

UL TEST REPORT AND PROCEDURE

Standard:	ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10)(Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance)
Certification Type:	Component Recognition
CCN:	QQHM2, QQHM8 (Power Supplies, Medical and Dental)
Product:	Power Supply
Model:	mOZP-200-3R3-xyEnz, mOZP-200-5-xyEnz, mOZP-200-12-xyEnz, mOZP-200-15-xyEnz, mOZP-200-24-xyEnz, mOZP-200-36-xyEnz and mOZP-200-48-xyEnz (x is "J" or "T", y is "0" or "S", n is any number "0" to "9" or any letter "A" to "Z" except for "E" or blank and z is "-K" or "-C" or blank)
Rating:	<p>PS-10WP-5VSB* (*: 'A' to 'Z' or '0' to '9' or blank)</p> <p>mOZP-200-3R3-xyEnz Input: 100-240 Vac, 1.9 A, 50-60 Hz Output: 3.3 Vdc, 40 A (60 A peak)</p> <p>mOZP-200-5-xyEnz Input: 100-240 Vac, 2.8 A, 50-60 Hz Output: 5 Vdc, 40 A (60 A peak)</p> <p>mOZP-200-12-xyEnz Input: 100-240 Vac, 2.8 A, 50-60 Hz Output: 12 Vdc, 16.7 A (33.4 A peak)</p> <p>mOZP-200-15-xyEnz Input: 100-240 Vac, 2.8 A, 50-60 Hz Output: 15 Vdc, 13.4 A (26.7 A peak)</p> <p>mOZP-200-24-xyEnz Input: 100-240 Vac, 2.8 A, 50-60 Hz Output: 24 Vdc, 8.4 A (16.7 A peak)</p> <p>mOZP-200-36-xyEnz Input: 100-240 Vac, 2.8 A, 50-60 Hz Output: 36 Vdc, 5.6 A (11.2 A peak)</p> <p>mOZP-200-48-xyEnz Input: 100-240 Vac, 2.8 A, 50-60 Hz Output: 48 Vdc, 4.2 A (8.4 A peak)</p> <p>PS-10WP-5VSB* Input: DC134-386V, 0.08 A Output: 5 Vdc, 1.5 A (2.0 A peak)</p>
Applicant Name and Address:	NIPRON CO LTD

Issue Date: 2014-01-11
2015-09-16

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Report Reference #

E358786-A5-UL

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: Jun Orito

Reviewed by: Tsutomu Abe

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

mOZP-200 series are building-in type switching power supplies which are intended for used with Medical Electrical Equipment in hospital environment.

PS-10WP-5VSB* (optional) are connected to switching power supply, Model mOZP-200 series and this unit used for additional secondary output circuits of 5Vdc on Model mOZP-200 series.

Model Differences

Model mOZP-200-3R3-xyEnz is described as basic model in this report.

Model mOZP-200-5-xyEnz is identical to Model mOZP-200-3R3-xyEnz except for model designation, output rating and secondary components.

Model mOZP-200-12-xyEnz is identical to Model mOZP-200-3R3-xyEnz except for model designation, output rating, Transformer (T1) and secondary components.

Model mOZP-200-15-xyEnz is identical to Model mOZP-200-12-xyEnz except for model designation, output rating and secondary components.

Model mOZP-200-24-xyEnz is identical to Model mOZP-200-3R3-xyEnz except for model designation, output rating, Inductor (L3), Transformer (T1), PWB, and secondary components.

Model mOZP-200-36 is identical to Model mOZP-200-24-xyEnz except for model designation, output rating, Transformer (T1) and secondary components.

Model mOZP-200-48xyEnz is identical to Model mOZP-200-24xyEnz except for model designation, output rating, Transformer (T1) and secondary components.

Models Nomenclature: Representative case.

Model mOZP-200-3R3-xyEnz: (All models were "3165P1x" or "3166P1x" Board name provided, print screen to PWB.)

