

Electric Vehicle Charging Technology by Sam Woo Electronics



DC (Fast Charging / Regular Charging) and AC (Regular Charging) EV Chargers available as Connector or Cable Assembly. Customized solutions available. Solutions are manufactured under IEC Standards (IEC 62196-1, IEC 62196-2, IEC 62196-3).



Specifications subject to change without notice, Consult Sam Woo Electronics for the latest specifications.

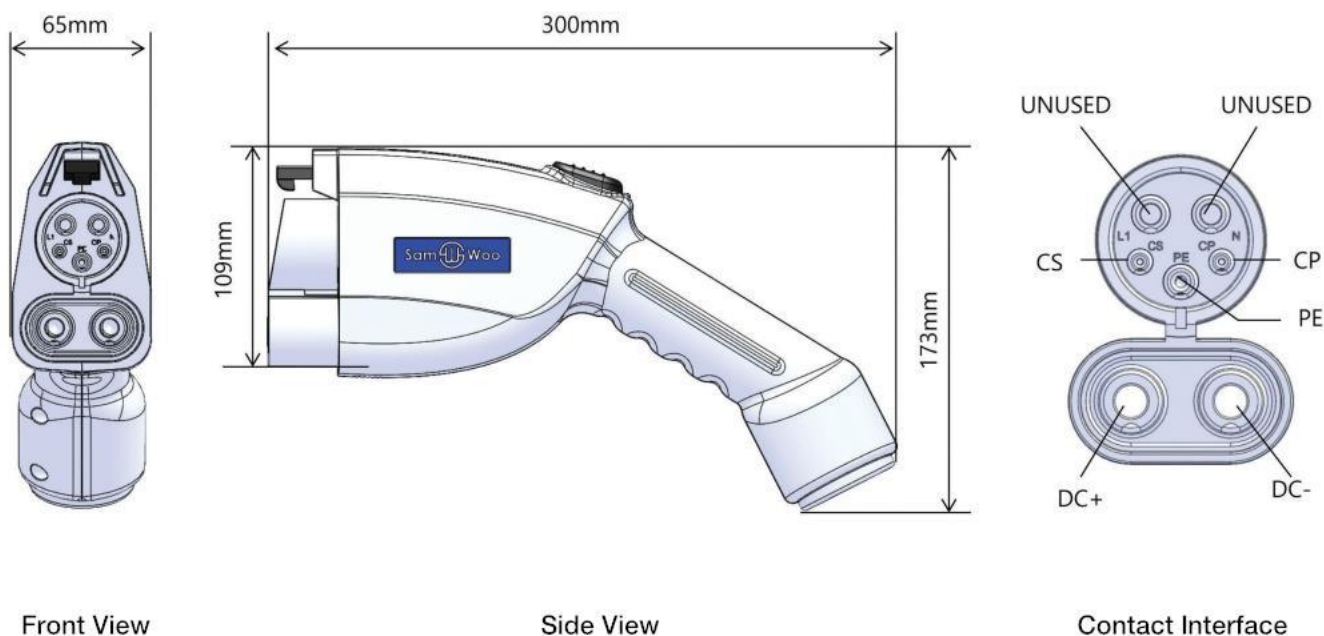


Sam Woo Electronics EV Charging Assembly IEC Standard(IEC 62196-1 and 62196-3).

