ITT	Product Specification **IEC 62196 CCS TYPE 2 CONNECTOR** **DCI2-T2 DC CONNECTOR FOR CHARGING MODE 4**	**CAS21128E-CU**



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1 Scope

This product specification describes connectors dedicated to a DC charging system acc. to IEC 62196 combined charging system (CCS). The connector is intended for use in an infrastructure described by IEC 61851.

This specification doesn't describe the specific requirements for the infrastructure. Specification of Infrastructure could show requirements exceeding the requirements of IEC 62196-1 and IEC 62196-3 current revision.

The connector is designed for Mode 4, CCS charging systems for direct current up to 1000 V DC. The connectors can be used for both indoor and outdoor applications.



1.1 Intended Use

The connector has been designed and manufactured using state-of-the-art techniques and in accordance with approved safety regulations. Nevertheless, when not used as intended, risks for the user or third parties may still arise, or connector and other material assets may be damaged.
Intended use includes:

- Application within the stated performance limits
- Application when in efficient working order without any damage
- Application only in conjunction with designated vehicle inlets according to ICE 62196-1 and 62196-3
- Application only with infrastructure acc. to IEC 61851-1 and IEC 61851-23
- Connector not indented for mating and breaking under load
- Charging station manufacturers have to ensure lightning and surge protection in accordance with applicable product and safety standards

1.2 Related Documents

DOCUMENT No. / TITLE	DESCRIPTION
026727Y0010	DCI2-T2 current ratings 200 to 300 A – General customer drawing
CAS25131	DCI2-T2 current ratings 200 to 300 A – Instruction manual

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2 Normative References

STANDARD	TITLE
DIN EN 50363-10-2	Insulating, sheathing and covering materials for low voltage energy cables Part 10-2: Miscellaneous sheathing compounds - Thermoplastic polyurethane
DIN EN 50620	Electric cables - Charging cables for electric vehicles
DIN EN 60332-1	Tests on electric and optical fibre cables under fire conditions
DIN EN 60751	Industrial platinum resistance thermometers and platinum temperature sensors
IEC 60228	Conductors of insulated cables
IEC 61851-1	Electric vehicle conductive charging system - Part 1: General requirements
IEC 61851-23	Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station
IEC 62196-1	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 1: General requirements
IEC 62196-3	Plugs, sockets-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers
IEC 62893-4-1	Charging cables for electric vehicles of rated voltages up to and including 0,6/1 kV - Part 4-1: Cables for DC charging according to mode 4 of IEC 61851-1 - DC charging without use of a thermal management system
ISO IEC 15118-3	Road vehicles -- Vehicle to grid communication interface -- Part 3: Physical and data link layer requirements
UL746C	Polymeric materials - Use in electrical equipment evaluations
UL94	Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

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3 Part Number Configuration (Type Designation)

TALKING DOG DC CONNECTOR DCI2-T2 FOR MODE 4			
DC	Productline	**DC**	Direct current connector
I	Certification code	**I**	IEC 62196-1 certified at VDE* IEC 62196-3 certified at VDE*
2	Connector generation	**2**	Generation 2 of connector design
-		**-**	
T2	Connector type	**T2**	CCS Type 2 connector
-		**-**	
200	DC current rating	**200**	DC current rating at 200 Ampere
		250	DC current rating at 250 Ampere
		300	DC current rating at 300 Ampere
-		**-**	
U	Thermal management	**U**	Uncooled connector
BK	Color of housing	**BK**	Black
			Further colors upon request
-		**-**	
WWW	Cable length	**WWW**	Length in WWW x 0.1 m (3 digits) (E. G. 067 equals 6.7 m)
A	Cable type	**A**	Standard cable without power consumption measurement
		C	Standard cable with power consumption measurement
-		**-**	
050	mm² per DC contact	**050**	Connector with 50 mm² per DC contact (only for 200 A)
		070	Connector with 70 mm² per DC contact (only for 250 A)
		100	Connector with 100 mm² per DC contact (only for 300 A)
-*		**-**	*Omit for standard part number
000*	Mod code	**000 to 999**	Modification code given by engineering *Omit for standard part number

