A,B,C,D,E,F	100%
3	65°C	With	With	A,B,C,D,E,F	100%
4	70°C	With	Without	A,B,C,D,E,F	100%

See Enclosure #7-08 for Mount position and FAN location.

Markings and instructions

Clause Title	Marking or Instruction Details
2.7.6 Warning to service persons	CAUTION: DOUBLE-POLE / NEUTRAL FUSING.
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
All models	Transformer (T1)	N/A	Primary to Secondary	300 0	4243	1

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

All models

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

N/A

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	--	--	--	--	--