



AEROSPACE RECOMMENDED PRACTICE

ARP1816™**REV. D**

Issued 1984-09
Revised 2015-07
Reaffirmed 2020-09

Superseding ARP1816C

(R) Charger for Battery Powered Ground Support Equipment

RATIONALE

A review of ARP1816C revealed that it excluded charging technology commonly referred to as opportunity charging. ARP1816C was revised to include a section describing this charging technology.

1. SCOPE

This SAE Aerospace Recommended Practice (ARP) describes three general types of Ground Support Equipment (GSE) battery chargers. The battery charger typically requiring up to 8 hours to recharge a 100% discharged battery, hereafter called "Conventional Charger." A charger, hereafter called "Opportunity Charger," which has the ability to charge at a slightly faster rate than a conventional charger. A charger, hereafter called "Fast Charger," which has the ability to charge at a much faster rate than a conventional charger. Recommendations that apply to all types will refer generically to "charger."

2. REFERENCES

2.1 APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 ANSI Publications

Available from American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036, Tel: 212-642-4900, www.ansi.org.

ANSI C84.1-1995 Voltage Ratings for Electrical Power Systems and Equipment (60 Hz)

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For more information on this standard, visit
<https://www.sae.org/standards/content/ARP1816D>

Documents
Document Sharing Hub

2.1.2 BCI Publications

Available from Battery Council International, 330 North Wabash Avenue, Suite 2000, Chicago, IL 60611, Tel: 312-644-6610, www.batterycouncil.org.

BCIS-16 Standard for Deep Cycle Battery Chargers

BCIS-18 Standard for Deep Cycle Fast Battery Chargers.

2.1.3 CSA Publications

Available from CSA International, 178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3, Tel: 416-747-4000, www.csa-international.org.

CAN/CSA-C22.2 NO. 107.2-01 Battery Chargers

2.1.4 UL Publications

Available from UL, 333 Pfingsten Road, Northbrook, IL 60062-2096, Tel: 847-272-8800, www.ul.com.

UL 1564 Industrial Battery Chargers

2.2 Definitions

2.2.1 AMPACITY: The current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.

3. GENERAL DESCRIPTION

3.1 Charger

3.1.1 The basic charger shall be UL listed (UL 1564 Industrial Battery Chargers) or CSA certified (CAN/CSA-C22.2 NO. 107.2-01 Battery Chargers) except as modified for outdoor use or other special options.

3.1.2 Adequate overload protection shall be provided in both AC and DC lines.

3.1.3 The charger input voltage shall be single or three-phase and purpose built to match the electrical supply. Dual voltage transformers with easy to change transformer terminals may also be used provided changeover instructions are permanently affixed inside the charger in a readily visible location through the open door. Three phase chargers are recommended.

3.1.4 Nominal control voltage shall be 24 VAC or less.

3.1.5 A transformer shall be used as the primary means of minimizing AC shock hazards and the following points shall be considered.

3.1.5.1 The transformer shall have its primary winding electrically isolated from its secondary winding and, if required by UL, shall be varnish impregnated and baked to exclude moisture.

3.1.5.2 Means shall be provided to prevent the possibility of primary voltage being present in the secondary circuit. This shall be accomplished by either of the following: