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Edition 1.0 2023-07

TECHNICAL SPECIFICATION

colour inside

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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CONTENTS

FOREWORD 8
INTRODUCTION 10
1 Scope 12
2 Normative references 12
3 Terms and definitions 13
4 Symbols and abbreviated terms 16
5 General conditions for the tests 17
6 Physical layer specification 18
6.1 General 18
6.2 Medium access unit 18
6.3 Transmission rates 18
6.4 Node-ID assignment 18
6.5 Network topology 19
6.6 Gateway 19
7 Error handling 19
7.1 General 19
7.2 Enhancement of the emergency message handling 19
7.3 Pre-defined error field 21
7.4 Error behaviour 21
7.5 Additional error codes 22
8 Operating principles 23
8.1 General 23
8.2 Functional description 23
8.2.1 General 23
8.2.2 Voltages, currents, loads 23
8.2.3 Activating of the energy management system (EMS) 24
8.2.4 Connection and disconnection of devices 25
8.2.5 "Sleep" 25
8.3 Use case specific definitions for EMSs in EVs 25
8.3.1 General 25
8.3.2 EMS in operation 25
8.3.3 Design and implementation for EV supply system configurations Types "A-F" 26
8.4 Virtual architecture of the EMS 31
8.4.1 General 31
8.4.2 Standard virtual EMS control network 31
8.4.3 General application object (GAO) 32
8.4.4 Energy management system controller (EMSC) 33
8.4.5 Voltage converter unit (VCU) 33
8.4.6 Battery system 33
8.4.7 Security unit (optional) 34
8.4.8 Manufacturer-specific virtual devices (optional) 34
9 Finite state automaton (device modelling) 34
9.1 General 34
9.2 EMS finite state automaton (FSA) 35
9.2.1 State definition 35

9.2.2 Transitions of the EMS FSA 37
10 General CANopen communication capabilities in EMSs 38
10.1 Network management 38
10.2 SDO communication 39
10.3 PDO communication 39
10.4 Bootloader 39
10.4.1 General 39
10.4.2 Bootloader mode 39
10.4.3 Starting and stopping the application program 40
10.4.4 Application program file format 41
10.4.5 Error management 45
11 Representation of analogue values 45
11.1 General 45
11.2 Representation of generic analogue values 45
11.2.1 Percent 45
11.2.2 Temperature 45
11.2.3 Temperature rate (ΔT) 45
11.2.4 Time (days) 45
11.2.5 Time (minutes) 45
11.2.6 Time (milliseconds) 45
11.3 Electrical-related analogue value representation 46
11.3.1 Current 46
11.3.2 Electric charge 46
11.3.3 Electric charge (for statistical purposes) 46
11.3.4 Electric charge rate 46
11.3.5 Energy power (for statistical purposes) 46
11.3.6 Energy power 46
11.3.7 Frequency 46
11.3.8 Power 46
11.3.9 Power factor 46
11.3.10 Resistor 46
11.3.11 Voltage 46
11.4 Mechanical-related analogue value representation (optional) 46
11.4.1 Angle/circular position 46
11.4.2 Distance (long) 47
11.4.3 Distance (short) 47
11.4.4 Force 47
11.4.5 Rotational speed 47
11.4.6 Revolutions 47
11.4.7 Torque 47
11.4.8 Velocity 47
11.5 Optical-related analogue value representation – Colour/brightness 47
Annex A (informative) System architecture and use cases 48
A.1 General 48
A.2 Application profile for EMS 48
A.2.1 General 48
A.2.2 Maximum possible devices on a virtual EMS control network 48
A.2.3 Minimum virtual EMS control network 49
A.3 General application object 50

