

Class 1

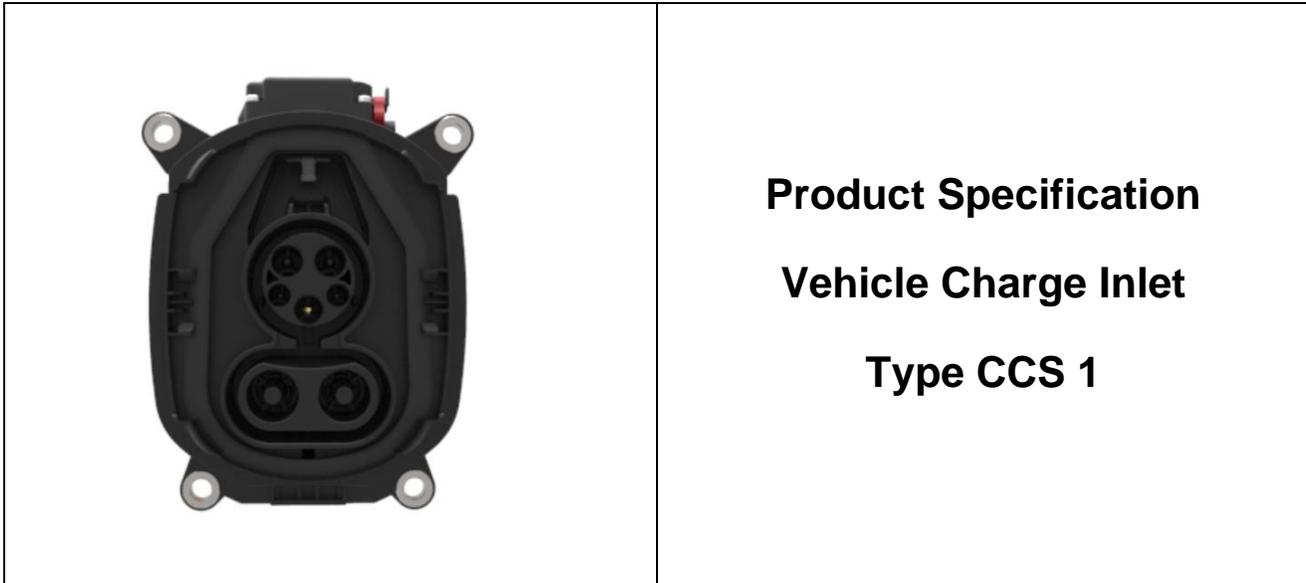


TABLE OF CONTENTS

1. SCOPE	2
1.1. Introduction	2
2. APPLICABLE DOCUMENTS	3
2.1. TE Connectivity Documents	3
2.2. Other Documents.....	3
3. REQUIREMENTS.....	4
3.1. Design and Construction	4
3.2. Material	4
3.3. Product Ratings	4
3.4. Performance and Test Description	5

1. SCOPE

1.1. Introduction

The TE CCS1 charging inlet was designed to power electric and hybrid vehicles that comply with IEC-standard 62196. The maximum rated current for AC is 32A and for DC it is 200A at the maximum voltage of 240V for AC and 1000V for DC.

The content of this specification covers the technical characteristics, performance and test requirements for the EV CHARGE INLET Combined Charging System Type 1 further mentioned as CCS1.

When tests are performed the following specifications and standards shall be used. All inspections shall be performed using the applicable inspection plan and customer drawing.

2. APPLICABLE DOCUMENTS

The following mentioned documents are part of this specification. Unless otherwise specified, the latest edition of the documents applies. In the event of conflict between the requirements of this specification and the information contained in the referenced documents, this specification shall take precedence.

2.1. TE Connectivity Documents

General Requirements

Requirement	Description
109-1 Rev. J	General Requirements for Testing

Drawings

Drawing	Description
CD-2337006	CHARGE INLET, ASSY, CSS1 KIT

Specifications

Specification	Description
114-94648	Application Spec. Vehicle Charge Inlet CCS 1 (90°)
114-94649	Application Spec. Vehicle Charge Inlet CCS 1 (180°)
114-94436	Crimp Spec. (90° DC-Contact)
114-13000	Micro MATE-N-LOK Connectors
108-94519	Actuator-Specification

2.2. Other Documents

Specification	Description
IEC 62196-1: 2014/06	General requirements
IEC 62196-2: 2016/02	Dimensional compatibility and interchangeability requirements for AC pin and contact-tube accessories
IEC 62196-3: 2014/06	Dimensional compatibility and interchangeability requirements for DC and AC/DC pin and contact-tube vehicle couplers
SAE J1772: 2016/02	SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Coupler

3. REQUIREMENTS

3.1. Design and Construction

The product has been designed to withstand its environment and the effects it has on it.

3.2. Material

The Material data is available in the IMDS (International Material Data System of the Automotive Industry).

3.3. Product Ratings

Dimensions

Mating-Face Geometry

compatible with IEC 62196-2 Sheet 2-I
and IEC 62196-3 Sheet 3-IIIa
see Drawing

Screw Points

Environmental conditions

Ambient temperature (active, during charging)

-30 °C +50 °C

Ambient temperature (passive, no charging)

-40 °C +85 °C

Max. altitude

5000m above sea-level

Protection degree

IP 55 (Mating face when mated with CCS1
vehicle connector acc. IEC62196-3 or
Type1 vehicle connector acc. IEC62196-2
with flap assy 9- or 8-2337030-1 to cover the
DC portion.)
IP 67 (Rear Cover)

Electrical Properties

Max. charging performance

7,68 kW (AC) / 200 kW (DC)

Type of charging current

AC / DC

Number of AC-phases

1

Number of Terminals

7 (PE, L1, L2/N, DC+, DC-, CS, CC)