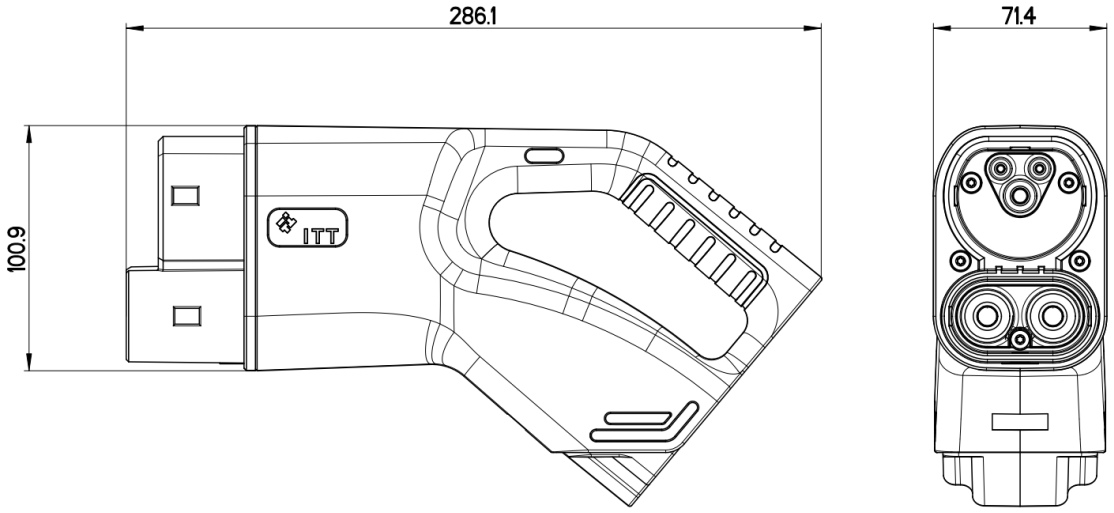
*For more details, see chapter 8.

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4 General Information

4.1 Connector Dimension



4.2 Connector Weight

CONNECTOR TYPE	CONNECTOR WEIGHT [g]	CABLE WEIGHT [g/m]
DCI2-T2-200-…	≈1184	≈1780
DCI2-T2-250-…	≈1283	≈2400
DCI2-T2-300-…	≈1409	≈2700

4.3 Materials

PART	MATERIAL / COLOR	PROPERTIES
Housing	Plastic / Black*	- UV-Resistance: f1 acc. to UL746C - Material Flammability class: UL94-V0
Rear housing	Plastic / Black*	
Mating face insulator	Plastic / Black	
Cable	TPE-U / Black (RAL 9005)	- Oil resistant (DIN EN 50363-10-2) - Flame-retardant (DIN EN 60332-1) - Halogen-free (IEC 62893)
Contact body	Silver plated copper tellurium or brass	-
Screws	Stainless steel A2	-

*Further colors upon request

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4.4 Cable and Wiring

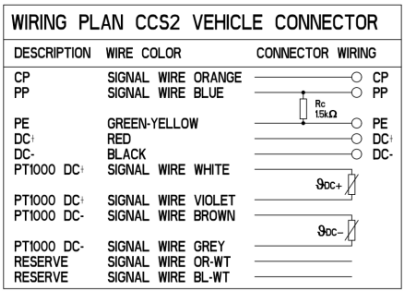
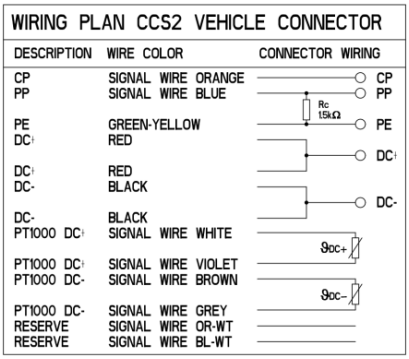
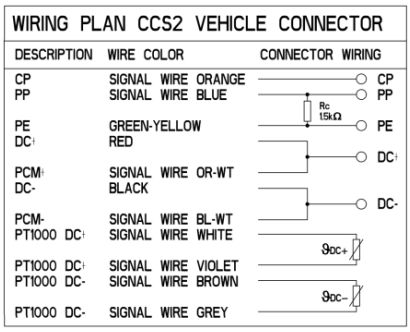
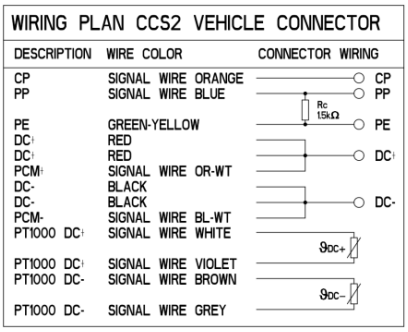
4.4.1 Cable