-200-: 200 W

-3R3-: Output Voltage 3.3Vdc

-x: Input / Output Connection; "J": Nylon Connector, "T": Terminal Block

-y: Output Current Balance Function; "0": Not Provided. "S": Provided.

-E: Function of reduce standby power consumption: Peripheral circuitry are used as "3165P1x" Board. And secondary signal transform circuits, Type PS-3208 (Optional) provided.

-z: Chassis and Cover. "Blank": Not Provided. "-C": Chassis Provided. "-K": Chassis and Cover Provided.

PS-10WP-5VSB* (*: 'A' to 'Z' or '0' to '9' or blank):

The suffix (*: 'A' to 'Z' or '0' to '9' or blank) does not affect safety.

Capacitor Pack, Type BS13*-EC400/***F (* = 'A' to 'Z' or '0' to '9' or blank):

An additional charging / discharging circuit for capacitor unit for back-up power. They activate to discharging mode when the supply source is disconnected.

Technical Considerations

- Classification of installation and use : For building in
- Device type (component/sub-assembly/ equipment/ system) : Component Power Supply
- Intended use (Including type of patient, application location) : To supply regulated power
- Mode of operation : Continuous
- Supply connection : Connector or Terminal Block
- Accessories and detachable parts included : None

- Other options include : Secondary signal transform circuits, Type PS-3208, Capacitor Pack, Type BS13*-EC400/**F (* = 'A' to 'Z' or '0' to '9' or blank), Standby Power Supply, Type PS-10WP-5VSB* (* = 'A' to 'Z' or '0' to '9' or blank)
- The product was investigated to the following additional standards:: ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes Deviations for United States), CAN/CSA-C22.2 No. 60601-1 (2008) (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) (includes National Differences for Canada), EN 60601-1: 2006 + CORR: 2010 (Medical electrical equipment Part 1: General requirements for basic safety and essential performance)
- The product was not investigated to the following standards or clauses:: Biocompatibility (ISO 10993-1), Clause 14, Programmable Electronic Systems, Electromagnetic Compatibility (IEC 60601-1-2)
- The degree of protection against harmful ingress of water is:: Ordinary
- The following accessories were investigated for use with the product:: None,
- The mode of operation is:: Continuous
- The product is suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide:: No
- Scope of Power Supply evaluation defers the following clauses to the be determined as part of the end product: Clause 7.5 (Safety Signs), Clause 7.9 (Accompanying Documents), Clause 9 (ME Hazard), Clause 10 (Radiation), Clause 14 (PEMS), Clause 16 (ME Systems)
- The pollution degree is: 2
- The overvoltage category is: II (2500 V)
- The altitude is: < 2000 m (MOOP)
- Power supply has been evaluated with a protective earth and could be used in Class I applications. To be further evaluated in the end product.

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 output circuits have not been evaluated for direct patient connection (Type B, BF or CF).
- The output connectors are not acceptable for field connections, they are only intended for factory wiring inside the end-use product.
- The component shall be installed in compliance with the enclosure, mounting, marking, spacing, and separation requirements of the end use application.
- Power supply provides the following MOPP (means of patient protection)/MOOP (means of operator protection): For 2MOOP based upon a working voltage 240 Vrms, 444 Vpk (Model mOZP-200-3R3-xyEnz, mOZP-200-5-xyEnz), 321 Vrms, 616 Vpk (Model mOZP-200-12-xyEnz, mOZP-200-15-xyEnz, mOZP-200-24-xyEnz, mOZP-200-36-xyEnz, mOZP-200-48-xyEnz), 316 Vrms, 560 Vpk (Models PS-10WP-5VSB*) between Primary and Secondary. For 1MOOP based upon a working voltage 240 Vrms, 428 Vpk (Model mOZP-200-3R3-xyEnz, mOZP-200-5-xyEnz), 240 Vrms, 452 Vpk (For Model mOZP-200-12-xyEnz, mOZP-200-15-xyEnz, mOZP-200-24-xyEnz, mOZP-200-36-xyEnz, mOZP-200-48-xyEnz), 318 Vrms, 562 Vpk (Models PS-10WP-5VSB) between Primary and Earth/Metal flame.
- The following secondary output circuits are SELV (42.4 Vpeak a.c. or 60 V d.c.): 3.3 Vdc Output, 5 Vdc Output, 12 Vdc Output, 15 Vdc Output, 24 Vdc Output, 36 Vdc Output and 48 Vdc Output (For Models mOZP-200 series). 5Vdc Output (For Model PS-10WP-5VSB*).

