

cannon

Liquid Cooled CCS1 & CCS2 High Power Charging Solutions



ITT

ENGINEERED FOR LIFE

We Connect

The future of e-mobility

Drawing upon 100 years of interconnect excellence and almost a decade of innovation in the Electric Vehicle industry, ITT Cannon represents a committed partner to today's e-mobility industry, bringing connection solutions to the market that are truly Engineered for Life.

Global solutions for the EV industry

The ITT difference

- Proven application expertise
- Global capabilities & local support
- Unrivalled customization expertise
- A committed innovator & business partner

About ITT

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries. For more information visit www.itt.com



Liquid Cooled CCS1 and CCS2 High Power Charging Solutions

As a leader in global EV connector and charging solutions ITT Cannon has developed an innovative liquid cooled High Power Charging (HPC) solution comprised of connector, cable and cooling unit. Available in CCS1 and CCS2 variants, and with 10,000 mating cycles, the solution enables charging up to 500A at 1,000V which can potentially deliver 60miles / 100km of charge to an electric vehicle within three to five minutes.

The dielectric cooling liquid in the HPC solution cools both the cable and the connector's contact system resulting in extremely effective heat dissipation. This results in a weight optimized cable design and minimized cable diameter – delivering a highly flexible, ergonomic and easy-to-use solution for the global e-mobility market.

Developed from specific industry requirements for next generation charging, ITT Cannon's HPC solution is a modular design that both meets today's preliminary standards and can be quickly adapted as standards develop. This flexibility also enables customization of solutions for specific applications.



CCS1



CCS2

Key features

- Enables charging up to 500A at 1,000V
- CCS1 and CCS2 variants
- Dielectric liquid cooled cable, connector and contacts
- Minimized cable diameter and weight
- Ergonomic, flexible and easy to use
- Simple to install and service in-field
- 10k mating cycles

The innovative connector design utilizes two canted coil springs for contact redundancy which creates multiple contact zones and requires minimal mating forces. Combined with the IP protected liquid cooled design, that utilizes an environmentally friendly, clear, colorless and low-odor hydrofluoroether, the solution delivers outstanding heat dissipation performance.

Technical Overview



CCS1



CCS2

Environmental	
Ambient Temperature	-30°C to 50°C (operation)
Mating Cycles	10,000
IP Rating	Mated condition: IP44 / IPXXD Unmated condition: IP24 / IPXXB UL, NEMA enclosure type 3
UV Resistance	f1 acc. to UL746C for housing and insulator material

Electrical	
Electrical Rating	- Voltage: 1000 V d. c. max. - Amperage: up to 500A (depending on the cooling unit)

Standards	
- Based on UL2251 and CSA C22.2 No.282. - Approved by Intertek.	

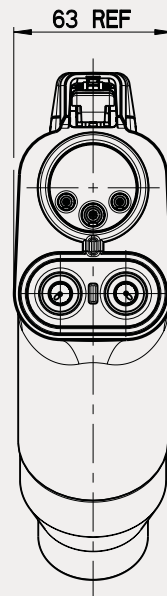
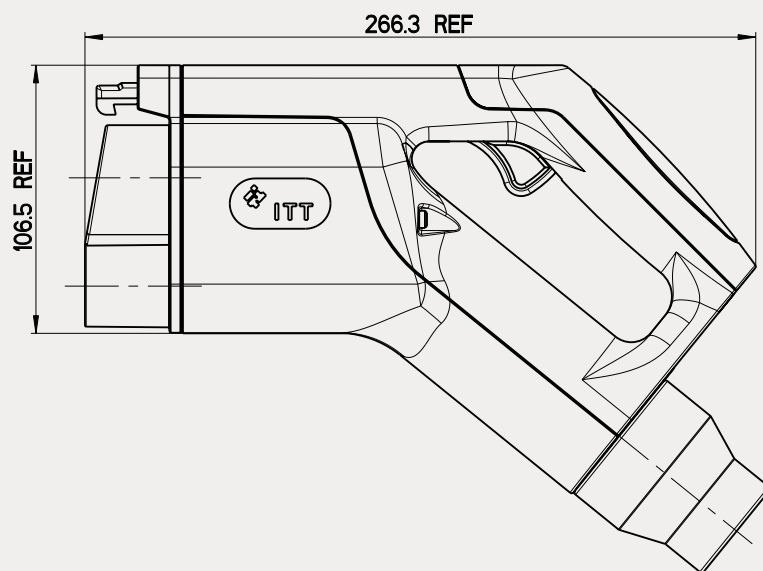
Environmental	
Ambient Temperature	-30°C to 50°C (operation)
Mating Cycles	10,000
IP Rating	Mated condition: IP44 / IPXXD Unmated condition: IP20 / IPXXB
UV Resistance	f1 acc. to UL746C for housing and insulator material

