

EV Charging Gun

UL 2251 - 2017 SAE J1772 - 2016 IEC 62196 -1 & 2:2017



www.ccpcontactprobes.com ccp_service@pccp.com.tw



C.C.P. CONTACT PROBES





Charging Mode and Charging Case Definition

Charging Mode	Current	Description
Mode 1	AC Charging	 For standard household outle Typical charging for e-scooter
Mode 2	AC Charging	 For both domestic and indust In-cable control and protectic (IC-CPD)
Mode 3	AC Charging	 For AC charging station (EVSE to the power network Integrated control communic safety functions
Mode 4	DC Charging	 For DC charging station (EVSI Option of CHAdeMO, CCS1, a Fast charging capabilities and safety control system



SAE J1772 CHARGING GUN

Introduction

New design Type 1 AC Charging Cable developed in accordance with SAE J1772 for the US market, used our patented Crown Spring Terminal featuring superior charging performance: High Current, Low Insertion Force, Low Insolution Resistance, and Low Temperature Rise.

With high-strength integrated hosing body and anti-loose safety lock, our charging plug is extremely durable and achieves a protection rating of IP67.



SAE J1772 - 2016 **US Standard**

Application Field



Residential

AC Household Charger Portable EV Charger

Wall-Box Charger



Commercial **Business or Workplace EVSE**

 Business District Shopping Center



Station Various Charging Standard EVSE

 Service Station Parking Lot



Public Municipal Charging Platform Roadway

• Street or Park





UL Standard Global Safety Certification No. E516931 for Electric Vehicles



Chinese National Standard 15700-1 Plugs, Socket-Outlets, and Vehicle Couplers - Conductive **Charging of Electric Vehicle Connector**



CCP Contact Probes Testing Center is accredited by CNAS in accordance with ISO/IEC 17025: 2005 requirements for the competence of testing and calibration laboratories





UL 2251 Standard for Safety Plugs, Receptacles, and Couplers

SAE J1772-2016 Electric Vehicle and Plug-in Hybrid Electric Vehicle Conductive Charge Coupler

SAE J1772 CHARGING GUN

SAE J1772 - 2016



Type 1 SAE J1772 **AC Vehicle Connector**





Charging Mode 3 Connection Case B/C

Model P/N	Voltage	Current	Cable OD
A-SM-AC016000-001S	120 V	16 A	14.5mm
A-SM-AC032000-001S	240 V	32 A	18.5mm
A-SM-AC050000-001S	240 V	50 A	22.8mm
A-SM-AC080000-001S	240 V	80 A	23.5mm
Insulation Resistance	Insertion Force	IP Rating	Mating Cycle
≥500MΩ (500V DC)	<100 N	IP 67	≥10,000
Withstanding Voltage	Flammability Class	Operating T	emperature
1000V AC / 1 Min	UL 94-V0	-30°C ~	× +50°C

Features				
Ø	High & Stable Current		Safe	
	Long Life Cycle		Flar	
Ţ	Ergonomic Design		UV	
	Low Contact Resistance		Hig	
	Low Temperature Rise		Hig	
Advan	tages			





30+ Years Developing Experience Advanced Development - Anti-Corrosion, Low Contact Resistance & High Energy Performance



SAE J1772 CHARGING GUN

SAE J1772 - 2016

fe Design

me Retardant

Resistance

gh Waterproof Rating

gh Weatherability

IEC 62196-1&2 CHARGING GUN

Introduction



IEC 62196-1&2 **CHARGING GUN**

Introduction

IEC 62196-1&2 CHARGING GUN

IEC 62196-1&2:2017





3 Phase

7 Pins

IEC 62196-1&2 EU Standard

1 Phase 5 Pins

Dimension





Model P/N	Number of Phase	Voltage	Current	Cable
A-EM-AC016000-002S	1-Phase	250 V	16 A	3×2.5mm ² +1×0.5mm ²
A-EM-AC032000-001S	1-Phase	250 V	32 A	$3 \times 6 mm^2 + 1 \times 0.5 mm^2$
A-EM-AC016000-003S	3-Phase	480 V	16 A	$5 \times 2.5 \text{mm}^2 + 1 \times 0.5 \text{mm}^2$
A-EM-AC032000-002S	3-Phase	480 V	32 A	5×6mm ² +1×0.5mm ²

