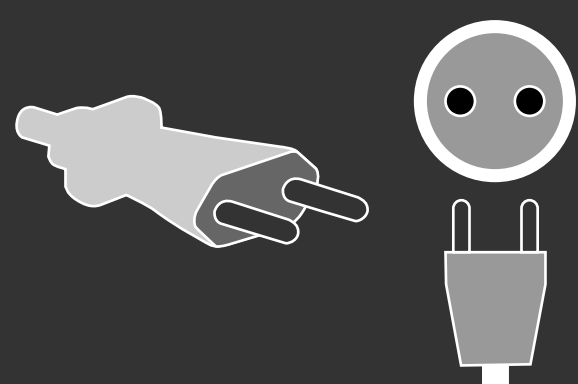




Plug-In Around the EV World

Standard Plug Types:

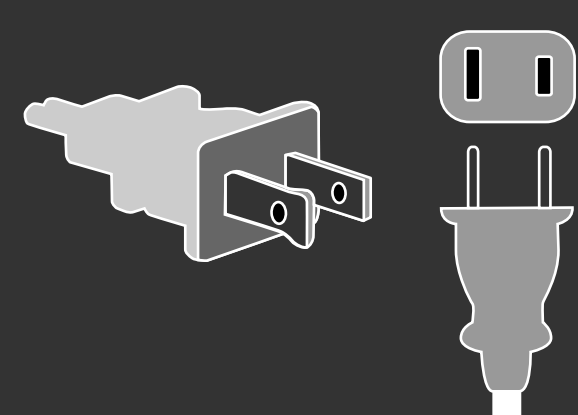
CEE 7/16



CEE 7/16 electrical plug (aka Europlug) is a two-wire plug that has two 4.0 – 4.8 mm round pins. It fits into any socket that accepts the round contacts on 19 mm centres. They work with type E, F, J, K or N sockets.

CEE 7/16 plugs:
Amps: 2.5
Volts: 110-240
Hz: 50-60

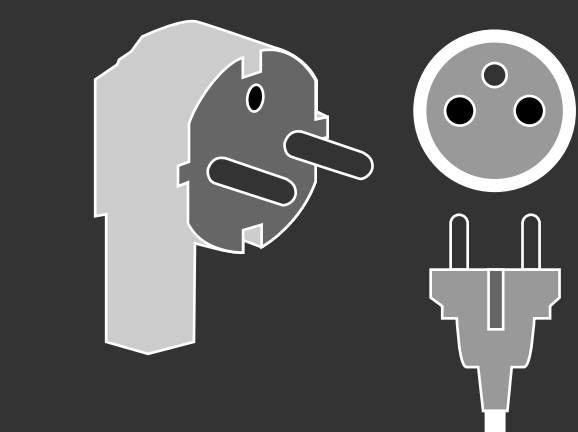
NEMA 1-15



NEMA 1-15 electrical plug (or flat blade attachment plug) is an ungrounded plug with two flat parallel pins. Japanese plugs can be used in the US but often not the other way around.

NEMA 1-15/ Type A plugs:
Amps: 15
Volts: 125
Hz: 50-60

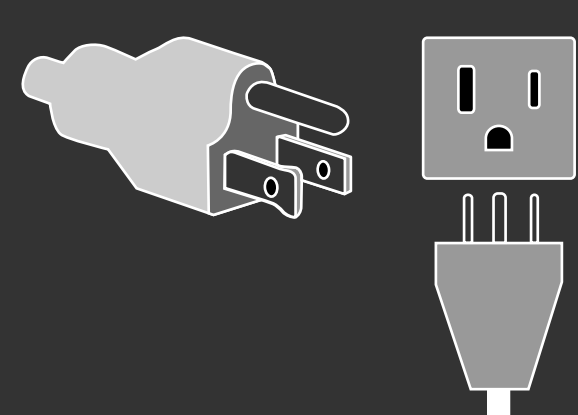
CEE 7/7



CEE 7/7 electrical plug has two 4.8 mm round pins spaced 19 mm apart and a hole for the socket's male grounding pin. The CEE 7/7 plug works with most E and F outlets.