- The following secondary output circuits are at hazardous energy levels: 3.3 Vdc Output, 5 Vdc Output, 12 Vdc Output, 15 Vdc Output, 24 Vdc Output, 36 Vdc Output and 48 Vdc Output (For Model mOZP-200 series). 5 Vdc Output (For Model PS-10WP-5VSB*)
- The maximum investigated branch circuit rating is: 20 A. If used on a branch circuit greater than this, additional testing may be necessary.
- 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), , Inductors (L1, L2) (120°C), , Inductor (L3) (150°C) (For Model mOZP-200 series). Transformer (T500) (Class B) (For Model PS-10WP-5VSB*) .
- Consideration should be given to measuring the temperature on power electronic components and transformer windings when the power supply is installed in the end-use equipment. The end-use product shall ensure that the power supply is used within its ratings.
- Temperature, Leakage Current, Protective Earthing, Dielectric Voltage Withstand, and Interruption of the Power Supply tests should be considered as part of the end product evaluation.
- The risk management requirements of the standard were not addressed and must be considered in the end product investigation.
- End product Risk Management Process to include consideration of requirements specific to the Power Supply.
- End product Risk Management Process to consider the acceptability of risk for components which are identified as High-Integrity Component.
- End product Risk Management Process to consider the need for simultaneous fault condition testing.
- End product Risk Management Process to consider the need for different orientations of installation during testing.
- Humidity conditioning test was conducted on the power supply with 25 °C, 93 %RH, 48 hrs. End product Risk Management Process to determine risk acceptability criteria.
- End product to determine the acceptability of risk in conjunction to the results of Mechanical Testing conducted as part of the power supply.
- End product to determine the acceptability of risk in conjunction to the selection of components as it pertains to the intended use, essential performance, transport, storage conditions as part of the power supply.
- End product to determine the acceptability of risk in conjunction to insulation to resistance to heat, moisture, and dielectric strength.
- End product to determine the acceptability of risk in conjunction to the routing of wires away from moving parts and sharp edges as part of the power supply.
- Power supply has been evaluated with a protective earth and could be used in Class I applications. To be further evaluated in the end product.
- Proper bonding to the end-product main protective earthing termination is required.
- The peak output current is limited within continuous five seconds. In the case of use repeatedly, the time ratio is assumed to be 10% or less.
- The power supply FG Terminal of Terminal Block/Connector (CN1) is connected to printed wiring board trace directly; the Limited Short-Circuit Test in CSA C22.2 No. 0.4, Bonding of Electrical Equipment not conducted due to building-in type component. The evaluation shall be considered in the end-product in case metal chassis of power supply unit is not connected to Protective Earth.
- 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. (For Models Model mOZP-200 series)