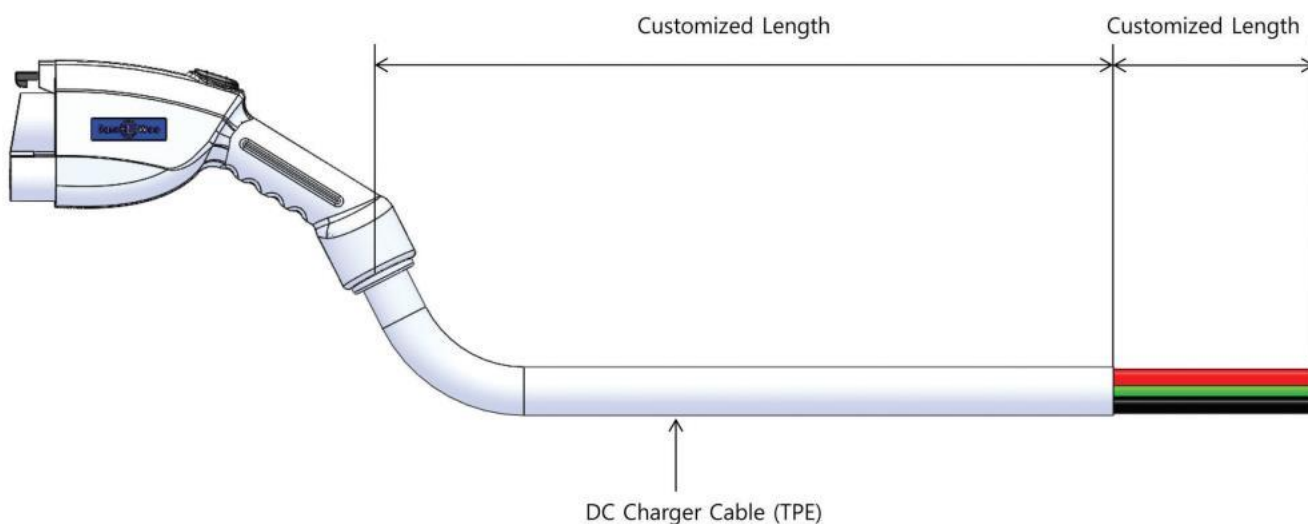
- CCS1 (Combined Charging System Type 1)
- DC 150A / 600V DC Fast Charger
DC 200A / 1000V DC Fast Charger
- Three Step Safe Charging
 - Step 1 : Secure Lock on INLET and LEVER in vehicles
 - Step 2 : Locking System for INLET and LEVER while charging
 - Step 3 : Safe Removal of INLET and LEVER after charging
- Ergonomic Design
- Available in Connector and Cable Assembly Solutions

COMBO 1 TECHNICAL DATA			
General Specification	Part No.	SW-EVT151	SW-EVT201
	Charger Type	TYPE 1 CCS DC (Combined Charging System)	
	Standard	IEC 62196-1, IEC 62196-3	
Connector Specification	Connector Dimension	65mm x 168mm x 300mm	
	Operating Temperature	-30 °C to +50 °C	
	Storage Temperature	-40 °C to +80 °C	
	Electric Power	90 KW	120 KW (200 KW)
	DC Contact	Power Contacts	
	DC Current(A)	150 A	200 A
	DC Voltage(V)	600 V	600 V (1,000 V DC, is tested)
	AC Contact	Signal Contacts	
	AC Current(A)	2 A	
	AC Voltage(V)	30 V	
	Mating Cycle	10,000 ↑	
	Insertion Force	100 N ↓	
	Extraction Force	100 N ↓	
Cable Specification	Material	TPE (SW-EVT151)	TPE (SW-EVT201)
	Specification	DC 2X 2 AWG	DC 2X 50 mm ²
		PE 1X 6 AWG	PE 1X 35 mm ²
		CP & CS 2 X 18 AWG	CP & CS 2 X 16 AWG
		Temperature Sensor 2X 18 AWG	Temperature Sensor 2X 16 AWG
	Diameter	31 mm	36 mm
Temperature Sensor Specification	Color	Black	Black
	Curvature Radius	465 mm ↑	525 mm ↑
	Sensor Type	PT 1000	
	Standard	DIN EN 60751	
	Current(A)	1 mA (0 °C에서 1 V)	
Test Results	Tolerance	±1K	
	Temperature Range	-50 °C ~ 130 °C	
	Test Standard	DESCRIPTION	RESULT
	IEC 62196-1	IEC Test Standard	PASS
	IEC 62196-3		

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EV Charging Assembly can be customized according to customer request.





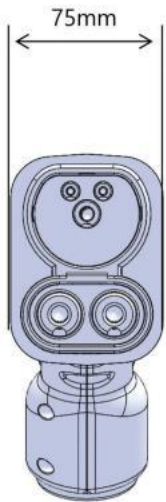
Sam Woo Electronics EV Charging Assembly IEC Standard(IEC 62196-1 and 62196-3).

- CCS2(Combined Charging System Type2)
- DC 200A / 1000V Fast Charger
- Ergonomic Design
- Available in Connector and Cable Assembly Solutions.

