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CSA C812:16
(reaffirmed 2020)

Energy performance of large battery charger systems

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Contents

Preface

This is the first edition of CSA C812, *Energy performance of large battery charger systems.*

This Standard specifies the test method for measuring and reporting the energy consumption of large battery charger systems.

This Standard has been harmonized with the requirements for testing and evaluating the energy consumption of large battery charger systems specified in the *California Energy Commission Appliance Efficiency Regulations*, CEC-400-2014-009, which refers to *Energy Efficiency Battery Charger System Test Procedure,* Version 2.2, dated November 12, 2008, published by ECOS and EPRI Solutions.

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support of Natural Resources Canada, B.C. Hydro, Manitoba Hydro, Hydro Quebec, Ontario Ministry of Energy, Canadian Electricity Association, Independent Electricity System Operator, and Nova Scotia Energy.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

The Standard was prepared by the Subcommittee on Energy Efficiency for Large Battery Charger Systems under the jurisdiction of the Technical Committee on Industrial Equipment and the Strategic Steering Committee on Performance, Energy Efficiency, and Renewables, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*
   a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
   b) *provide an explanation of circumstances surrounding the actual field condition; and*
   c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

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5) *This Standard is subject to review within five years from the date of publication and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
   a) *Standard designation (number);*
   b) *relevant clause, table, and/or number;*
   c) *wording of the proposed change; and*
   d) *rationale for the change.*

CSA C812:16
Energy performance of large battery charger systems

1 Scope

1.1

This Standard specifies the test method for measuring and reporting the energy performance of large battery charger systems.

Note: *This Standard is technology neutral.*

1.2

This Standard applies to large battery charger systems such as forklifts, autoettes, electric personal assistive mobility devices, and low speed vehicles that are battery charger systems with a rated input power of more than 2 kW, except those

a) used to charge a motor vehicle that is powered by an electric motor drawing current from rechargeable storage batteries, fuel cells, or other portable sources of electrical current, and which may include a nonelectrical source of power designed to charge batteries and components thereof;
b) used to charge a battery or batteries in an illuminated exit sign;
c) with input that is three phase of line-to-line 300 volts root mean square (rms) or more and is designed for a stationary power application;
d) that are battery analyzers;
e) that are uninterruptible power systems as defined by IEC 62040-3; or
f) that are for golf carts.

1.3

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

1.4

The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