- Fuse (F1, F2, F3) is intended to provide in non operator access area. (For Model mOZP-200 series)
- The clearances and creepage distances between each unit shall be re-evaluated in the end product when the optional units (Standby Power Supply, Model PS-10WP-5VSB*, Capacitor Pack, Type BS13*-EC400/**F) are provided.
- Temperature and Abnormal operation test were tested in a cooling carton box, which was provided with nine DC Fans (UL Recognized Component (GPWV2), Melco Technorex Co., Ltd., Type MMF-08C12DS, rated 1.5 m/second) and Filter. See Enclosure - Miscellaneous ID 7-01 for cooling carton box and installation condition.
- The temperature test shall be conducted in the end product. Consideration should be given to measuring the temperature on power electronic components and transformer windings when the power supply is installed in the end product.
- When optional Standby Power Supply Model PS-10WP-5VSB* provided, this optional power supply shall be used with Model mOZP-200 series.
- All necessary tests were conducted on the power supply without optional thermistors (TH2, TH3). Therefore this product does not rely on these thermistor for safety.

Additional Information

This is a new test report transferred from E161936-A66-CB-1 (2012-06-29) with CB Test Certificate Ref. No. US-19282-UL and US-19283-UL, and the following modifications.

- Addition of factory (NIPRON CO LTD, 3249 OIZU INDUSTRIAL PARK IN OYODO KOGYO DANCHI, OAZA YAMA OIZU AZA NAKAJIMA, MEIWA-CHO, TAKI-GUN, MIE, 515-0303, JAPAN)
- Alternate label design (all information put together in single label, while the previous design was separated to two. No change in information)
- Change in pattern trace layout (slight change in primary circuit which would not affect re-tests)

For alternate label design, PS-10WP-5VSB* is out of evaluation.

No tests were considered necessary due to the similarity to the previously evaluated model and as modification above would not give negative impact to product safety. Based on the previously conducted tests and the review of product technical documentation including photos, schematics, wiring diagrams and the similar, it has been determined that the product continues to comply with the standard.

The rated voltage tolerance was specified by the customer request.

- mOZP-200 series: +10%, -10% (-15% to -5 % with output dreading).
- PS-10WP-5VSB*: N/A

Unless otherwise stated, tests are conducted on the representative Model mOZP-200-5-xyEnz (-JSE) and mOZP-200-48-xyEnz (-JSE).

Model PS-10WP-5VSB* are tested with mOZP-200-3R3-xyEnz, mOZP-200-5-xyEnz and mOZP-200-48-xyEnz used input connector (CN500) power supplied from connector (CN3). During tests this unit was fixed to switching power supply, Model mOZP-200 series.

The following Test Records were derived from records of tests for a substantially similar models OZP-200-X-xyEnz series and OZP-200-X-xyEnz under CB Test Certificates No. JPULA-03914: issued date 2011-04-01, JPULA-03914-A1/M1: issued date 2012-03-23, JPULA-03914-A1/M2: issued date 2012-06-11, Test Report Ref No. E161936-A52-CB-1 evaluated to IEC 60950-1:2005 (2nd edition). These test records have been deemed appropriate for use in this Test Report because the Model mOZP-200-X-xyEnz are identical to Model OZP-200-X-xyEnz series except for a fuse provided in each supply lead, switching control integrated

circuit (IC1, IC2) and peripheral circuitry and Model mOZP-200-X-xyEnz are identical to Model OZP-200-X-xyEnz series except for model designation.

As applicable, technical equivalency or differences to requirements in IEC 60601-1 3rd Ed clauses are shown in () following the respective IEC 60950-1. 2nd Ed Clause:

- Input: Single-Phase: IEC60950-1, Sub-Clause 1.6.2
(Power Input: IEC 60601-1, Sub-Clause 4.11)
- Determination of Working Voltage: Working Voltage Measurement: IEC60950-1, Sub-Clause 2.10.2 Part 22 6.1)
(Working Voltage Measurement: IEC 60601-1, Sub-Clause 8.5.4)
- Ball Pressure: IEC60950-1, Sub-Clause 4.5.5, 4.5
(Ball Pressure: IEC 60601-1, Sub-Clause 8.8.4.1)
- Heating: IEC60950-1, Sub-Clause 4.5.1, 1.4.12, 1.4.13
(Temperature Test: IEC 60601-1, Sub-Clause 11)
- Component Failure: IEC60950-1, Sub-Clause 5.3.1, 5.3.4, 5.3.7
(Abnormal Operation and Single Fault Condition: IEC 60601-1 Sub-Clause 13)
- Transformer Abnormal Operation: IEC60950-1, Sub-Clause 5.3.3, 5.3.7b, Annex C.1
(Transformer Overload and Short-Circuit Tests: IEC60601-1, Sub-Clause 15.5.1)