NEMA 1-15/ Type A plugs:
Amps: 16
Volts: 110-240
Hz: 50-60

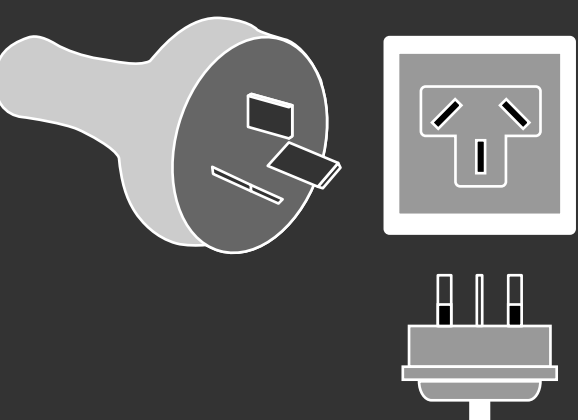
NEMA 5-15



CEE 7/7 electrical plug has two 4.8 mm round pins spaced 19 mm apart and a hole for the socket's male grounding pin. The CEE 7/7 plug works with most E and F outlets.

NEMA 1-15/ Type A plugs:
Amps: 16
Volts: 110-240
Hz: 50-60

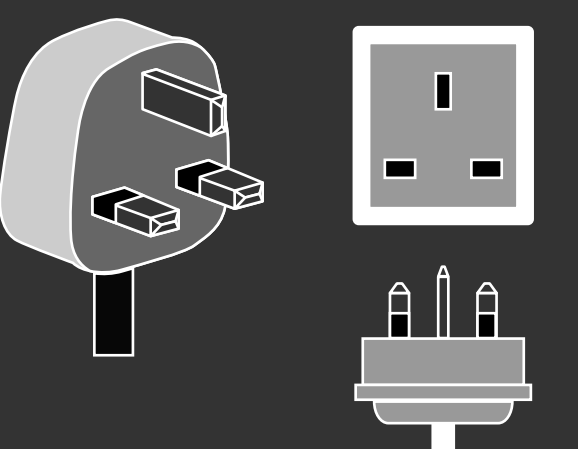
Type I



The Type I plug has two flat pins in a V-shape as well as a grounding pin. A version of the plug, which only has the two flat pins, exists as well. The Australian plug also works with sockets in China.

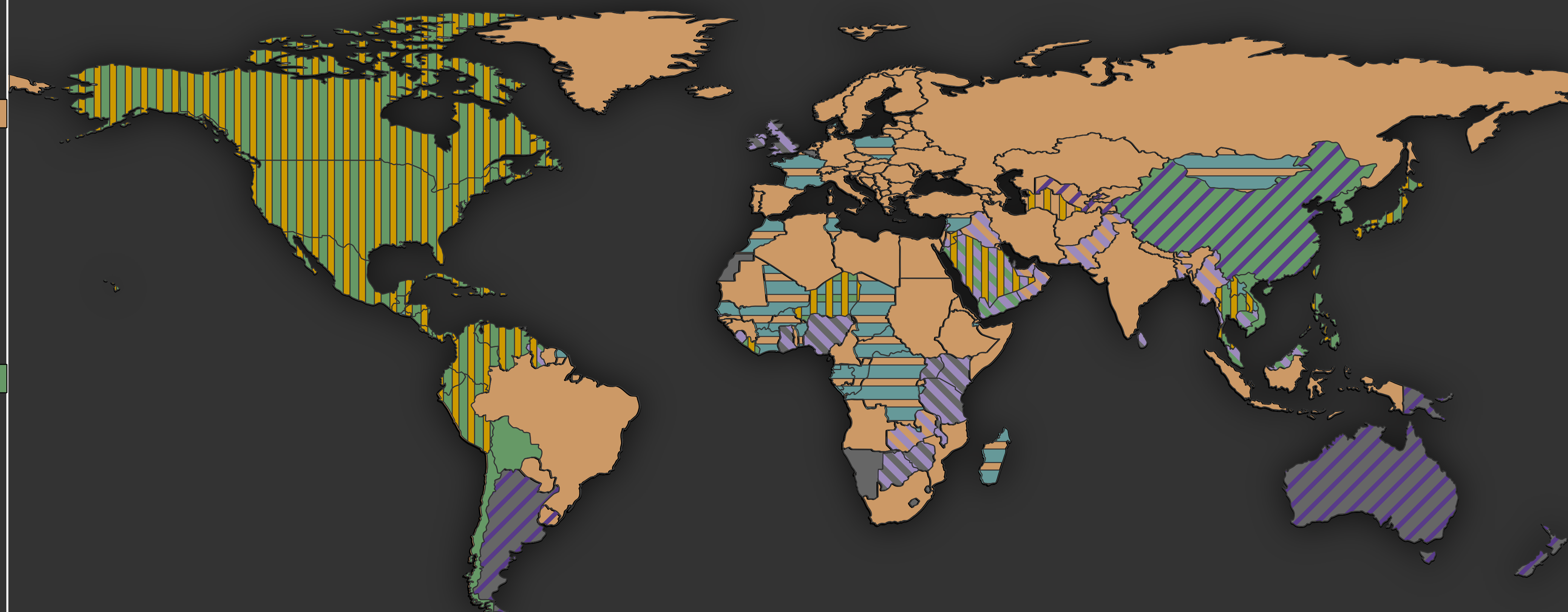
Type I plugs:
Amps: 10-15
Volts: 120-240
Hz: 50-60