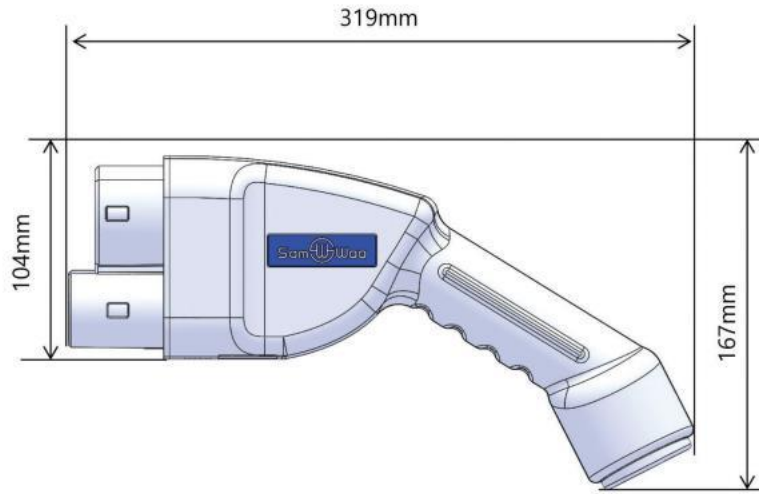


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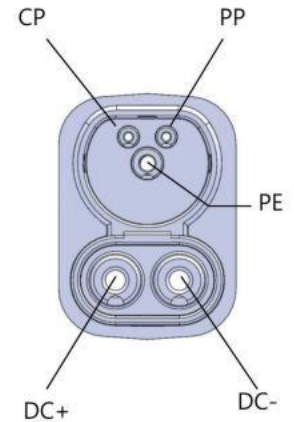
COMBO 2 TECHNICAL DATA			
General Specification	Part No.	SW-EVT202	
	Charger Type	TYPE 2 CCS DC (Combined Charging System)	
	Standard	IEC 62196-1, IEC 62196-3	
Connector Specification	Connector Dimension	75mm x 167mm x 319mm	
	Operating Temperature	-30 °C to +50 °C	
	Storage Temperature	-40 °C to +80 °C	
	Electric Power	200 KW	
	DC Contact	Power Contacts	
	DC Current(A)	200 A	
	DC Voltage(V)	1,000 V DC	
	AC Contact	Signal Contacts	
	AC Current(A)	2 A	
	AC Voltage(V)	30 V	
	Mating Cycle	10,000 ↑	
	Insertion Force	100 N ↓	
	Extraction Force	100 N ↓	
Cable Specification	Material	TPE (SW-EVT202)	
	Specification	DC 2X 50 mm ²	
		PE 1X 35 mm ²	
		CP & CS 2 X 16 AWG	
		Temperature Sensor 2X 16 AWG	
	Diameter	36 mm	
Temperature Sensor Specification	Color	Black	
	Curvature Radius	216 mm ↑	
	Sensor Type	PT 1000	
	Standard	DIN EN 60751	
	Current(A)	1 mA (0 °C → 1 V)	
Test Results	Tolerance	±1K	
	Temperature Range	-50 °C ~ 130 °C	
	Test Standard	DESCRIPTION	RESULT
	IEC 62196-1	IEC Test Standard	PASS
	IEC 62196-3		



