

cannon

Liquid Cooled CCS1 & CCS2  
High Power Charging  
Solutions



**COSY**  
CONNECTOR SYSTEMS

A  COMPANY



**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](http://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 a minimum of 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 and finalize charging. This flexibility also enables customization of solutions for specific applications.



CCS1



CCS2

## Key features

- Enables charging up to 500A at 1,000V
- CCS 1 and CCS 2 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
- Minimum 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 cooling design that utilizes an environmentally friendly clear, colorless and low-odor hydrofluorether the solution delivers outstanding heat dissipation performance.

# Technical Overview



CCS1

Material	
<b>Housing</b>	PBT-PC, grey
<b>Mating Face</b>	PBT, black, 25% fiberglass
<b>Handle</b>	PBT-PC, grey
<b>Trigger</b>	PBT, black, 25% fiberglass

Environmental	
<b>Ambient Temperature</b>	-30°C to 50°C (operation)
<b>Mating Cycles</b>	+10,000
<b>IP Rating</b>	Mated condition: IP44 / IPXXD Unmated condition: IP21 / IPXXB
<b>UV Resistance</b>	f1 acc. to UL746C for housing and insulator material

Electrical	
<b>Electrical Rating</b>	- Voltage: 1000 V d. c. max. - Current: 400A or 500A depending on cooling unit - Electrical rating only valid with running cooling system