Electrical	
Electrical Rating	- Voltage: 1000 V d. c. max. - Amperage: up to 500A (depending on the cooling unit)

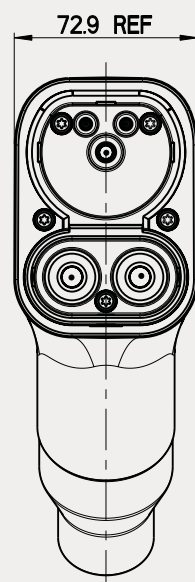
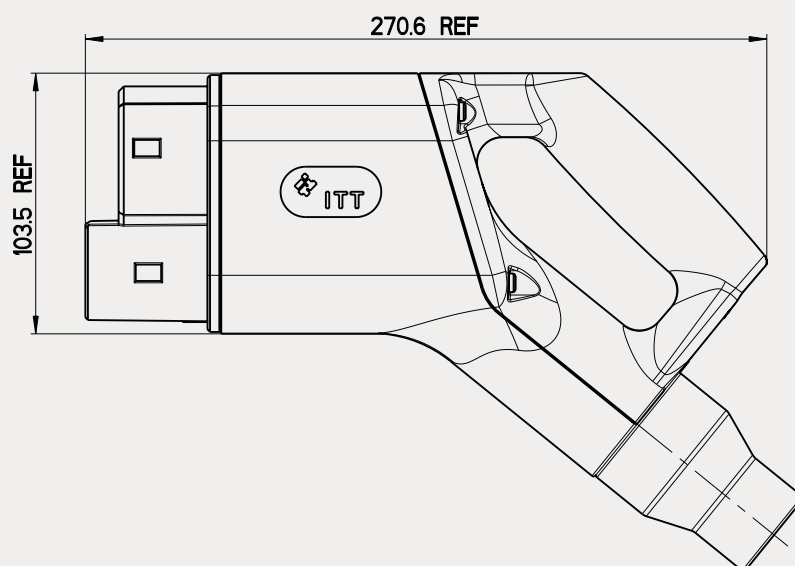
Standards	
- Based on VDE-AR-E 2623-5-3 and IEC62196-3. - Approved by VDE.	

Cooling unit (Application of cooling unit is customizable and data below is illustrative)		
	Coolant Volume	1.5l/min with 6m cable
	Refrigerant	0.5kg of R134a
	Coolant	3M™ Novec™ Engineered Fluid
	Dimensions (W x L x H)	415 x 200 x 550 mm
	Usage temperature range	-30 °C to +45 °C

Dimension Drawings



CCS1



CCS2

All dimensions are in mm

How to order

CCS2-

HPC-

033-

17

T-

B-

MMM

Type

Series

System cable length in dm (3 digits)

Single wires length in dm (2 digits)

Single wires termination

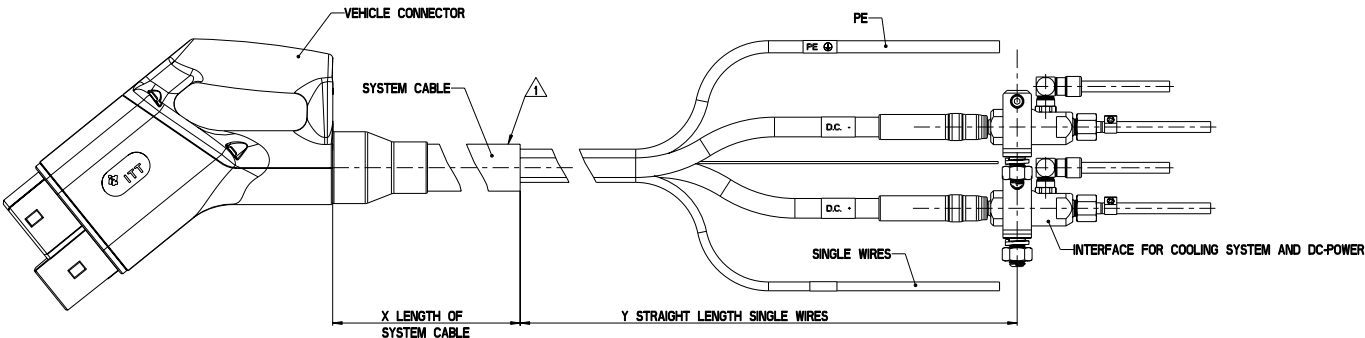
Type of cable retention

Modification code (only if applicable)

Example Part number explanation
 CCS2-HPC-033-17T-B = CCS2, High Power Charging, 3.3m system cable, 1.7m single wires, cable retention type B.