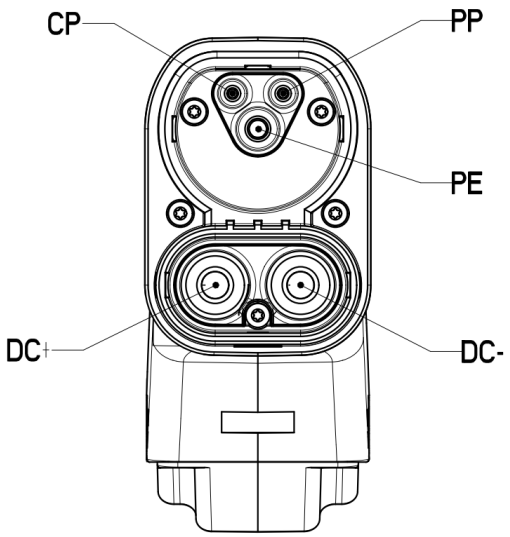
	CONNECTOR TYPE		
	DCI2-T2-200-…	**DCI2-T2-250-…**	**DCI2-T2-300-…**
CABLE TYPE	2×50+1G25+8×0.75	2×70+1G25+8×0.75	4×50+1G25+8×0.75
STANDARD	Based on DIN EN 50620 & IEC 62893-4-1		
CROSSSECTION POWER	50 mm²	70 mm²	2x50 mm²
CROSSSECTION PE	25 mm²	25 mm²	25 mm²
CROSSSECTION SIGNAL	0.75 mm²	0.75 mm²	0.75 mm²
STRANDING TYPE	Class 6 acc. to IEC 60228		
OUTER DIAMETER D	30 mm ±0.5 mm	33.9 mm ±0.5 mm	35.3 mm ±0.5 mm
BENDING RADIUS	≥ 10 x D flexing ≥ 4 x D static		
CABLE LENGTH	maximum cable length is 10 m • Cable management is required in certain regions if the cable length exceeds 5.0 m (Switzerland) or 7.5 m (USA) (IEC 61851-1:2017). • The signal transmission is dependent on the cable length. The cable capacity must therefore be assessed in the overall system of the charging station and must not exceed 3100 pF (IEC 61851-1:2017, Annex A, Table A.2, Note d). • Interference-free V2G communication is not guaranteed for cable lengths over 10 m (ISO IEC 15118-3:2015, A.11.3, Table A.11).		

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4.4.2 Wiring

	CONNECTOR TYPE	
	DCI2-T2-200-… DCI2-T2-250-…	DCI2-T2-300-…
WIRING DIAGRAM WITHOUT POWER CONSUMPTION MEASUREMENT		
WIRING DIAGRAM WITH POWER CONSUMPTION MEASUREMENT		



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4.5 Special Features

POWER CONSUMPTION MEASUREMENT	Connector marked with type designation DCI2-T2-…-…-…-…**C**-… is required. The voltage over the two power contacts can be measured via the extra signal wires. Power consumption can be calculated and displayed by the charging station manufacturer.
MATING FACE EXCHANGEABILITY	In case of damage, the mating face insulator can be replaced by loosening 5 screws as shown in following picture. For more information about the exchange please use the instruction manual. 

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5 Electrical Characteristics

	CONNECTOR TYPE		
	DCI2-T2-200-…	**DCI2-T2-250-…**	**DCI2-T2-300-…**
OPERATING VOLTAGE	1000 V DC	1000 V DC	1000 V DC
RATED CURRENT ACC. TO IEC 62196-3	200 A DC	250 A DC	300 A DC
CHARGING POWER ACC.TO IEC 62196-3	200 kW	250 kW	300 kW
BOOST CURRENT	Up to 350 A DC*	Up to 500 A DC*	Up to 500 A DC*
BOOST CHARGING POWER	Up to 350 kW*	Up to 500 kW*	Up to 500 kW*
INSULATION RESISTANCE	5 MΩ acc. to IEC 62196-1		
DIELECTRIC STRENGTH	3 kV acc. to IEC 62196-1		

*Depending on configuration and ambient conditions. Refer to instruction manual.

5.1 DC-Power-Contact Rating

	CONNECTOR TYPE		
	DCI2-T2-200-…	**DCI2-T2-250-…**	**DCI2-T2-300-…**
CONTACT	DC+, DC-		
RATED VOLTAGE	1000 V DC		
RATED CURRENT ACC. TO IEC 62196-3	200 A DC	250 A DC	300 A DC

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5.2 Signal-Contact Rating

	CONNECTOR TYPE		
	DCI2-T2-200-…	DCI2-T2-250-…	DCI2-T2-300-…
CONTACT	PP, CP		
RATED VOLTAGE	30 V AC		
RATED CURRENT ACC. TO IEC 62196-3	2 A		

5.3 PE-Contact Rating

	CONNECTOR TYPE		
	DCI2-T2-200-…	DCI2-T2-250-…	DCI2-T2-300-…
CONTACT	PE		
TESTED I^2t VALUE ACC. TO IEC 62196-3	~36.000.000 A^2s (2450 A for 6 s)		

5.4 Temperature Sensing

SENSOR TYPE	Pt1000
SENSOR TOLERANCE	Class B acc. to DIN EN 60751
POSITION OF SENSOR	Contact crimp DC+ and DC-
INTERVENTION TEMPERATURE	For information about intervention temperature please refer to instruction manual

5.5 Temperature Rise

Please consult factory for detailed information.