Type G



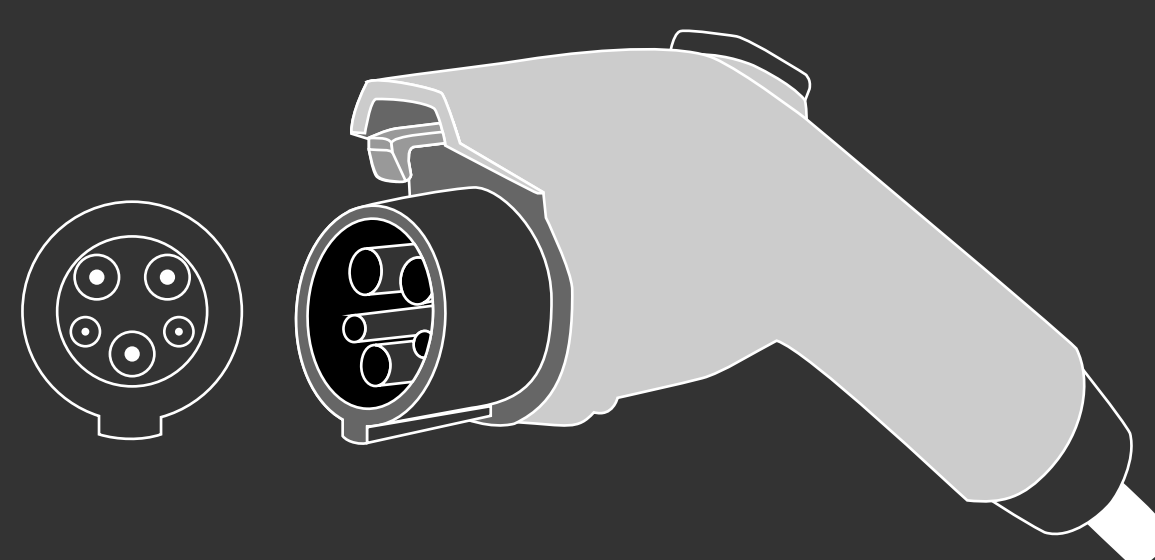
The Type G electrical plug has three rectangular blades in a triangular pattern and has an incorporated fuses (for smaller appliances such as a computer and 13 amps for heavy duty appliances).