Front View



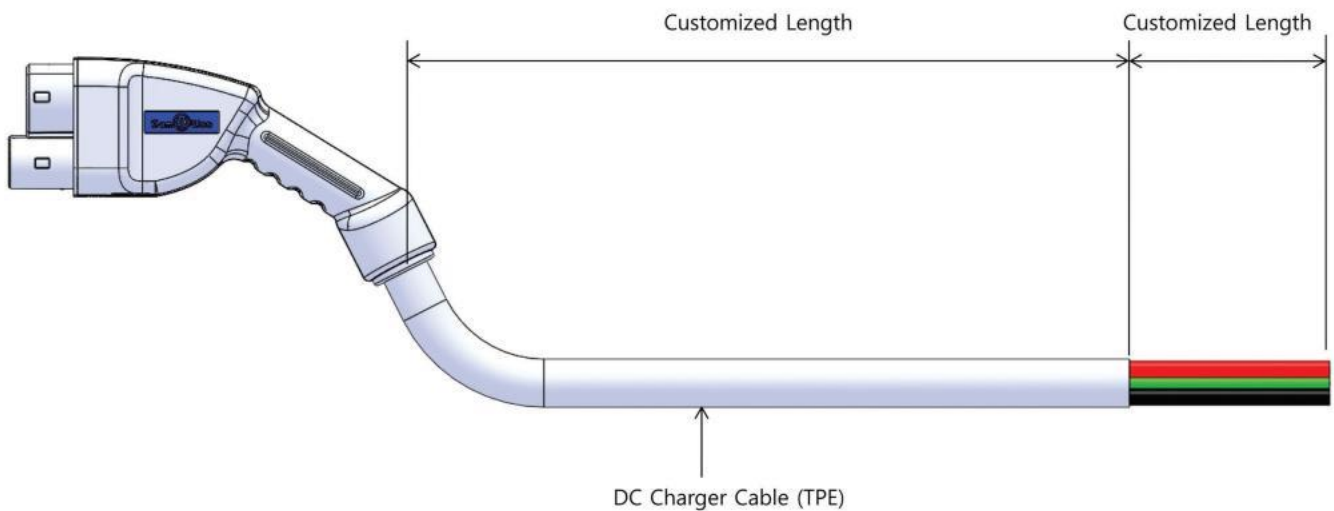
Side View



Contact Interface

Cable Assembly

EV Charging Assembly can be customized according to customer request.



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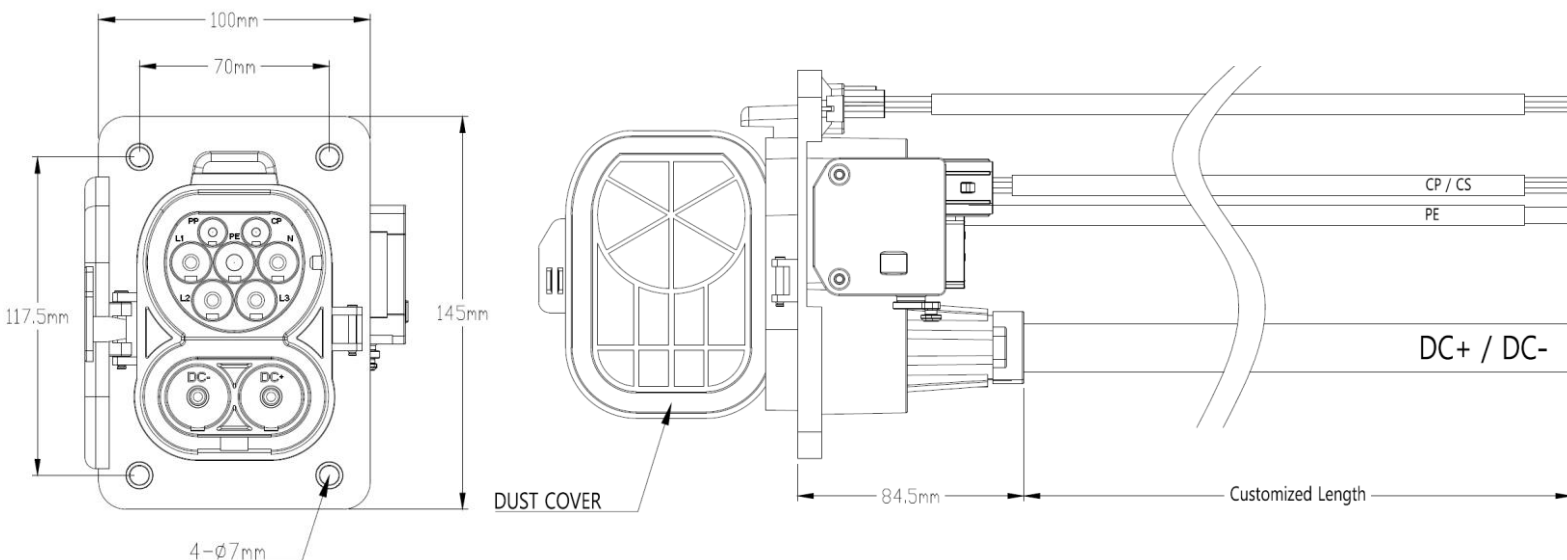


Sam Woo Electronics EV Inlet Assembly IEC Standard(IEC 62196-1 and 62196-3).