CCS2

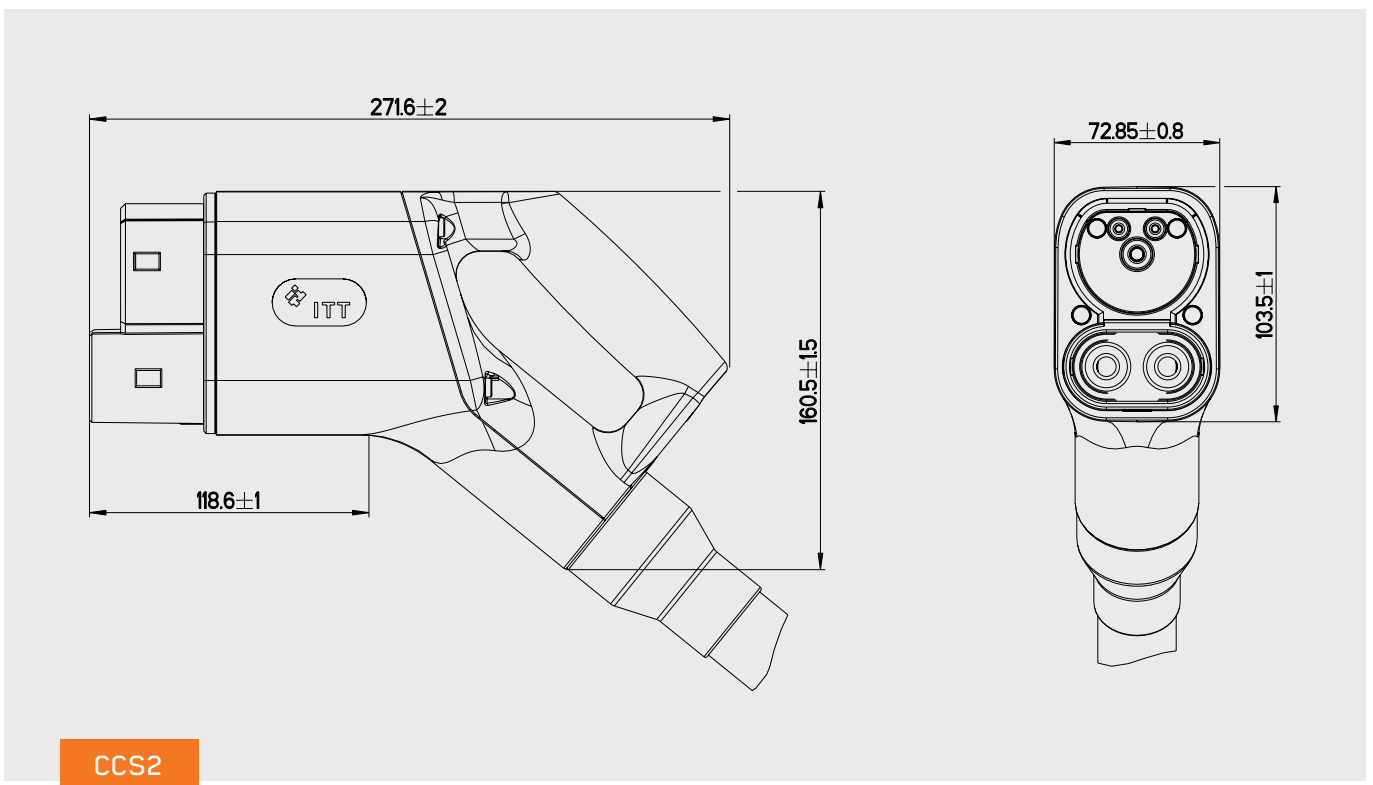
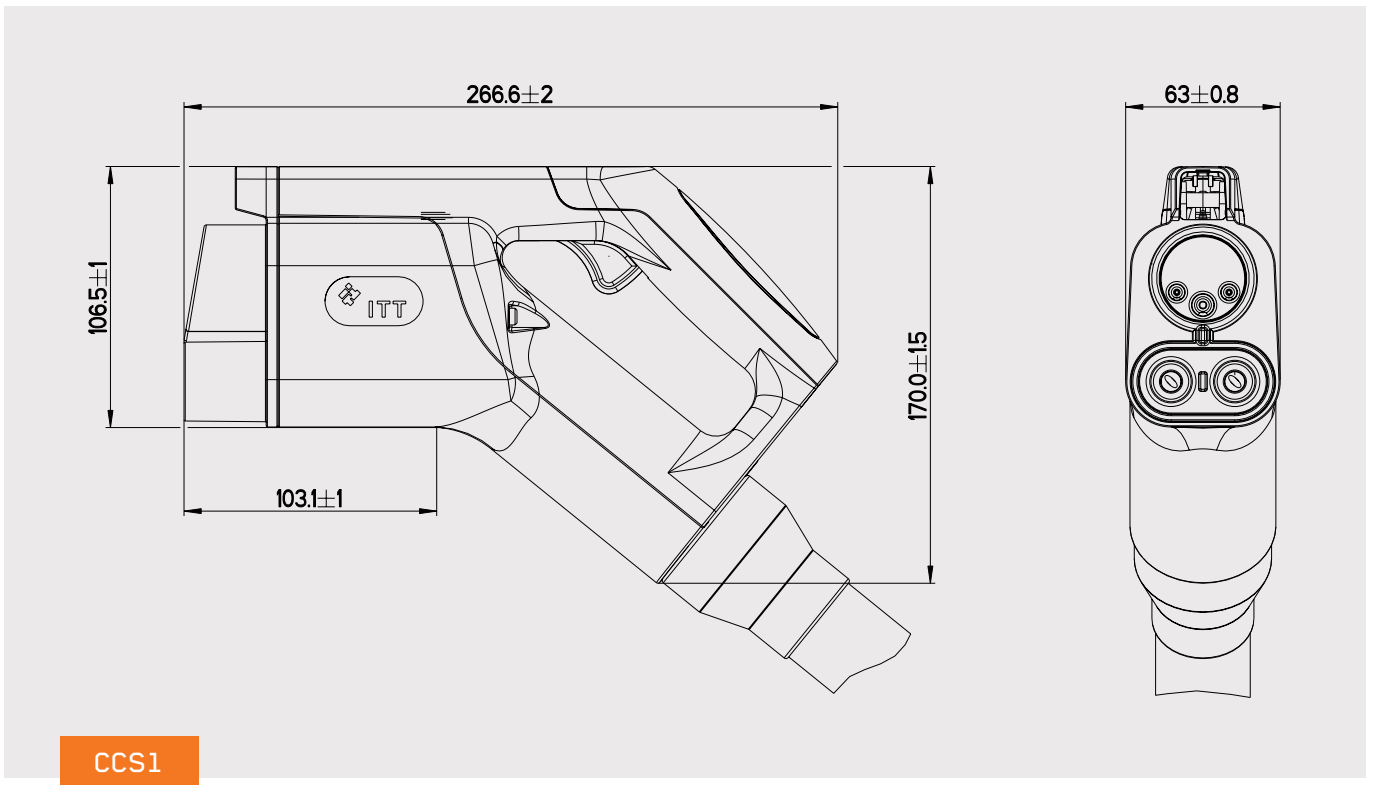
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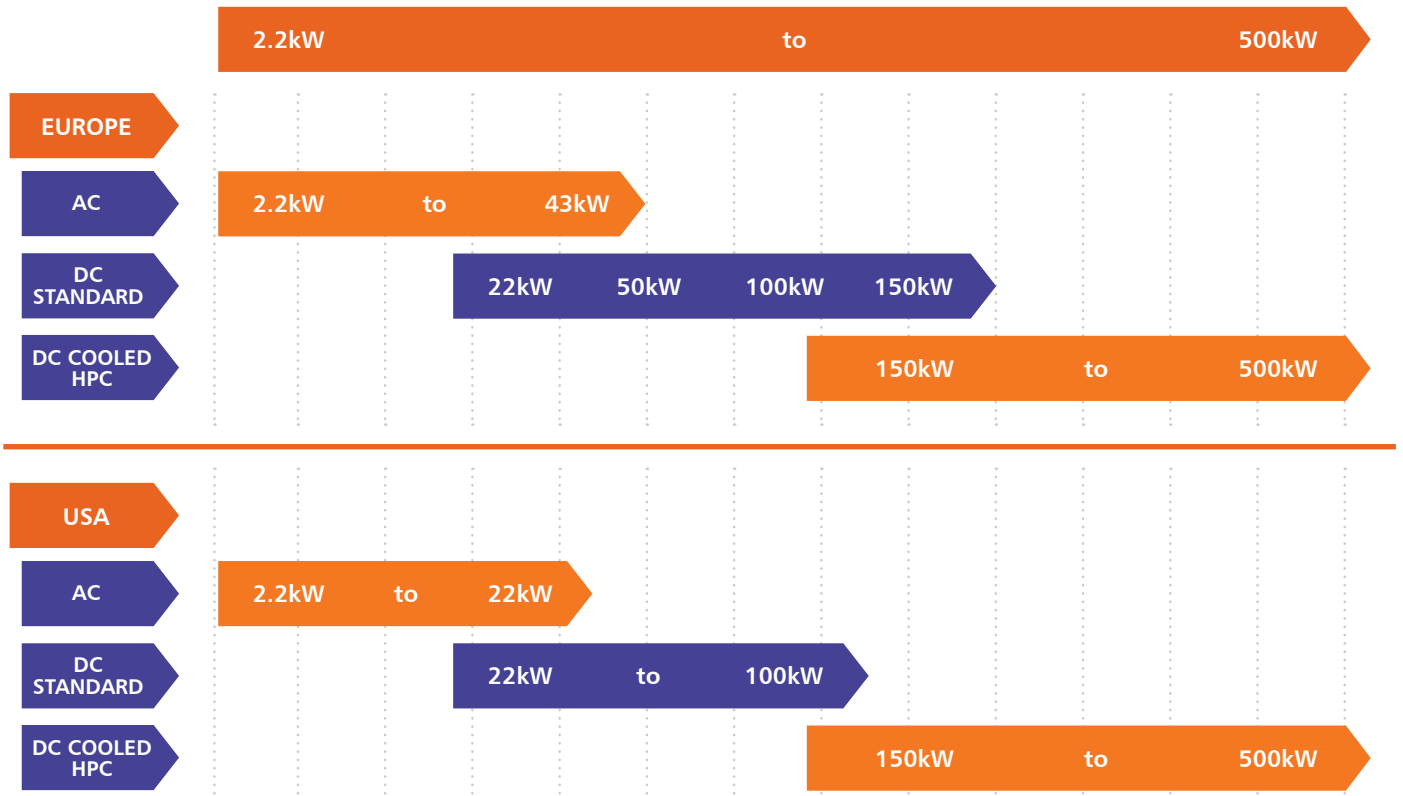
# Dimension Drawings