Type G plugs:
Amps: 3-13
Volts: 110-240
Hz: 50-60



Common Connector Types:

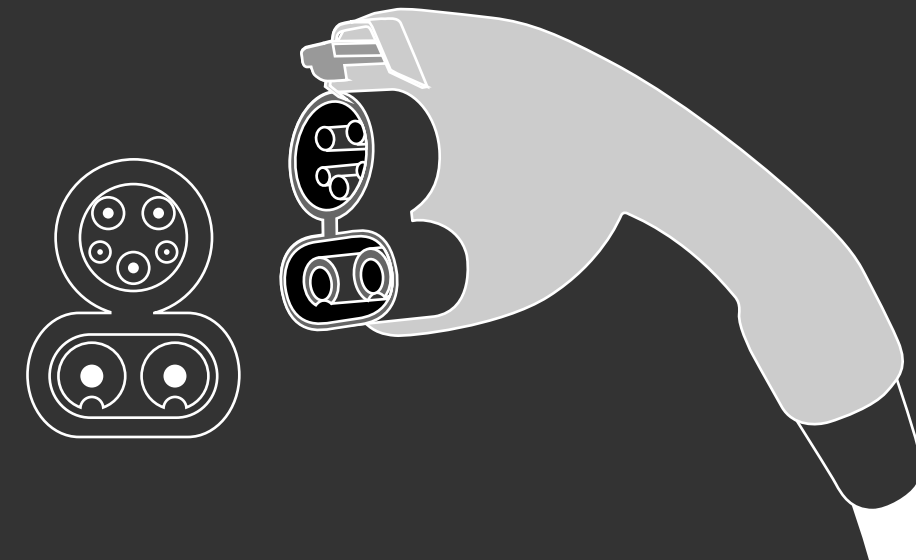
SAE J1772



The SAE J1772-2009 connector is designed for single phase electrical systems with 120 V or 240 V such as those used in North America and Japan. The round 43 millimetres (1.7 in) diameter connector has five pins, with three different pin sizes. (AC Line 1, AC Line 2, Ground Pin, Proximity Detection, Control Pilot). Approximating one connector/disconnection cycle daily, the average connector's lifespan should be just over 27 years.

Connector: SAE J1772
Amps: 16-80 amps
Volts: 120-240
Current: 1.92-19.20 kW
Charge Level: 1 and 2

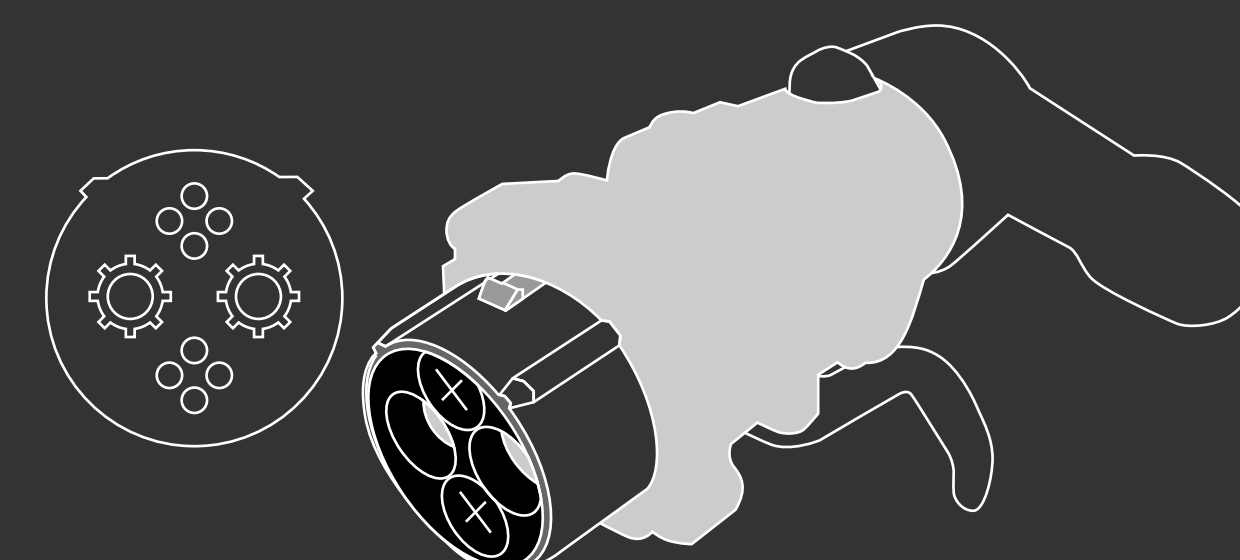
SAE J1772 DC CCS Combo 1 Connector Type 1



