
Class 1



Product Specification
AMP+ Charging Inlet Type 1
Generation 1

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1. SCOPE

1.1. Introduction

The TE AMP+ Charge Inlet is designed to charge battery electric and hybrid electric vehicles that comply with IEC-standard 62196, Type 1, with AC charge currents.

The content of this specification covers the technical characteristics, performance and test requirements for the EV CHARGE INLET Type 1.

When tests are performed the following specifications and standards shall be applied. 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
114-94163-1	CHARGE INLET, ASSY, Type 1, KIT
C-2177804	ACTUATOR LOCKING UNIT

Specifications

Specification	Description
114-94163-1	Application Spec. Vehicle Charge Inlet Type 1, general version

2.2. Other Documents

Norm and Standards	Description
IEC 62196-1: 2014/06	Plugs, Socket-outlets, Vehicle Connectors and Vehicle Inlets – Conductive Charging of Electric Vehicles - Part 1: General Requirements
IEC 62196-2: 2011/10	Dimensional compatibility and interchangeability requirements for AC pin and contact-tube accessories
IEC 61851-1: 2015/04	Electric Vehicle Conductive Charging System – Part 1: General Requirements
SAE1772: 2012/10	SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Coupler
IEC 20653: 2013/02	Road Vehicles – Degrees of Protection (IP code)
DIN EN 60664-1: 01/2008	Insulation Coordination for Equipment within Low Voltage Systems

3. PRODUCT CHARACTERISTICS

3.1. Design and Construction

The product has been designed for compatibility with the referred specifications and to withstand the environmental effects described there.

3.2. Material

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

3.3. Product Ratings

Dimensions and Configurations

Mating-Face Geometry
Cable Exit directions
Mounting interface to vehicle
Temperature Control with sensor

compatible with IEC 62196-2 Standard Sheet 2-I
see Drawing 114-94163-1
see Drawing 114-94163-1
One temperature sensors can be applied
see Drawing 114-94163-1
Consult TE Connectivity for measurement accuracy and temperature reading prior to setting up temperature control system!

Environmental Conditions

Operation temperature for charging process
Ambient temperature for application in vehicle
Protection degree

-40°C ... +50°C
-40°C ... +85°C
Front side: IP 44 (with mated Connector)
Rear side: IP44 (cabling and backside)
Water drain system for mating zone of inlet

Electrical Properties

Max. charging performance
Type of charging current
Number of AC-phases
Number and Type of Terminals
Rated current
Rated voltage
Signal pin rated current
Signal pin rated voltage
Type of signal transmission
Resistor coding

max. 7,68kW
AC
1
5 (PE, L1, L2/N, CP, CS)
max. 32A AC
max. 250V AC
2A
30V
Analog
2700Ω acc. IEC 61851-1

HV Insulation Coordination

Max. altitude for operation
Max. operation voltage
Dielectric withstand voltage
Pollution Degree
Insulation resistance of adjacent contacts

5000m above sea-level
500V
4000V
3
min. 200MΩ

Mechanical Properties

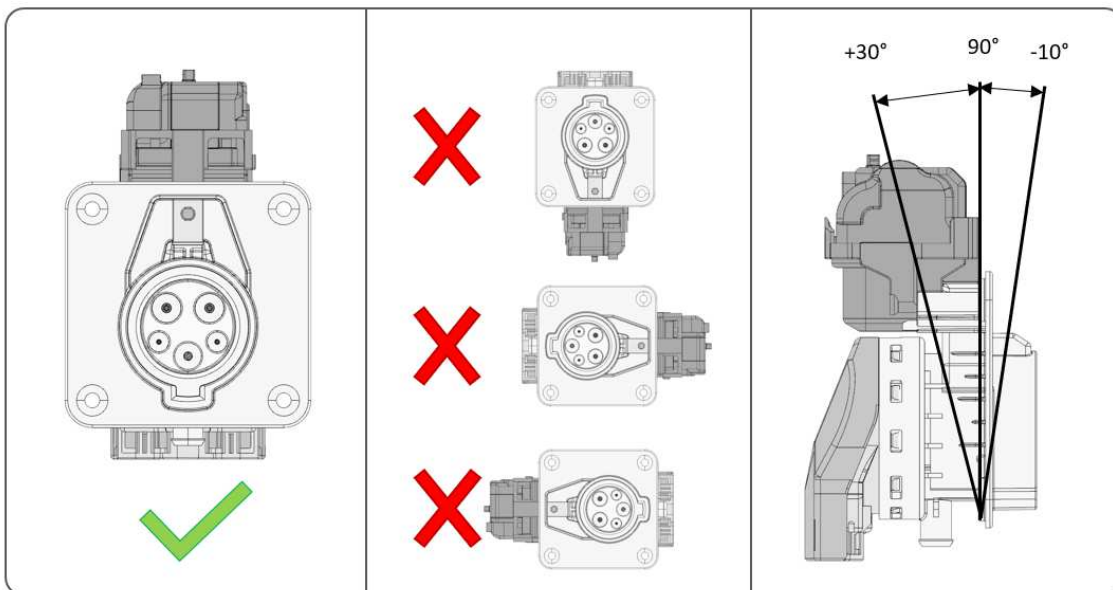
Mating / un-mating endurance	max. 10000 cycles
Connector mating force	typical <100N (depending on connector)
Connector retention force	typical <100N (depending on connector)
Mechanical Stability of charging socket	max. 400N vertically (Force applied 100mm from inlet front plane)
Vibration Level	LV214 PG17 Severity 2 (Body mount)
Protection degree	IPxxB (finger protection)

Connector Locking

Assembly position of locking unit	Top
Locking method	Pin travelling frontward to block connector latch
Lock confirmation signal switch	When reaching lock position
Operation voltage	9 ... 15,5V
For full specification see Actuator Locking Unit drawing C-2177804	

Installation

Orientation	see picture below
Max. Angle	90° +30° / -10°



LTR	REVISION RECORD	DWN	APP	DATE
A	INITIAL DOCUMENT	D. WEYRAUCH	F. WITTROCK	16 Apr 2021