

# TECHNICAL SPECIFICATION



**Electric vehicles conductive charging system –  
Part 3-4: DC EV supply equipment where protection relies on double or  
reinforced insulation – General definitions and requirements for CANopen  
communication**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC VEHICLES CONDUCTIVE CHARGING SYSTEM –****Part 3-4: DC EV supply equipment where protection relies  
on double or reinforced insulation – General definitions and  
requirements for CANopen communication**

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Draft	Report on voting
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	69/671A/RVDTS

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## INTRODUCTION

This document is published in separate parts according to the following structure:

IEC TS 61851-3-1, *Electric vehicles conductive charging system – Part 3-1: DC EV supply equipment where protection relies on double or reinforced insulation – General rules and requirements for stationary equipment*

IEC TS 61851-3-2, *Electric vehicles conductive charging system – Part 3-2: r DC EV supply equipment where protection relies on double or reinforced insulation – Portable and mobile DRI EV supply equipment*

IEC TS 61851-3-4, *Electric vehicles conductive charging system – Part 3-4:DC EV supply equipment where protection relies on double or reinforced insulation – General definitions and requirements for CANopen communication*

IEC TS 61851-3-5, *Electric vehicles conductive charging system – Part 3-5:DC EV supply equipment where protection relies on double or reinforced insulation – Pre-defined communication parameters and general application objects*

IEC TS 61851-3-6, *Electric vehicles conductive charging system – Part 3-6:DC EV supply equipment where protection relies on double or reinforced insulation – Voltage converter unit communication*

IEC TS 61851-3-7, *Electric vehicles conductive charging system – Part 3-7:DC EV supply equipment where protection relies on double or reinforced insulation – Battery system communication*

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## ELECTRIC VEHICLES CONDUCTIVE CHARGING SYSTEM –

### Part 3-4: DC EV supply equipment where protection relies on double or reinforced insulation – General definitions and requirements for CANopen communication

#### 1 Scope

This part of IEC 61851, which is a Technical Specification, applies to CANopen communication for the conductive transfer of electric power between the supply network and an electric road vehicle or a removable rechargeable energy storage system (RESS) or on-board rechargeable energy storage systems (RESS) of an electric road vehicle.

The energy management system (EMS) for control of power transfer between battery systems and voltage converter units (VCU) provides the communication for all devices that can take part in energy management control.

The basic application profile for energy management systems (EMS) consists of IEC TS 61851-3-4, IEC TS 61851-3-5, IEC TS 61851-3-6, IEC TS 61851-3-7.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60309 (all parts), *Plugs, socket-outlets and couplers for industrial purposes*

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60884 (all parts), *Plugs and socket-outlets for household and similar purposes*

IEC 61850 (all parts), *Communication networks and systems for power utility automation*

IEC TS 61851-3-1:2023, *Electric vehicles conductive charging system – Part 3-1 DC EV supply equipment where protection relies on double or reinforced insulation – AC and DC conductive power supply systems*

IEC TS 61851-3-5:2023, *Electric vehicles conductive charging system – Part 3-5: DC EV supply equipment where protection relies on double or reinforced insulation – Pre-defined communication parameters and general application objects*

IEC TS 61851-3-6:2023, *Electric vehicles conductive charging system – Part 3-6: DC EV supply equipment where protection relies on double or reinforced insulation – Voltage converter unit communication*

IEC TS 61851-3-7:2023, *Electric vehicles conductive charging system – Part 3-7: DC EV supply equipment where protection relies on double or reinforced insulation – Battery system communication*

IEC TS 62196-4: *Plugs, socket-outlets, vehicle connectors and vehicles inlet – Conductive charging of electric vehicles – Part 4: Dimensional compatibility and interchangeability requirements for DC pin and contact-tube accessories for class II or class III applications*<sup>1</sup>

ISO/IEC 646:1991, *Information technology – ISO 7-bit coded character set for information interchange*

ISO/IEC 14443 (all parts), *Identification cards — Contactless integrated circuit(s) cards — Proximity cards*

ISO/IEC 18092:2013, *Information technology – Telecommunications and information exchange between systems – Near Field Communication – Interface and Protocol (NFCIP-1)*

ISO 11898-2:2016, *Road vehicles – Controller area network (CAN) – Part 2: High speed medium access unit*

ISO 11898-5:2007, *Road vehicles – Controller area network (CAN) – Part 5: High speed medium access unit with low-power mode*

ISO 11898-6:2013, *Road vehicles – Controller area network (CAN) – Part 6: High speed medium access unit with selective wake-up functionality*

CiA 302-1:2009, *CANopen additional application layer functions – Part 1: General definitions (available at [www.can-cia.org](http://www.can-cia.org))*

CiA 302-2:2009, *CANopen additional application layer functions – Part 2: Network management (available at [www.can-cia.org](http://www.can-cia.org))*

CiA 302-3:2010, *CANopen additional application layer functions – Part 3: Configuration and program download (available at [www.can-cia.org](http://www.can-cia.org))*

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EN 50325-4:2002, *Industrial communications subsystem based on ISO 11898 (CAN) for controller- device interfaces – Part 4: CANopen*

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### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC TS 61851-3-1, EN 50325-4:2002, ISO 11898-2:2016, ISO 11898-5:2007, ISO 11898-6:2013 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

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