UL 1047

STANDARD FOR SAFETY

Isolated Power Systems Equipment

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UL Standard for Safety for Isolated Power Systems Equipment, UL 1047

Sixth Edition, Dated October 15, 2015

SUMMARY OF TOPICS

This revision of ANSI/UL 1047 dated July 2, 2020 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated May 8, 2020.

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Standard for Isolated Power Systems Equipment

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Fifth Edition – October, 2010

Sixth Edition

October 15, 2015

This ANSI/UL Standard for Safety consists of the Sixth Edition including revisions through July 2, 2020.

The most recent designation of ANSI/UL 1047 as a Reaffirmed American National Standard (ANS) occurred on June 23, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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INTRODUCTION

1 Scope

1.1 These requirements cover isolated power systems equipment rated 600 Vac or less, intended for installation and use in nonhazardous areas in health care facilities in accordance with the requirements in Article 517 of the National Electrical Code, NFPA 70, and in the Standard for Health Care Facilities, NFPA 99.

1.2 These requirements cover isolated power centers, either cord-connected or permanently wired, consisting of a distribution panel that incorporates an isolation transformer, one or more isolated ungrounded secondary circuits terminating in integrally mounted grounding-type receptacles, a reference grounding bus bar, and line isolation monitor. Isolated power centers may have provision for connection of grounding conductors to remote grounding jacks, the room bonding points, and patient equipment grounding points. A permanently wired isolated power center may also have provision for connection to remote receptacles or indicators.

1.3 These requirements cover convertible system units that facilitate a temporary conversion of the power supply for a power center from a grounded supply to an isolated supply.

1.4 These requirements cover isolated power panelboards that incorporate the same features as permanently wired isolated power centers except that:

a) They may be supplied from remote isolation transformers, and

b) The secondary isolated circuits are intended to be connected by conduit to remotely located receptacles.

1.5 These requirements cover wall modular units containing isolated power systems.

1.6 These requirements cover cord-connected isolated power centers, and panels intended to supply x-ray equipment only.

2 Glossary

2.1 For the purpose of this standard the following definitions apply.

2.2 CONVERTIBLE-SYSTEM UNIT – An enclosed assembly incorporating an isolation transformer and line isolation monitor with interconnecting cord assemblies that facilitate temporary conversion of the power supply for a power center from a grounded supply to an isolated supply. The unit is intended for use only with the specific power centers for which it has been designed.

2.3 FIELD-WIRING TERMINAL – A terminal to which a supply or other wire can be connected by an installer in the field is a field-wiring terminal unless a lead is provided as part of a pressure terminal connector, or other means for making the connection is factory-assembled to the wire.

2.4 LINE ISOLATION MONITOR – A test instrument designed to continually check the balanced and unbalanced impedance from each line of an isolated circuit to ground and equipped with a built-in test circuit to actuate an alarm without adding to the leakage current.

2.5 MOMENTARY RATING – A rating based on an operating interval that does not exceed 5 s.

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2.6 PATIENT EQUIPMENT GROUNDING POINT – A jack or terminal bus that serves as the collection point for redundant grounding of electric appliances serving a patient vicinity or for grounding other items in order to eliminate electromagnetic interference problems.

2.7 REFERENCE GROUNDING POINT – A terminal bus that is an extension of the equipment grounding bus and is a convenient collection point for grounding all electric appliances, equipment, and exposed conductive surfaces in a patient vicinity.

2.8 ROOM BONDING POINT – A grounding terminal bus that serves as the collection point for grounding exposed metal or conductive building surfaces in a room.

2.9 WALL MODULAR UNIT – A factory-built wall section or sections typically containing various combinations of gas outlets, lighting fixtures, clocks, intercommunication units, and the like for use in, within, or as part of health-care facilities. Only units containing isolated power systems equipment are covered by this standard. Grounded power circuits that are physically segregated and separated may also be included.

3 General

3.1 Components

3.1.1 Except as indicated in 3.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components generally used in the products covered by this standard.

3.1.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

3.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

3.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3.2 Units of measurement

3.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3.3 Undated reference

3.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

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