AS IEC 61851.24:2014
IEC 61851-24, Ed. 1.0 (2014)

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Australian STANDARD

Electric vehicle conductive charging system

Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging

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This Australian Standard® was prepared by Committee EM-001, Electric Vehicle Operation. It was approved on behalf of the Council of Standards Australia on 3 June 2014.
This Standard was published on 30 June 2014.

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- Australian Automobile Association
- Australian Electric Vehicle Association
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- National Association of Testing Authorities Australia
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- Victorian Automobile Chamber of Commerce

This Standard was issued in draft form for comment as DR 102428.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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First published as AS IEC 61851.24:2014.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 787 3

PREFACE

This Standard was prepared by the Standards Australia Committee EM-001, Electric Vehicle Operation.

The objective of this Standard is to, together with AS IEC 61851.23, give requirements for digital communication between a d.c. EV charging station and an electric road vehicle (EV) for control of d.c. charging, with an a.c. or d.c. input voltage up to 1 000 V a.c. and up to 1 500 V d.c. for the conductive charging procedure.

This Standard is identical with, and has been reproduced from IEC 61851-24, Ed. 1.0 (2014), *Electric vehicle conductive charging system—Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging*.

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this part of IEC 61851' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

None of the normative references in the source document have been adopted as Australian or Australian/New Zealand Standards.

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

CONTENTS

INTRODUCTION

The introduction and commercialisation of electric vehicles has been accelerated in the global market, responding to the global concerns on CO_2 reduction and energy security. Concurrently, the development of charging infrastructure for electric vehicles has also been expanding. As supplementary system of a.c. charging system, d.c. charging is recognized as an effective solution to extend the available range of electric vehicles, and different d.c. charging systems are being used over the world. The international standardization in terms of charging infrastructure including d.c. charging systems is indispensable for the diffusion of electric vehicles, and this standard is developed for the manufacturers' convenience by providing general specifications for control communication protocols between off-board d.c. charger and electric vehicles.

AUSTRALIAN STANDARD

Electric vehicle conductive charging system

Part 24:
Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging

1 Scope

This part of IEC 61851, together with IEC 61851-23, applies to digital communication between a d.c. EV charging station and an electric road vehicle (EV) for control of d.c. charging, with an a.c. or d.c. input voltage up to 1 000 V a.c. and up to 1 500 V d.c. for the conductive charging procedure.

The EV charging mode is mode 4, according to IEC 61851-23. The charging station supplied by high voltage a.c. supply is not covered by this standard.

Annexes A, B, and C give descriptions of digital communications for control of d.c. charging specific to d.c. EV charging systems A, B and C as defined in Part 23.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61851-1:2010, *Electric vehicle conductive charging system – Part 1: General requirements*

IEC 61851-23:2014, *Electric vehicle conductive charging system – Part 23: DC electric vehicle charging station*

ISO/IEC 15118-1[1], *Road vehicles – Vehicle to grid communication interface – Part 1: General information and use-case definition*

ISO/IEC 15118-2:—[1], *Road vehicles – Vehicle to grid communication interface – Part 2: Technical protocol description and open systems interconnections (OSI) layer requirements*

ISO/IEC 15118-3:—[1], *Road vehicles – Vehicle to grid communication interface – Part 3 Physical layer requirements*

ISO 11898-1:2003, *Road vehicles – Controller area network (CAN) – Part 1: Data link layer and physical signalling*

ISO 11898-2:2003, *Road vehicles – Controller area network (CAN) – Part 2: High-speed medium access unit*