The SAE J1772 Combined Charging System (CCS) is designed for direct current electrical systems with 200 V or 500 V such as those used in America and Japan. The 66.8 X 119 millimetres connector has ten pins, with two different pin diameters. (AC Line 1, AC Line 2, Ground Pin, Proximity Detection, Control Pilot, DC power+, DC power-).

Connector: SAE J1772 Combined Charging System Type 1
Amps: 200 A
Volts: 200 - 600 V DC
Current: 125 kW (maximum current)
Charge Level: 3

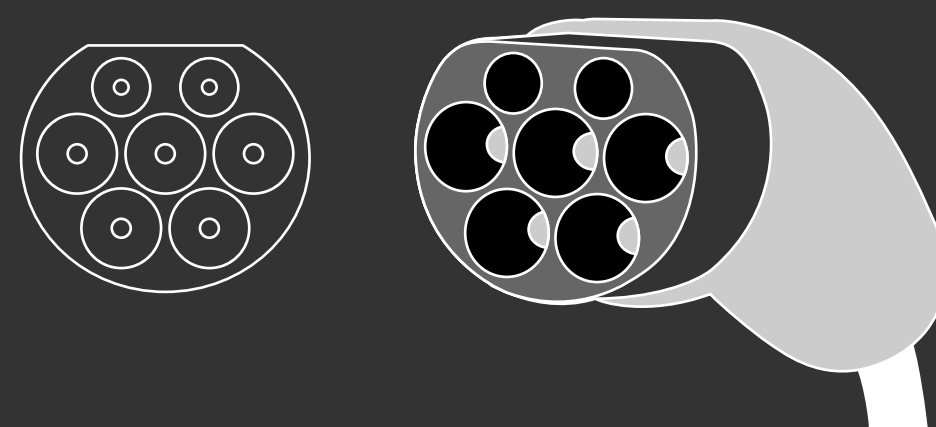
Chademo Yazaki Connector



The Yazaki Chademo connector is designed for direct current electrical systems with 250 V or 400 V such as those used in some European countries and America. The 77 millimetres diameter connector has ten pins, with two different pin diameters. (Reference GND for insulation, control EV relay [1 of 2], N/A [not all pins are used], ready to charge control, Power line-negative, Power line-positive, proximity detection, Communication+, Communication-, Control EV relay [2 of 2]).

Type: Chademo Yazaki connector
Amps: 120 A
Volts: 500 V DC
Current: 60 kW (maximum current)
Charge Level: 3
Charge Mode: 4

