UL 2743

Outline of Investigation for Portable Power Packs

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Summary of Topics

This Fourth issue of the Outline of Investigation for Portable Power Packs, UL 2743 includes changes that address the addition of an exception for the minimum operating ambient of booster cable clamps to align this document with the Standard for Automotive Battery Booster Cables, UL 1839; addition of requirements to cover the use of electrochemical capacitor modules; and additional editorial and minor changes.

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INTRODUCTION

1 Scope

1.1 These requirements cover portable and movable power packs provided with one or more batteries or electrochemical capacitor modules. If provided with a battery, the battery shall be either a lead acid or lithium ion battery. The power packs are provided with one or more inputs as shown in 1.2; and they are provided with one or more outputs as shown in 1.3. For power packs provided with a booster function, the power packs are used for providing a temporary power source to a depleted land vehicle battery, rated 12 or 24 V, to provide emergency starting power.

1.2 Power packs shall be provided with one or more of the input options as shown below:

a) Cord and plug connection, rated at 240 V ac maximum, to and/or 60 Hz;

b) Photovoltaic panel or device with inverter; or

c) Vehicle adapter, rated 12 V dc maximum.

1.3 Power packs covered by this outline shall be provided with one or more of the following outputs, with the exception that one of the outputs in items (a) – (c) are provided as a minimum:

a) Booster cables to provide a temporary power source to a depleted land vehicle battery, rated 12 or 24 V, to provide emergency starting power or recharging of the external vehicle battery;

b) One or more receptacles, each rated no more than 125 V ac, 15 A;

c) DC output connectors rated 24 V dc maximum; or

d) Standard USB port outputs.

1.4 With reference to 1.3, power packs may also be provided with additional systems such as an air compressor (tankless type) for inflating tires or other inflatable items, or with a light to act as warning lights to oncoming traffic, as a flashlight, or the like. These functions are also powered by the internal battery.

1.5 These requirements cover the power pack options such as lights, voltmeters, internal air compressor assemblies, associated gauges, inverters, vehicle adapters, and internal batteries, as well as the charging of the internal batteries, when these options are integral to the power pack.

1.6 These requirements do not cover wiring or cabling used in the recharging function of electric vehicle recharging equipment.

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2 Units of Measurement

2.1 Values stated without parentheses are the requirement. Values within parentheses are considered explanatory or approximate information.

3 Components

3.1 Except as indicated in 3.2, a component of a product covered by this outline shall comply with the requirements for that component.

3.2 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 outline, or

b) Is superseded by a requirement in this outline.

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

3.4 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.

4 Undated References

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

5 Glossary

5.1 For the purpose of this document, the following definitions apply:

5.2 ACCESSIBLE – Able to be contacted by an accessibility probe.

5.3 BATTERY – An electrical storage unit consisting of two or more cells.

5.4 BOOSTER CABLE – The conductors that originate at the power pack's internal battery and terminate at the clamps that are intended to be temporarily connected to the land vehicle's battery. If the cable is connected through a switch and therefore does not have a continuous path to the exterior of the power pack's enclosure, then the definition shall apply to the portion of cable that exits the power pack's enclosure.

5.5 BOOSTER FUNCTION – When the power packs are used for providing a temporary power source to a depleted land vehicle battery, rated 12 or 24 V, to provide emergency starting power.

5.6 C_5 RATE – The current, in amperes, that a cell or battery can be discharged at for 5 hours to the voltage cut-off point specified by the cell or battery manufacturer. This is equal to the C_5 capacity divided by 5 hours where C_5 is measured in accordance with Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes – Secondary Lithium Cells and Batteries for Portable Applications, IEC 61960.

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