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6 Mechanical Characteristics

MATING CYCLES	>10000 *
MATING FORCE	<100 N *
UNMATING FORCE	<100 N *

*for test details see IEC 62196-1

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7 Environmental Characteristics

AMBIENT TEMPERATURE	-30 °C to +40 °C acc. to IEC 62196-3 Max. 50°C under certain conditions, current reduction might be necessary
STORAGE AND TRANSPORTATION TEMPERATURE	-40 °C to +80 °C
DEGREE OF PROTECTION	IP44 in mated condition with vehicle inlet in accordance with IEC 62196-3 IP24 for non-mated connector
ALTITUDE LEVEL	Up to 4000 m above sea level

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8 Product Compliance Certificate

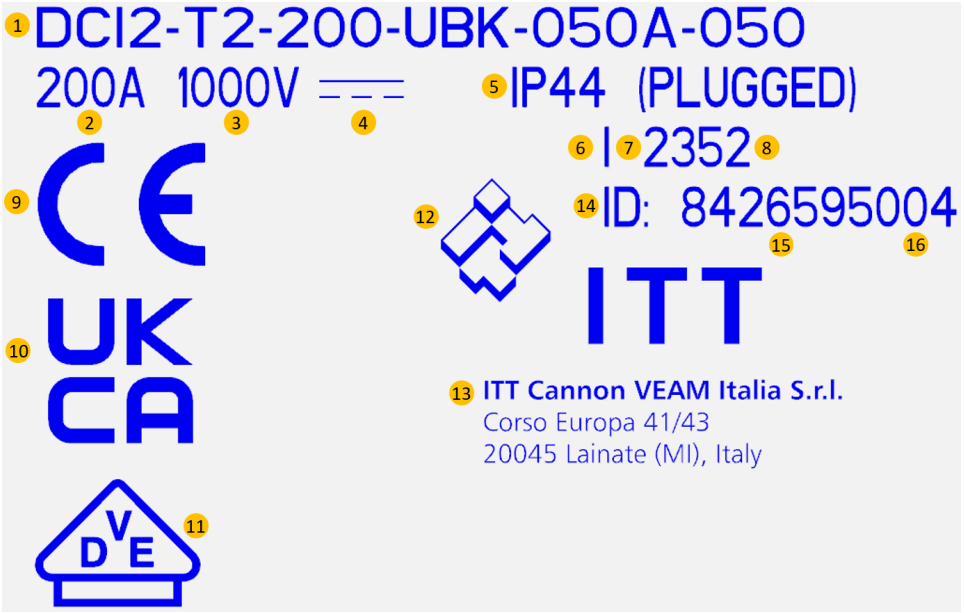
STANDARD	TYPE	CERTIFICATE	CERTIFIED PRODUCT
EN 62196-1:2014 EN 62196-3:2014 IEC 62196-1:2022 IEC 62196-3:2022	VDE Mark	40057803	DCI2-T2-200-… DCI2-T2-250-…

LINK	https://www2.vde.com/en/Institute/OnlineService/VDE-approved-products/Pages/Online-Search.aspx
SEARCH TYPE	Search without reference number
SEARCH FIELD: COMPANY	ITT Cannon GmbH
SEARCH FIELD: TYPE	DCI2

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9 Declaration of Conformity

9.1 Certification Markings and Identification



Marking	Description
1	Type designation
2	Current rating (max. operating current)
3	Voltage rating (max. operating voltage)
4	Direct current symbol
5	Ingress protection class
6	Production site identification (I = Italy)
7	Production year (2 digits)
8	Production week (2 digits)
9	CE-mark
10	UKCA-Mark (UK Conformity Assessed)
11	VDE certification mark*
12	ITT logo
13	Company address
14	Serial number (10 digits)
15	Work order number (first 7 digits of serial number)
16	Incremental number inside one work order (last 3 digits of serial number)

*For more details, see chapter 8.

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9.2 RoHS

Connector fulfills the requirements of Directive 2011/65/EU (RoHS). For official statement consult factory.

9.3 CE Declaration of Conformity

For official statement consult factory.

9.4 UKCA Declaration of Conformity

For official statement consult factory.

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10 Document Revision Record

REVISION	DATE	COMMENTS
-	19/01/2024	Initial release

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