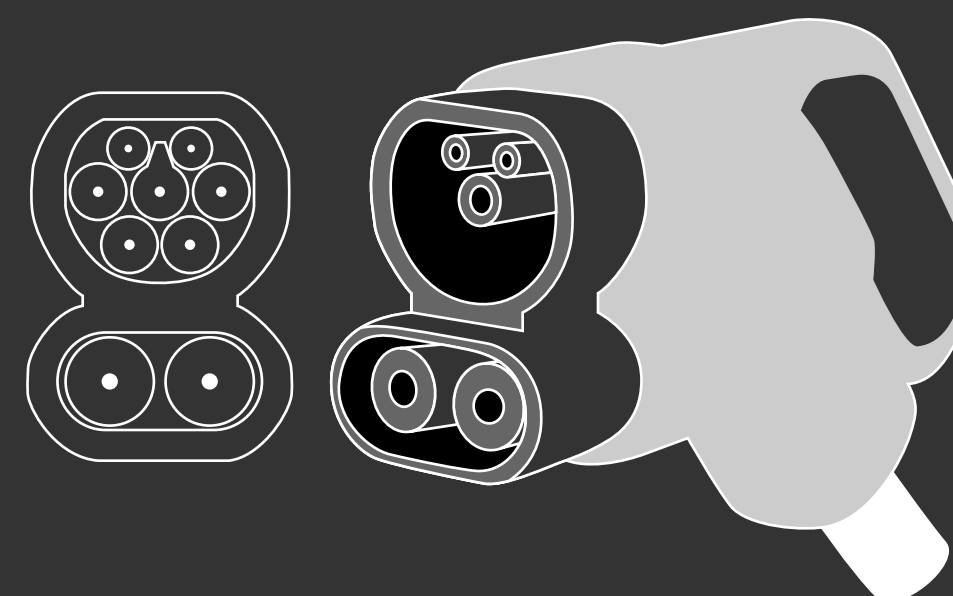
IEC 62196 Type 2



The IEC 62196 Type 2 connector is designed for single/three phase electrical systems ranging from 250 V or 400 V such as those used in Europe. The 55-68 millimetres diameter connector has seven pins, with two different pin diameters. (AC Line 1, AC Line 2, AC Line 3, Neutral, Proximity Detection, Control Pilot, Connection Confirmation).

Connector: IEC 62196 Mennekes Type 2
Amps: 63 A Single to Three Phase
Volts: 250 V - 400 V Single to Three phase
Current: 22 kW (maximum current)
Charge Mode: 1 and 2

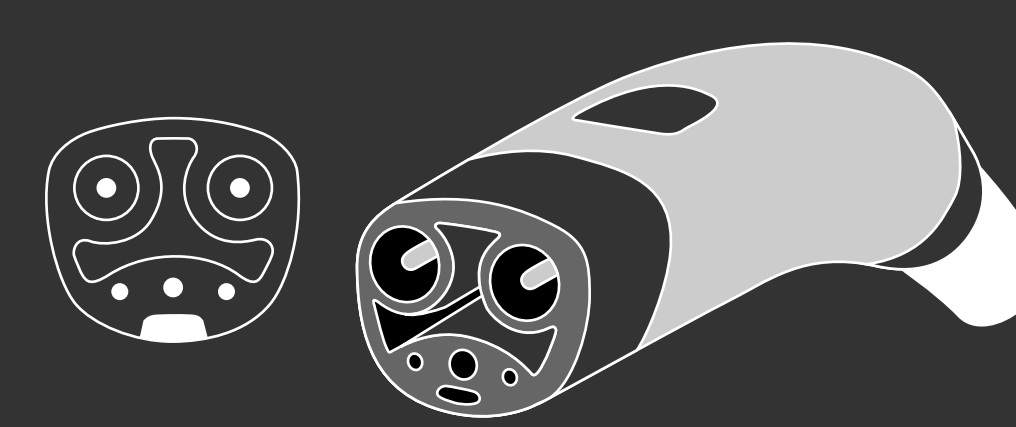
EU DC CCS Combo 2 Connector Type 2



The IEC 62196-3 Type 2 Combined Charging System (CCS) Combo 2 Connector is designed for direct current electrical systems with 200 V or 500 V such as those used all over the world, especially in EU. The connector has five pins, with three different pin diameters. (Ground Pin, Proximity Detection, Control Pilot, DC power+, DC power-).

Connector: EU DC CCS Combo 2 Connector IEC 62196-3 Type 2
Amps: 65 A - 200 A
Volts: 200 - 500 V DC
Current: 13 kW - 170 kW (maximum current)
Charge Mode: 2 - 4

Tesla Charging Connector



The Tesla connector is designed for single/three phase electrical systems ranging from 110 VAC or 480 VDC such as those used around the world. The connector has five pins, with three different pin diameters. (AC Line 1, AC Line 2, Neutral, Proximity Detection, Control Pilot, Connection Confirmation).

Type: Tesla Connector
Amps: 12 A - 60 A - 100 A Single to Three Phase
Volts: 110 VAC - 250 VAC - 480 VDC Single to Three phase
Current: 1.32 kW - 19.26 kW - 48 kW
Charge Level: 1-3
Charge Mode: 1-4