IEC 62840-2

Edition 1.0 2016-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric vehicle battery swap system – Part 2: Safety requirements

Système d'échange de batterie de véhicule électrique – Partie 2: Exigences de sécurité

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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRIC VEHICLE BATTERY SWAP SYSTEM –

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FOREWORD

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International Standard IEC 62840-2 has been prepared by IEC technical committee 69: Electric road vehicles and electric industrial trucks.

The text of this standard is based on the following documents:

FDIS	Report on voting
69/420/FDIS	69/433/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard is to be read in conjunction with IEC 62840-1:2016.

in this document, the following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*

– notes: in small roman type.

A list of all parts in the IEC 62840 series, published under the general title *Electric vehicle battery swap system*, can be found on the IEC website.

The following differing practices of a less permanent nature exist in the countries indicated below

– 7.6.1: RCDs of type AC may be used (Japan).

– 7.6.1: a device which measures leakage current over a range of frequencies and trips at pre-defined levels of leakage current, based upon the frequency, is required (United States).

– 10.4: three-part cautionary statements are required (United States).

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The purpose of the battery swap system is to provide energy partly or in total to electric vehicles (EV) through fast replacement of their swappable battery systems (SBS). While charging, the EV typically takes a relatively long time, whereas the battery swap process takes only a few minutes to complete. Thus it will reduce the range anxiety and will facilitate travel for longer distances.

As there is a possibility to charge the batteries after their removal from the vehicle in various ways, the impact of this process on the critical infrastructure of the electrical grid can be minimized.

Battery swap stations mainly include one or more of the following functions:

- swap of EV swappable battery system (SBS);
- storage of EV SBS;
- charging and cooling of EV SBS;
- testing, maintenance and safety management of EV SBS.

This part of IEC 62840 serves as a generic approach for safety during the lifecycle of battery swap systems and stations for electric vehicles.