A.3.1 General 50
A.3.2 Motor control unit 50
A.3.3 Load monitoring unit 50
A.3.4 Generator unit 51
A.3.5 Load unit 51
A.3.6 HMI unit 51
A.3.7 Sensor unit 51
A.3.8 Gateway 51
A.3.9 IEC 61850 gateway 51
A.4 Use cases (informative) 51
A.4.1 EV use case 51
A.4.2 Stationary use case 52
Annex B (normative) Energy management system controller (EMSC) 55
B.1 General 55
B.2 Object dictionary 55
B.2.1 General 55
B.2.2 NMT communication objects 55
B.2.3 Produced application objects 56
B.2.4 Consumed application objects 59
B.3 Tasks of an EMSC 64
B.3.1 General 64
B.3.2 Start-up 65
B.3.3 Compatibility check 65
B.3.4 Releasing devices 65
B.3.5 "Sleep"- mode 66
Annex C (informative) Implementation guidelines 67
C.1 General 67
C.2 Timings 67
C.2.1 General 67
C.2.2 Start up 67
C.3 Master handling 67
C.3.1 General 67
C.3.2 Detecting master availability 67
C.3.3 EMSC SDO handling 67
C.4 Design of voltage converter unit communication for EVs 68
C.4.1 Use cases 68
C.4.2 Recommended power transfer protocol 69
Annex D (normative) Power management via "sleep" 79
D.1 General 79
D.2 Operation principles 79
D.2.1 General 79
D.2.2 Pre-conditions 79
D.2.3 Finite state automaton for power management 79
D.3 Services 81
D.3.1 General 81
D.3.2 Service "query sleep objection" and "sleep objection" 81
D.3.3 Service Set "sleep" 82
D.3.4 Service "wake-up" 83
D.3.5 Service "request sleep" 84

D.4 Protocols 84
D.4.1 Protocol "query sleep objection" 84
D.4.2 Protocol "sleep objection" 84
D.4.3 Protocol set "sleep" 85
D.4.4 Protocol "wake-up" 85
D.4.5 Protocol "request sleep" 87
D.5 Power management timing – Sleep/wake-up 87
D.6 Miscellaneous timing values 88
Annex E (informative) Handling of multiple energy loads/sources 89
E.1 General 89
E.2 Consecutive power transfer to battery systems without power loss 89
E.3 Parallel charge and discharge 90
Annex F (normative) Communication connector 92
F.1 General 92
F.2 Configuration of 4-II for configuration type B 92
F.3 NFC description 93
F.4 Communication connector 98
Annex G (informative) Orientation 100
G.1 General 100
G.2 Orientation definitions for pedal driven EVs 100
G.3 Orientations for non- pedal driven EV applications 100
Bibliography 102

Figure 1 – Protocol emergency write for energy management applications 20
Figure 2 – EV supply system cConfiguration type A 27
Figure 3 – EV supply system configuration type B 28
Figure 4 – EV supply system cConfiguration type C 29
Figure 5 – EV supply system configuration type D 29
Figure 6 – EV supply sytem configuration type E 30
Figure 7 – EV supply system configuration type F 30
Figure 8 – Conversion device for configuration type C 31
Figure 9 – Virtual standard architecture of the EMS 32
Figure 10 – Remote and local control 35
Figure 11 – EMS FSA 37
Figure 12 – Flow chart for switching between bootloader mode and application 40
Figure 13 – Application program 41
Figure 14 – Program identifier 1 41
Figure 15 – Program identifier 2 41
Figure 16 – Program identifier 3 42
Figure 17 – Program identifier 4 42
Figure 18 – Program identifier 5 42
Figure 19 – Example for program identifier handling 43
Figure 20 – Object structure 47
Figure A.1 – Virtual maximum architecture of the EMS 49
Figure A.2 – Virtual minimum architecture of the EMS 50