Rated current

32A AC / 200A DC

Rated voltage

240V AC / 1000V DC

Signal pin rated current

2A

Signal pin rated voltage

30V

Type of signal transmission

Analog

Insulation resistance of adjacent contacts

200MΩ

Resistor coding

acc. IEC 61851-1

Mechanical Properties

Mating / un-mating endurance

10000 cycles

Insertion force

typical <100N (depending on connector)

Retention force

typical <100N (depending on connector)

Mechanical Stability of charging socket

500N in all directions

(Lever-Length 100mm)

Vibration Level

LV214 PG17 Severity 2 (Body mount)

Temperature Sensoring

Temperature Sensor Type

NTC

Recommended measuring current

nominal 0.1mA / max. 1mA (1V at 0°C)

Proposed Shutdown DC

85°C measured temperature at Sensor
(Equivalent to max. contact temperature 90°C)

Proposed Shutdown AC

78°C measured temperature at Sensor
(Equivalent to max. contact temperature 90°C)

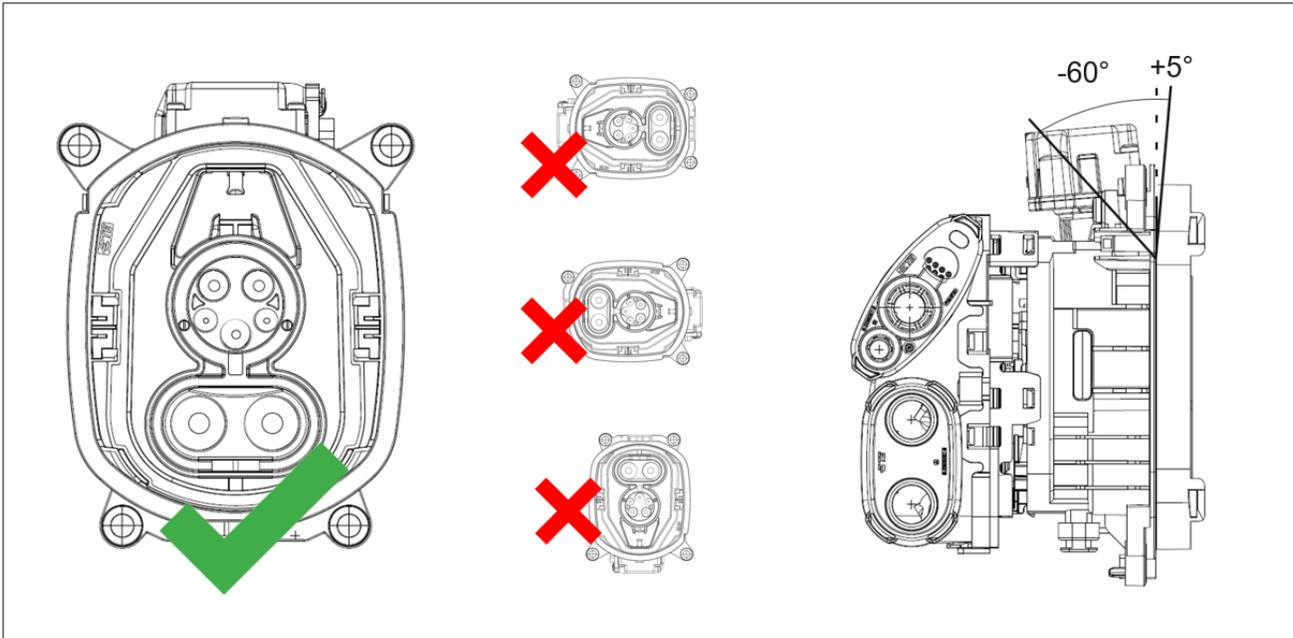
Actuator

see TE Actuator-Specification TE-108-94519

Installation

Orientation
Max. Angle

see picture below
180° -60°/+5°



3.4. Performance and Test Description

Specification	Description
ISO20653	IP67 – Fixed cable side (Rear Cover) IP55 – Water and Dust Protection (vehicle inlet mated)
IEC 62196-1:2014	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 1: General requirements
IEC 62196-2:2016	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories
IEC 62196-3:2014	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 3: Dimensional compatibility and interchangeability requirements for d.c.and a.c./d.c. pin and contact-tube vehicle couplers
Additional: selected tests of automotive standards LV124, LV214, LV215-2	

LTR	REVISION RECORD	DWN	APP	DATE
A	INITIAL DOCUMENT	M. MAENCHE	S. KUMAR	09 June 2020
A1	FORMAL CORRECTION	M. MAENCHE	S. KUMAR	11 June 2020
A2	PRODUCT RATINGS UPDATED	M. MAENCHE	S. KUMAR	11 Nov 2020
A3	PRODUCT RATINGS UPDATED	M. MAENCHE	S. KUMAR	29 Mar 2021
A4	INSTALLATION ANGLE UPDATED	M. MAENCHE	S. KUMAR	07 JUN 2021
A5	AMBIENT TEMPERATURE SPECIFIED	M. MAENCHE	S. KUMAR	14 SEPT 2021
A6	ELECTRICAL PROPERTIES ARE UPDATED	PRADEEP KUMAR K	FRANK WITTROCK	03 FEB 2023
A7	TEMPERATURE SENORING IS UPDATED IN PAGE 4	PRADEEP KUMAR K	PHILIPP KOWARSCH	09 MAY 2023
A8	TEMPERATURE SENSORING AND MECHANICAL PROPERTIES AND ENVIROMENTAL CONDITIONS ARE UPDATED IN PAGE 4	PRADEEP KUMAR K	FRANK WITTROCK	19 SEP 2023

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TITLE	Product Specification Vehicle Charge Inlet Type CCS 1		