- TYPE 2 CCS DC(Combined Charging System)
- AC Contacts 2A / 30V
- DC Contacts 200A / 1,000V
- Available in inlet assembly solution

Cable Assembly

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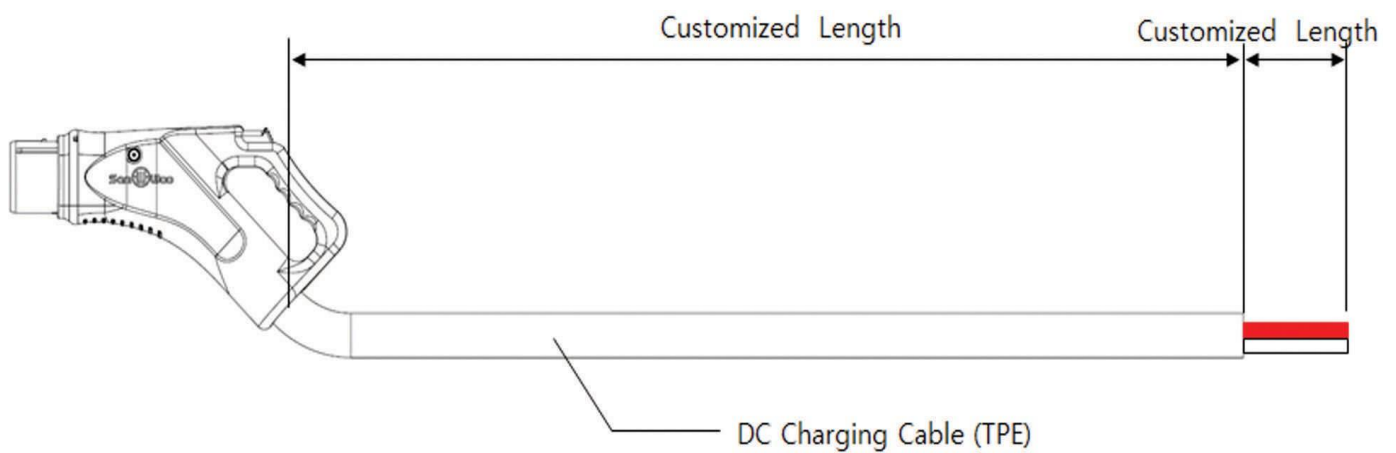
COMBO 2 INLET TECHNICAL DATA				
General Specification	Part No.	SW-EVT202 INLET		
	Charger Type	TYPE 2 CCS DC(Combined Charging System)		
	Standard	IEC 62196-1, IEC 62196-3		
Connector Specification	Connector Dimension	98mm X 145mm X 106mm		
	Operating Temperature	-30℃ to +50℃		
	Storage Temperature	-40℃ to +80℃		
	Electric Power(KW)	200 KW		
	DC Contact	Power Contacts		
	DC Current(A)	200 A		
	DC Voltage(V)	1,000V DC		
	AC Contact	Signal Contacts		
	AC Current(A)	2A		
	AC Voltage(V)	30 V		
	Mating Cycle	10,000 ↑		
	Insertion Force	100 N ↓		
	separation Force	100 N ↓		
	Actuator Specification	Actuation Voltage(V)	DC 9V ~ 16V, Rated Current 2A	
		Actuation Current(A)	Max 0.1A	
Locked current(A)		Max 1.2A		
Operating Time		Max 600ms		
Operating Load		42N		
Operating Distance		5.9mm		
Degree of protection		IP 67		
Durability		120,000 CYCLES		
Operating Temperature		-40℃ to +85℃		
Cable Specification	Material	PVC		
	Specification	DC 2 X 70 mm ² PE1 X 25 mm ² CP & CS 2 X18 AWG Temperature sensor 2 X 18AWG Actuator 4 X 22AWG LED 2 X18AWG		
		Diameter	DC Line 19.5mm	
		Color	Orange	
		Curvature Radius	216 mm ↑	
	Sensor Type	PT 1000		
	Standard	DIN EN 60751		
Current(A)	1 Ma (0℃, 1V)			
Temperature sensor Specification	Tolerance	±1%		
	Temperature Range	-50℃ to 130℃		
Test Results	Standard	Description	Result	
	IEC-62196-1	IEC Test Standard	Pass	
	IEC-62196-3			

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EV Charging Assembly can be customized according to customer request.



