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REPORT

on

COMPONENT - POWER SUPPLIES MEDICAL AND DENTAL

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DESCRIPTION

PRODUCT COVERED:

USR, CNR - Component - Power Supplies, Models LPT45-M and LPT42-M for Use in Medical and Dental Equipment.

ELECTRICAL RATINGS:

Model	Input	Maximum Output Current	Maximum Output Voltage
LPT45-M	100-250 V ac 50/60 Hz 1.6 A 140-300 V dc 1.0 A	5 A 2.5 A 0.7 A	+5 V dc +15 V dc -15 V dc
* LPT42-M	100-250 V ac 50/60 Hz 1.6 A 140-300 V dc 1.0 A	5 A 2.5 A 0.7 A	+5 V +12 V -12 V

ENGINEERING CONSIDERATIONS: (Not For Field Representative Use)

For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - When installed in the end-use equipment, the following are the considerations to be made:

1. These components have been judged on the basis of the required creepages and clearances in the First Edition of the Standard for Medical Electrical Equipment, UL 2601-1, **and Canadian Standard CAN/CSA C22.2 No. 601.1-M90** Subclause 57.10, which covers the end-use product for which the component was designed.

2. The device shall be installed in compliance with the enclosure, mounting spacing, casualty, markings and segregation requirements of the end-use application.

3. The need for conducting leakage current tests is to be determined as part of the end-product evaluation.

4. The temperature test was conducted in a 30 CFM forced air box measuring 29.8 by 22.2 by 12.1 cm. See ILL 1 (C9900366.I00) for details. Transformer T1 and Choke L3 employ a Class F electrical insulation system. 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.

5. If the Fuse Replacement Marking is covered up on the Power Supply, then a Fuse Replacement Marking must be provided on the end-use product.

6. The input and output connectors are not acceptable for field connections and are only intended for connections to mating connectors of internal wiring inside the end-use product. The acceptability of these and the mating connectors relative to secureness, insulating materials, and temperatures shall be considered in the end-use product.

7. These power supplies have not been evaluated for patient connected applications.

8. The secondary output of transformer T1 is unearthed Safety Extra Low Voltage. Double Insulation, as described in Subclauses 57.9.4 and 57.10, separates the primary circuits from the secondary circuits in this power supply.

9. These power supplies have been evaluated for use in Class 1 equipment as defined in UL 2601-1, First Edition **and Canadian Standard CAN/CSA C22.2 No. 601.1-M90**. An additional evaluation shall be made if the power supply is intended for use in other than Class 1 equipment.

10. These power supplies are not directly connected to earth ground of the branch circuit, they shall be properly bonded to earth ground in the end-use product.

11. Total output power is derated by 2.5% per °C from 50°C to 70°C ambient. The temperature test was conducted in natural convection cooling, for “+5Vdc @ 3A, +12Vdc @ 0.9A, -12Vdc @ 0.38A” output, 60 degree C ambient. And also for “+5Vdc @ 2A, +12Vdc @ 0.6A, -12Vdc @ 0.25A” output, 70 degree C ambient.

CONSTRUCTION DETAILS:

Spacings - The following spacings are maintained in the power supply. See ILL. 2 (C9802541.I00) for details:

A. Minimum 8 mm creepage distance and minimum 5 mm clearance distance between primary and secondary circuits.

B. Minimum 3 mm creepage distance and minimum 1.6 mm clearance distance between primary uninsulated live parts of opposite polarity, and between primary uninsulated live parts and dead metal parts. exceptions to this spacing requirement conform to sub clause 57.10b).

C. Minimum 4 mm creepage distance and minimum 2.5 mm clearance distance between primary circuits and protective earth.

Illustrations - Trace layout of PWB should not deviate from that shown in ILL. 2.

Marking - Recognized Company’s name, model designation and Underwriters Laboratories Recognized Component Mark are provided on label or are ink-stamped or stenciled on product.

Internal Wiring - Unless otherwise specified, all internal wiring is Listed or R/C (AVLV2), rated 300 V, 105°C minimum.

Segregation - Insulated conductors of different circuits are provided with spacing such as specified in this Report unless both circuits are insulated for the highest voltage involved. Insulated conductors are positively maintained away from bare live parts of different circuits, sharp edges and heat producing components.

Mechanical Assembly - Unless otherwise stated, all enclosure parts and component mounting assemblies are secured by welding or thread forming screws, or machine bolts provided with nuts and lock washers.

Mechanical Electrical Connections - For electrical connection, internal wiring and leads of transformers and components are provided with crimp-on terminals such as closed loop, spade type with upturned ends, quick connect with integral detent, or locking type, or are mechanically secured and soldered.