Tests conducted with following output conditions. See Enclosure Id. 6-01 and Id. 6-02 for details.
Power Supply has output power derating curve by Input Voltage 85 Vac, 90% to 95 Vac, 100%

<Models mOZP-200-3R3-xyEnz and mOZP-200-5-xyEnz>

Model mOZP-200-3R3-xyEnz with Forced Air (1.5 m/second): output 3.3 Vdc (2.97-3.96 Vdc: Maximum 151.8 W)

Model mOZP-200-5-xyEnz with Forced Air (1.5 m/second): output 5 Vdc (4.00-6.00 Vdc: Maximum 230 W)

- Output current 46 A with Forced Air (1.5 m/second)
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 70°C / 70°C
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 60°C / 45°C

- Output current 38 A with Forced Air (1.5 m/second)
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 70°C / 60°C

- Output current 32 A with Forced Air (1.5 m/second)
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is (70°C) / 70°C

Model mOZP-200-3R3-xyEnz without Forced Air: output 3.3 Vdc (3.14-3.47 Vdc: Maximum 132 W)

Model mOZP-200-5-xyEnz without Forced Air: output 5 Vdc (4.75-5.25 Vdc: Maximum 200 W)

- Output current 40 A without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 40°C / 35°C
B position: Tma is 45°C / 40°C
C position: Tma is 50°C / 45°C
D position: Tma is 45°C / 35°C
E position: Tma is 40°C / 30°C
F position: Tma is 40°C / 30°C
- Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover

A position: Tma is 40°C / 30°C
B position: Tma is 30°C / 20°C
C position: Tma is 40°C / 30°C
D position: Tma is 30°C / 5°C
E position: Tma is 20°C / 5°C
F position: Tma is 20°C / 5°C

- Output current 32 A without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
C position: Tma is 60°C / -°C

- Output current 28 A without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
C position: Tma is -°C / 55°C

- Output current 26 A without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
B position: Tma is 60°C / 55°C
D position: Tma is 60°C / -°C

- Output current 22 A without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 60°C / 55°C
D position: Tma is -°C / 55°C
E position: Tma is 60°C / -°C
F position: Tma is 60°C / -°C

- Output current 18 A without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
E position: Tma is -°C / 55°C
F position: Tma is -°C / 55°C

- Output current 24 A without Forced Air.
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 60°C / 55°C
C position: Tma is 60°C / 55°C

- Output current 20 A without Forced Air.
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
B position: Tma is 60°C / 55°C
D position: Tma is 60°C / -°C

- Output current 16 A without Forced Air.
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
D position: Tma is -°C / 55°C
E position: Tma is 60°C / 55°C
F position: Tma is 60°C / 55°C

<Models mOZP-200-12-xyEnz, mOZP-200-15-xyEnz, mOZP-200-24-xyEnz, mOZP-200-36-xyEnz and mOZP-200-48-xyEnz >

Model mOZP-200-12-xyEnz with Forced Air (1.5 m/second): output 12 Vdc (9.0-13.2 Vdc: Maximum 240 W)

Model mOZP-200-15-xyEnz with Forced Air (1.5 m/second): output: 15 Vdc (12.0-17.3 Vdc: Maximum 240 W)
Model mOZP-200-24-xyEnz with Forced Air (1.5 m/second): output: 24 Vdc (19.2-28.8 Vdc: Maximum 240 W)
Model mOZP-200-36-xyEnz with Forced Air (1.5 m/second): output: 36 Vdc (28.8-41.4 Vdc: Maximum 241.2 W)
Model mOZP-200-48-xyEnz with Forced Air (1.5 m/second): output: 48 Vdc (40.8-55.2 Vdc: Maximum 240 W)