CHAdeMo TECHNICAL DATA			
General Specification	Part No.	SW-EVT203	
	Charger Type	CHAdeMo	
	Standard	IEC 62196-1, IEC 62196-3	
Connector Specification	Connector Dimension	92mm X 198mm X 361mm	
	Operating Temperature	-30℃ to +50℃	
	Storage Temperature	-40℃ to +80℃	
	Electric Power(KW)	120 KW	
	DC Contact	Power Contacts	
	Signal Contacts	Signal Line : 7, Temperature sensor Line : 4, Solenoide Line : 2	
	DC Current(A)	200 A	
	DC Voltage(V)	600V DC	
	Signal Current(A)	2 A	
	Signal Voltage(V)	30 V	
	Mating Cycle	10,000 ↑	
	Insertion Force	100N ↓	
Solenoide	Actuation Voltage(V)	DC 12V	
	Release Voltage(V)	0V (No current flow)	
	Hold Voltage(V)	DC7V±1V	
	Coil resistance	38Ω±10% (Reference at 20℃)	
Protection Rating	Degree of protection	IP-46	
	Outdoor use	Type 3R (Water Resistant)	
Cable Specification	Material	TPE	
	Specification	DC 2 X 67.4 mm ² Signal Line, Temperature sensor Line, Solenoide Line 16 X 18 AWG(예 비 3)	
	Diameter	43 mm	
	Color	Black	
	Curvature Radius	Min. 253mm	
Temperature sensor Specification	Sensor Type	PT 10000	
	Standard	UL 1434	
	Current(A)	0.12 mA	
	Tolerance	±1%	
	Temperature Range	-40℃ to 125℃	
Test Results	Standard	DESCRIPTION	RESULT
	IEC 62196-1	IEC Test Standard	PASS
	IEC 62196-3		

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C TYPE



B TYPE



Sam Woo Connector(SEV-TC1) and Cable assembly(SW-EV032)
IEC Standard(IEC 62196-1 and 62196-3).

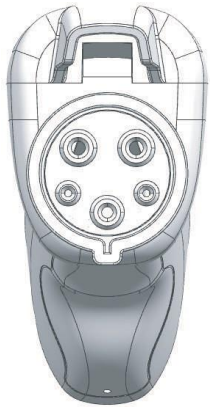
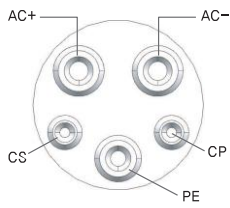
AC Charger Technical Data

AC CHARGER TECHNICAL DATA			
General Specification	Part No.	SW-EV032	
	Charger Type	TYPE 1 C AC	
	Standard	IEC 62196-1, IEC 62196-2	
Connector Specification	Connector Dimension	65mm x 227mm x 326mm	
	Operating Temperature	-30 °C to +50 °C	
	Storage Temperature	-40 °C to +80 °C	
	Electrical Power	7.5 Kw	
	AC Contact	2 Poles (CP, CS)	
	AC Current(A)	CP, CS, PE 2A AC+, AC- 32A	
	AC Voltage(V)	CP, CS, PE 30V AC+, AC- 250V	
	Mating Cycle	10,000 ↑	
	Insertion Force	75 N ↓	
	Extraction Force	75 N ↓	
Cable Specification	Material	PVC	
	Specification	3 X 10 AWG 2 X 18 AWG	
	Diameter	16mm	
	Color	Black	
Test Results	Test Standard	DESCRIPTION	RESULT
	IEC 62196-1	IEC Test Standard	PASS
	IEC 62196-2		