All dimensions are in mm

# 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 non-cooled standard power charging connectors the range becomes 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.



## 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 a minimum of 10k mating cycles we have solutions for any requirement.

In addition to off the shelf solutions our AC offering is fully customizable to meet specific requirements and we are able to offer variants on colors, cables, harnesses and terminals.

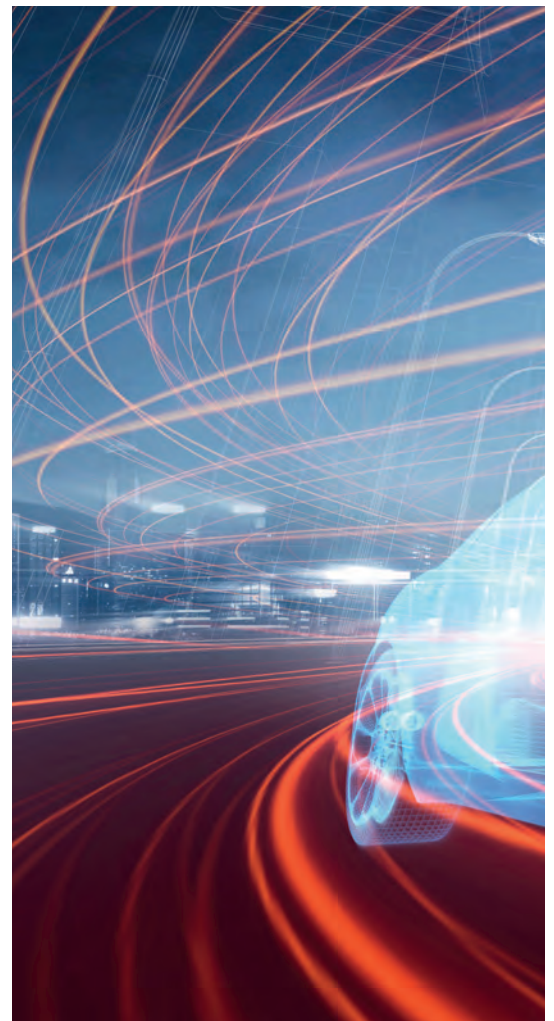


### Key features of ITT Cannon's AC EV solutions

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

### 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](http://www.ittcannon.com)

**COSY**

CONNECTOR SYSTEMS

A  COMPANY

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## Connect with the experts

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



ENGINEERED FOR LIFE

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