

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-030-12N12, OZM-030-15N15 (followed by suffix "J0x-y"; (x is alphanumeric or number, y is "C" or "K" or blank))
Rating:	(Models OZM-030-12N12, OZM-030-15N15) Input: AC100-240V, 0.8A, 50-60Hz (Model OZM-030-12N12) Output: 36.0W Max, +12V/2.4A (Peak: 3.0A), -12V/0.6A (Peak: 1.0A) (Model OZM-030-15N15) Output: 36.0W Max, +15V/1.8A (Peak: 2.4A), -15V/0.6A (Peak: 1.0A)
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.

Model Differences

Model OZM-030-15N15 is described as base model in this report.

Model OZM-030-12N12 is identical to Model OZM-030-15N15 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-030-15N15-J0x-y]

1) OZM: Series name

2) 030: Output power

3) 15N15: Output voltage (15N15: $\pm 15\text{Vdc}$, 12N12: $\pm 12\text{Vdc}$)

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 : operator accessible (for building-in)
- 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) : 20A
- 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 0.16 kg (without Metal cover and Metal Chassis), Approximately 0.28 kg (without Metal cover), Approximately 0.33 kg (with 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), 45°C to 65°C (without Forced Air. Tma is considered by the derating curves, mount positions and Metal Cover.) (See Enclosure Id: 7-05 and Additional Information for details.)
- The product is intended for use on the following power systems: TN
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): +12V, -12V outputs of Model OZM-030-12N12, +15V, -15V outputs of Model OZM-030-15N15
- The following were investigated as part of the protective earthing/bonding: Printed wiring board trace (Earth side of C3, C4, C5), Metal Chassis

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: 274 Vrms, 576 Vpk, Primary-SELV: 274 Vrms, 576 Vpk
- The following secondary output circuits are SELV: +12V, -12V outputs of Model OZM-030-12N12, +15V, -15V outputs of Model OZM-030-15N15
- The following secondary output circuits are at non-hazardous energy levels: +12V, -12V outputs of Model OZM-030-12N12, +15V, -15V outputs of Model OZM-030-15N15
- The following secondary output circuits are supplied by a Limited Power Source: +12V, -12V outputs of Model OZM-030-12N12, +15V, -15V outputs of Model OZM-030-15N15
- The following output terminals were referenced to earth during performance testing: Connector (CN1) 5pin
- 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
- An investigation of the protective bonding terminals has: Not been conducted
- 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	FAN Air	Cover	Rate of output load - Mount position					
				A	B	C	D	E	F
1	45°C	Without	With	100%	100%	100%	100%	100%	100%
2	50°C	Without	Without	100%	100%	100%	100%	100%	100%

3	60°C	Without	With	70%	70%	70%	70%	70%	--
4	65°C	Without	Without	70%	70%	70%	70%	70%	--
5	65°C	With	With	100%	100%	100%	100%	100%	100%
6	70°C	With	Without	100%	100%	100%	100%	100%	100%

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.
2.7.6 Warning to service personnel	"CAUTION: Double pole/neutral fusing"

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
OZM-030-12N12-J0x-y, OZM-030-15N15-J0x-y	Transformer (T1)	N/A	Primary to Secondary	minimum 3000	--	minimum 1 s

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

OZM-030-12N12-J0x-y, OZM-030-15N15-J0x-y

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	--	--	--	--	--