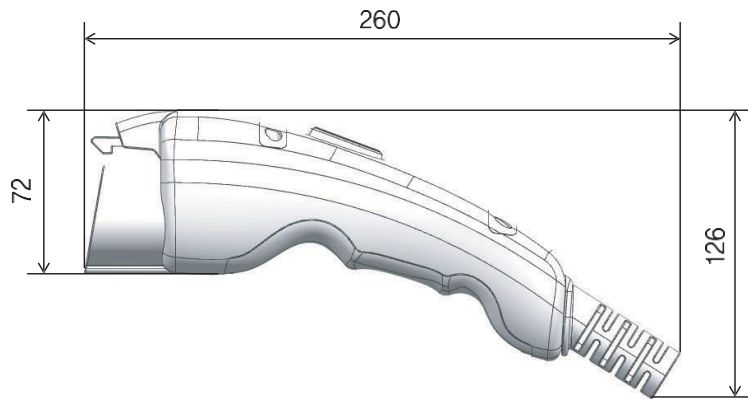
- TYPE 1 C AC
- AC 32A / 250V AC Charger
- Three Step Safe Charging :
 - Step 1 : Secure Lock on INLET and LEVER in vehicles
 - Step 2 : Locking System for INLET and LEVER while charging
 - Step 3 : Safe Removal of INLET and LEVER after charging
- Ergonomic Design
- Available in Connector and Cable Assembly Solutions

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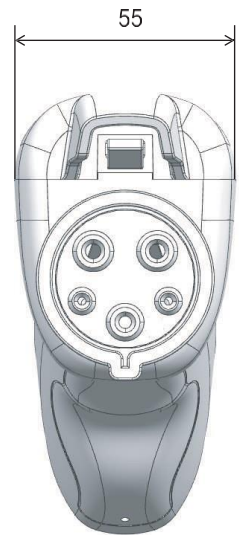
AC Charger Dimensions



Contact Interface



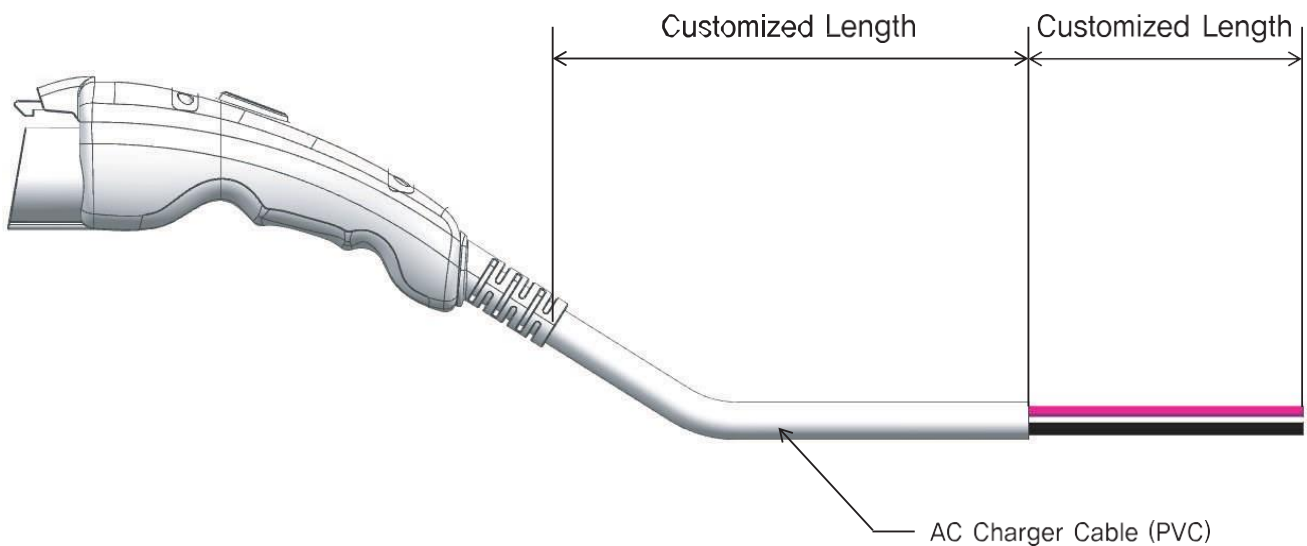
Side View



Front View

Cable Assembly

EV Charging Assembly can be customized according to customer request.



