J1772 connector wiring diagram

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SAE J1772,IEC 62196-2 Type 1 J plug,,,SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler?...

This page describes SAE J1772 plug used as connector in Electric Vehicle (EV) charging.SAE J1772 Plug pin diagram and J1772 Signaling Circuit are also covered.

Introduction:SAE (Society of Automotive Engineers) J1772 is conductive charge coupler. It is used as single phase AC charger connector for electric vehicles.

On EV (Electric Vehicle) side, US and Japan have converged to J1772 plug. This EV plug is used by automakers such as GM, Ford, Honda, Mitsibishi,Chrysler,Tesla, Toyota, Renault-Nissan etc.

Figure-1 depicts J1772 plug pin diagram.Following table-1 describes signals shown on J1772 plug pins.

There are two EV side connectors viz. type-1 and type-2. ➨Type-1 connector (i.e. J1772): It consists of 5 pins. It has charging voltage upto 250V and charging current upto 32 A.Hence AC charging power upto 7 KW can be possible. ➨Type-2 connector: Initially proposed by Mennekes. It supports single phase charging and three phase charging withcharging voltage upto 500V and charging current upto 63A. Three phase 400 V charging at 32 A represents charging power of 22 KW.

Figure-2 depicts J1772 Signaling Circuit.

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SAE J1772, also known as a J plug or Type 1 connector after its international standard, IEC 62196 Type 1, is a North American standard for electrical connectors for electric vehicles maintained by SAE International under the formal title "SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler".[1]

The SAE maintains the general physical, electrical, communication protocol, and performance requirements for the electric vehicle conductive charge system and coupler. The intent is to define a common electric vehicle conductive charging system architecture including operational requirements and the functional and dimensional requirements for the vehicle inlet and mating connector.

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The J1772 5-pin standard supports a wide range of single-phase (1f) alternating current (AC) charging rates. They range from portable devices that can connect to a household NEMA 5-15 outlet that can deliver 1.44 kW (12 A @ 120 V) to hardwired equipment that can deliver up to 19.2 kW (80 A @ 240 V).[2] These connectors are sometimes informally referred to as chargers, but they are "electric vehicle supply equipment" (EVSE), since they only supply AC power to the vehicle"s on-board charger, which then converts it to the direct current (DC) needed to recharge the battery.

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