Insulation Resistance	Insertion Force	IP Rating	Mating Cycle
≥500MΩ (500V DC) <100 N IP 67 (unpluge		IP 67 (unplugged)	≥10,000
Withstanding Voltage	Flammability Class	Operating Temperature	
1000V (AC 1 Min)	1 Min) UL 94-V0		C ~ +50°C

Features				
Ø	High & Stable Current	Ø	Sa	
	Long Life Cycle		Fla	
	Ergonomic Design		UV	
\overleftrightarrow	Low Contact Resistance		Hig	
	Low Temperature Rise		Sa	
٢	Various Charging Mode	À	Hig	

Advantages



Ergonomic Structure Design Anti-Slip Handheld Design - Multi-Texture Ergonomic Design with Perfect Friction Force







Short Lead Time & Low Cost Manufacturing Integration - Self-Own Plating Labs, CNC & Molding Factories

IEC 62196-1&2 **CHARGING GUN**

IEC 62196-1&2:2017

afe Design

ame Retardant

Resistance

igh Waterproof Rating

afety Protection

igh Weatherability

IEC 62196-1&2 CHARGING GUN

Type 2 to Type 2 Charging Cable



Mobile AC charging cable with protective caps, compatible with all Type 2 (IEC 62196) electric vehicles and universal charging infrastructure for charging mode 3/ case B.

Vehicle charging connector and infrastructure charging plug tested to meet TUV Rheinland certification requirements.





Dimension









Model P/N	Number of Phase	Voltage	Current	Cable
A-EM-AC016000-005S	1-Phase	250 V	16 A	$3 \times 2.5 \text{mm}^2 + 1 \times 0.5 \text{mm}^2$
A-EM-AC032000-003S 3-Phase		480 V	32 A	5×6mm ² +1×0.5mm ²
Insulation Resistance	Insertion Force IP Rating		Mating Cycle	
≥500MΩ (500V DC)	<100 N	<100 N IP 67 (unplugged)		≥10,000
Withstanding Voltage	Flammability Class	Operating Temperature		ng Temperature
1000V (AC 1 Min)	UL 94-V0	-30°C ~ +50°C		C ~ +50°C

IEC 62196-1&2 **CHARGING GUN**

Type 2 to Type 2 Charging Cable

Charging Mode 3 Charging Case B

SAE AC **PLUG HOLDER Charging Accessory**





SAE J1772 US Standard

Front





Color	Material	Operating Temperature	Flammability Class
Black	PA66	-30°C~+50°C	UL 94-V0(f1)

* RoHS Compliant



* Non-Certified Standard



Insulation Resistance	Insertion Force	IP Rating	Mating Cycle
≥500MΩ (500V DC) <100 N		IP 55 (unplugged)	≥10,000
Withstanding Voltage	Flammability Class	Operating Temperature	
1000V (AC 1 Min)	UL 94-V0	-30°C~+50°C	

IEC AC PORTABLE CHARGER

Charging Accessory

Voltage	Current	Cable
220 V	16 A	$3 \times 2.5 \text{mm}^2 + 1 \times 0.5 \text{mm}^2$

TEST CAPABILITY & VERIFICATION

Testing Equipment

Testing Items

Environmental

- Waterproof
- Humidity
- Impact
- Storage
- Resistance to Corrosion

Mechanical

- Insertion/Extraction Life
- Withdrawal Force
- Vibration
- Vehicle Drive Over

- Electrical
- Hipot
- Insulation Resistance
- Dielectric Withstand
- Temperature Rise

Other

- tion Life Drop
 - Cable Force
 - Air Leakage

ISO 9001: 2015 Quality Management Systems

ISO 14001: 2015 Environmental Management Systems

IATF 16949: 2016 Automotive Quality Management Systems

QC 080000 Hazardous Substance Process Management

ISO 13485: 2016 Medical Devices - Quality Management Systems

Quality Assurance