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Connector Overview



SCC Series

Size / No. of Contacts
Size – 13,16,21,25
Contacts – 3,4,5,7,8,10,16,24

Material / Finish
Body – Aluminum alloy / Ni plating
Insulator – Thermosetting resin / Blue, Green
Contacts – Copper alloy / Silver plating



SCK / SCN Series

Size / No. of Contacts
SCN Size – 12,16,20,25
SCK Size – 12,16,20,25,30,32,40
Contacts – 2,3,4,5,6,7,8,10,12,14,20

Material / Finish
Body – Zinc alloy / Ni plating
Insulator – PA & Bakelite / Green & Black
Contacts – Brass, Phosphor Bronze / Silver or Gold plating



SH Series

Size / No. of Contacts
Size – 9
Contacts – 6

Material / Finish
Body – Brass / Chromium plating
Insulator – Glass filled polyacetal / White
Contacts – Brass, Phosphor Bronze / Gold plating



SM Series

Size / No. of Contacts
Size – 9
Contacts – 8

Material / Finish
Body – Brass / Ni plating
Insulator – PA / Black, Ivory
Contacts – Brass, Phosphor Bronze / Gold plating



Push-Pull

SN Series

Size / No. of Contacts
Size – 8,10
Contacts – 2,3,4,5,6,9,10,12

Material / Finish
Body – Zinc alloy and Brass / Ni Plating
Insulator – PA / Black
Contacts – Brass, Phosphor Bronze / Silver or Gold Plating



Push-Pull

SP Series

Size / No. of Contacts
Size – 00,0,1,2,3
Contacts – multiple

Material / Finish
Body – Brass / Chromium Plating
Insulator – PEEK, PA or Teflon
Contacts – Brass / Gold Plating



Push-Pull

SPP Series

Size / No. of Contacts
Size – 1
Contacts – multiple

Material / Finish
Body – PSU, PEI, PC
Insulator – PEEK, PA
Contacts – Brass / Gold Plating



SR IP67 Series

Size / No. of Contacts
Size – 8
Contacts – 4

Material / Finish
Cap – Brass / Ni Plating
Insulator – PBT / Black
Outer sheath – PVC / Black
Contacts – Brass, Phosphor Bronze / Silver or Gold Plating

Bayonet



SRC Series

Size / No. of Contacts

Size – 21
Contacts – 10,16,26

Material / Finish

Body – Aluminum alloy / Ni plating
Insulator – Thermosetting resin / Black or Blue
Contacts – Brass, Phosphor Bronze/Gold or Silver plating



ST Series

Size / No. of Contacts

Size – 8,8B,9, 9A
Contacts – 12,14,16,20

Material / Finish

Body – Brass & Zinc alloy / Ni plating
Insulator – PPS resin / Black
Contacts – Brass, Phosphor Bronze / Gold plating



ST IP67 Series

Size / No. of Contacts

Size – 9
Contacts – 12,16,20

Material / Finish

Body – Brass & Zinc alloy / Ni plating
Insulator – PPS resin / Black
Contacts – Brass, Phosphor Bronze / Gold plating



SU IP67 Series

Size / No. of Contacts

Size – 20
Contacts – 3,4,5,6,8,A5,12,14

Material / Finish

Body – Zinc Alloy / Ni plating
Insulator – PA / Black
Contacts – Brass, Phosphor Bronze / Gold plating



SU2 / SU3 IP67 Series

Size / No. of Contacts

Size – 20
Contacts – 3,4,5,6,8,A5,12,14

Material / Finish

Body – Zinc Alloy, Brass
Insulator – PA
Contacts – Brass, Phosphor Bronze



SW Series

Size / No. of Contacts

Size – 8,10
Contacts – 2,3,4,5,6,9,10,12

Material / Finish

Body – Brass / Ni plating
Insulator – PA / Black
Contacts – Brass, Phosphor Bronze / Silver or Gold Plating



SW IP67 Series

Size / No. of Contacts

Size – 8,10,16
Contacts – 2,3,4,5,6,9,10,12,28

Material / Finish

Body – Brass / Ni plating
Insulator – PA / Black
Contacts – Brass, Phosphor Bronze / Silver or Gold Plating



SXR Series

Size / No. of Contacts

Size – 10
Contacts – 8

Material / Finish

Body – Aluminum alloy / Ni plating
Insulator – PBT resin / Black
Contacts – Brass, Phosphor Bronze / Gold plating

Cable Assembly Overview



SCC Series Cable Assembly



SCN / SCK Series Cable Assembly



SP Series Cable Assembly



SPP Series Cable Assembly



SN Series Cable Assembly



SU2 / SU3 Series Cable Assembly



SH Series Cable Assembly

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