Explanation

Type CCS1 (US market) CCS2 (EU market)	System cable length XXX - Length in decimeters (dm)	Single wires termination T - Terminated
Series HPC -High Power Charging	Single wire length YY - Length in decimeters (dm)	Cable retention B - Straight cable retention



Cable Retention

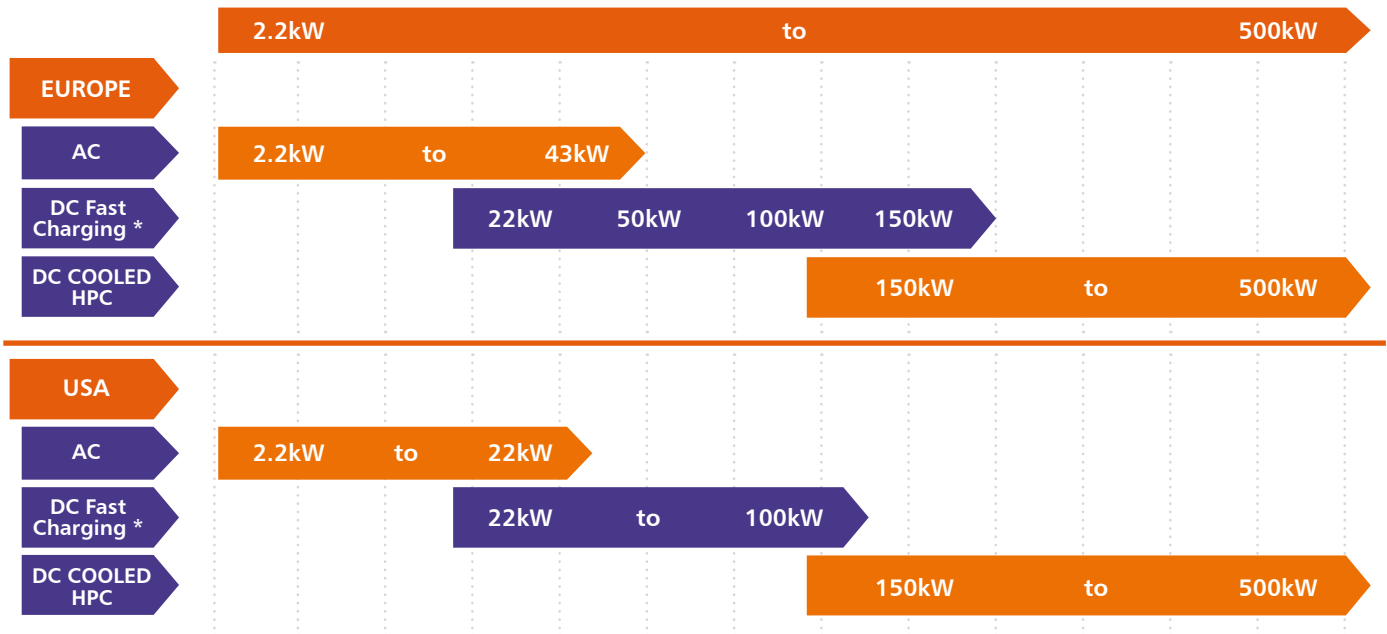
Type B

Straight cable retention



Portfolio Performance

The new HPC liquid cooled solution joins ITT Cannon's existing global range of AC charging solutions and with the addition of our CCS1 and CCS2 un-cooled Fast Charging connectors the range is becoming one of the most extensive available today. With vehicle and EVSE solutions for Europe, North America and Asia and an industry amperage range from 10A to 500A it is a portfolio to meet the exacting needs of the e-mobility industry both today and into the future.



*Coming soon

Global AC Charging solutions from ITT Cannon

ITT Cannon's class leading UL and CE certified AC connectors, plugs, inlets, outlets and accessories offer recognized, trusted and proven charging solutions for today's e-mobility markets. Built in accordance with all key regional standards - IEC 62196 for Europe, SAE J1772 for the Americas and Japan and GB/T 20234 for China they provide a truly global portfolio. With an industry leading amperage range from 10A to 80A, single and triple phase variants, low contact resistance and 10k mating cycles we have solutions for any requirement. In addition to off-the-shelf solutions, our AC portfolio is fully customizable to meet specific requirements by offering variants in colors, cables, harnesses and terminals.



Key features of ITT Cannon's AC EV solutions

- Cable options certified and approved to regional requirements
- Sealing to meet and exceed specifications
- Up to 80A AC Charging option
- Low contact resistance
- 10k mating cycles
- Connector and plug strain relief provides protection from cable overstressing

The Gen2+ Contact System for AC solutions

ITT's new Gen2+ contact system utilizes a state of the art canted coiled spring design that delivers extended lifetime usage and minimizes mechanical stress, misalignment and power loss.

Connect with your ITT Cannon representative today
or visit us at www.ittcannon.com

Connect with the experts

ITT Cannon is a world leader in the design and manufacture of highly engineered solutions for global e-mobility markets.



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