- Output Power 240 W with Forced Air (1.5 m/second)
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 70°C / 70°C
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 60°C / 45°C

- Output Power 190 W with Forced Air (1.5 m/second)
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 70°C / 60°C

- Output Power 160 W with Forced Air (1.5 m/second)
Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is (70°C) / 70°C

- Output Power 200 W without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 40°C / 35°C
B position: Tma is 45°C / 40°C
C position: Tma is 50°C / 45°C
D position: Tma is 45°C / 35°C
E position: Tma is 40°C / 30°C
F position: Tma is 40°C / 30°C
- Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover
A position: Tma is 40°C / 30°C
B position: Tma is 30°C / 20°C
C position: Tma is 40°C / 30°C
D position: Tma is 30°C / 5°C
E position: Tma is 20°C / 5°C
F position: Tma is 20°C / 5°C

- Output Power 160 W without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
C position: Tma is 60°C / -°C

- Output Power 140 W without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
C position: Tma is -°C / 55°C

- Output Power 130 W without Forced Air.
Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover
B position: Tma is 60°C / 55°C
D position: Tma is 60°C / -°C

- Output Power 110 W without Forced Air.

Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover

A position: Tma is 60°C / 55°C

D position: Tma is -°C / 55°C

E position: Tma is 60°C / -°C

F position: Tma is 60°C / -°C

- Output Power 90 W without Forced Air.

Input Voltage 200 Vac without Chassis and Cover / with Chassis and Cover

E position: Tma is -°C / 55°C

F position: Tma is -°C / 55°C

- Output Power 120 W without Forced Air.

Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover

A position: Tma is 60°C / 55°C

C position: Tma is 60°C / 55°C

- Output Power 100 W without Forced Air.

Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover

B position: Tma is 60°C / 55°C

D position: Tma is 60°C / -°C

- Output Power 80 W without Forced Air.

Input Voltage 100 Vac without Chassis and Cover / with Chassis and Cover

D position: Tma is -°C / 55°C

E position: Tma is 60°C / 55°C

F position: Tma is 60°C / 55°C

Several licenses/certificates enclosed may be over 3 years old and accepting NCBs may require updated documentation upon submitting the unit to obtain a national mark.

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Company identification	Classified or Recognized company's name, Trade name, Trademark or File
Model	Model number
Supply Frequency	Rated frequency range in hertz
Supply Connection	Voltage range, ac/dc, phases if more than single phase
Power Input	Amps, VA, or Watts

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements			
Test Exemptions - The following models are exempt from the indicated test			
Model	Grounding Continuity	Dielectric Voltage Withstand	Patient Circuit Dielectric Voltage Withstand
mOZP-200-3R3-xyEnz, mOZP-200-5-xyEnz, mOZP-200-12-xyEnz, mOZP-200-15-xyEnz, mOZP-200-24-xyEnz, mOZP-200-36-xyEnz and mOZP-200-48-xyEnz (x is "J" or "T", y is "0" or "S", n is any number "0" to "9" or any letter "A" to "Z" except for "E" or blank and z is "-K" or "-C" or blank) PS-10WP-5VSB* (*: 'A' to 'Z' or '0' to '9' or blank)	Exempt	Not exempt	Exempt
Solid-State Component Test Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during either Dielectric Voltage Withstand Test:			
Component			
N/A			
Sample and Test Specifics for Follow-Up Tests at UL			
The following tests shall be conducted in accordance with the Generic Inspection Instructions			
Plastic Enclosure or Part	Test	Sample(s)	Test Specifics
N/A	N/A	N/A	N/A