Figure A.3 – EMS application in EV 52
Figure A.4 – Typically stationary photovoltaic hybrid off-grid application 53
Figure A.5 – Use case according to self-consumption regulation 54
Figure B.1 – Value structure 56
Figure B.2 – Object structure 57
Figure B.3 – Value structure 58
Figure B.4 – Value structure 64
Figure C.1 – Voltage converter unit used as power supply for EV 69
Figure C.2 – Sequence diagram for startup of the connection 70
Figure C.3 – Sequence diagram "New device connected" 71
Figure C.4 – Preparation of the power transfer procedure 72
Figure C.5 – Configuration of limitations 75
Figure C.6 – Start up procedure for initiate power transfer 76
Figure C.7 – Power transfer in progress 78
Figure D.1 – Power management FSA 80
Figure D.2 – "Sleep" inhibited by objection 82
Figure D.3 – Transition into "sleep" without objection 82
Figure D.4 – Execution of "query sleep objection" service for a device in "sleep" 83
Figure D.5 – Execution of "wake-up" service 83
Figure D.6 – Execution of "request sleep" service 84
Figure D.7 – Protocol "query sleep objection" 84
Figure D.8 – Protocol "sleep objection" 85
Figure D.9 – Protocol set "sleep" 85
Figure D.10 – Protocol "wake-up" 86
Figure D.11 – Protocol "wake-up" 86
Figure D.12 – Protocol "request sleep" 87
Figure D.13 – "Query sleep objection" protocol timing 87
Figure F.1 – Configuration 4-II communication only 93
Figure F.2 – Position of NFC 95
Figure F.3 – Latching device 96
Figure F.4 – Position of NFC in vehicle inlet and socket-outlet according to IEC TS 62169-4:2019 sheet 4-II 97
Figure F.5 – Overview 97
Figure F.6 – Communication connector details 98
Figure F.7 – Overview of communication connector 99
Figure G.1 – Orientation definition for EVs 100
Figure G.2 – Position of axes relative to orientation 101

Table 1 – DRI EV supply equipment and external device node-ID assignment 19
Table 2 – Value definition for EMCY message 21
Table 3 – Additional error codes 22
Table 4 – State description 36
Table 5 – Events and actions 38

Table 6 – Value definition 44
Table B.1 – Value definition 56
Table B.2 – Object description 57
Table B.3 – Entry description 57
Table B.4 – Value definition EV type 57
Table B.5 – Value definition speed 58
Table B.6 – Object description 58
Table B.7 – Entry description 58
Table B.8 – Value definition 59
Table B.9 – Object description 59
Table B.10 – Entry description 59
Table B.11 – Value definition 60
Table B.12 – Object description 60
Table B.13 – Entry description 61
Table B.14 – Value definition 62
Table B.15 – Object description 62
Table B.16 – Entry description 63
Table B.17 – Value definition 64
Table B.18 – Object description 64
Table B.19 – Entry description 64
Table B.20 – Compatibility check 65
Table C.1 – Data transfer from battery system to VCU's 73
Table C.2 – Additional parameters relevant for power transfer process 73
Table C.3 – Additional parameters relevant for power transfer process 73
Table C.4 – Most important parameters for limiting 74
Table C.5 – Limit calculation for battery systems 75
Table C.6 – Data transfer from battery to VCUs 77
Table C.7 – Data transfer from VCUs to the battery 77
Table D.1 – State description 80
Table D.2 – Events and actions 81
Table D.3 – Timing values for "query sleep objection" 87
Table D.4 – Timing values for "sleep" wait time 88
Table D.5 – Miscellaneous timing values 88
Table E.1 – Example for battery system switching procedure 90
Table E.2 – Example for battery system handling in parallel 91
Table F.1 – NDEF message 94
Table F.2 – NFC description 94

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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

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The text of this Technical Specification is based on the following documents:

Draft	Report on voting
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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Specification is English.

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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*[1]

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)*

CiA 302-2:2009, CANopen *additional application layer functions – Part 2: Network management* (available at 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)*

CiA 305:2013, *CANopen layer setting services (LSS) and protocols* (available at www.can-cia.org)

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

EN 50604-1:2016, *Secondary lithium batteries for light EV (electric vehicle) applications – Part 1: General safety requirements and test methods*

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/
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[1] Under preparation. Stage at the time of publication: DTS.