Part A:
IEC TC69 Electric Vehicle Charging

- TC 69 Electric Road Vehicles – Covers all types of electrically propelled vehicles
  - *Not limited just to Automobiles*
  - *Trucks*
  - *Buses*
IEC TC69 Electric Vehicle Charging

- **IEC 61851-1** Electric vehicle conductive charging system - Part 1: General requirements
  - Second Edition Published Nov. 2010
  - Revision process started for 1\textsuperscript{st} Amendment
IEC TC69 Electric Vehicle Charging

Also:

- **Part 21**: Electric vehicle requirements for conductive connection to an a.c./d.c. supply
- **Part 22**: A.C. electric vehicle charging station
- **Part 23**: D.C electric vehicle charging station
- **Part 24**: Control communication protocol between off-board d.c. charger and electric vehicle
IEC TC69 Electric Vehicle Charging

- Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply
- Status: At CD stage.
- TC69 has proposed Joint ISO/IEC WG (mode 5 cooperation) with ISO TC22/SC21 to address needs. No response from ISO TC22/SC21 to date.
- Original Publication target: March 2012 (delayed)
IEC TC69 Electric Vehicle Charging

- **Part 22**: A.C. electric vehicle charging station

- **Status**: At CD stage, next meeting planned for June 2011

- **Publication**: March 2012
IEC TC69 Electric Vehicle Charging

- **Part 23**: D.C electric vehicle charging station

- **Status**: At CD stage, next meeting planned for June 2011
- **Publication**: November 2012
IEC TC69 Electric Vehicle Charging

• Part 24: Control communication protocol between off-board d.c. charger and electric vehicle

• Status: At WD stage, next meeting planned for June 2011

• Publication: June 2013
Part B:
IEC SC23H EV Connector & Inlet

- SC23H Industrial Plugs & Socket-Outlets – Covers all connection products intended for the connection of electric vehicles to the supply network and/or to dedicated supply equipment.
IEC SC23H EV Connector & Inlet

• **IEC 62196-1** Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements
  
  • First Edition Published 2003.
  
  • Second Edition being prepared, CDV Stage, next meeting planned for May 2011.
  
  • Publication: March 2012
Types of EV Couplers
(defined by IEC 61851-1)

- **Basic** - interface for AC mode 1, 2 and 3 charging (Part 2)
- **Universal** - interface for all modes of charging (Part 3)
  - high power AC and 30/32 Amp AC, or
  - high power DC and 30/32 Amp AC
- **High power DC** (Part 3)
IEC SC23H EV Connector & Inlet

- **Part 2** Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories

- Status: At CDV stage, next meeting planned for May 2011
- Publication: April 2012
AC EV Couplers

Three BASIC AC couplers are available Globally.

Type 1
IEC 62196-2 (SAE J1772)
Used in USA & Japan
Rating:
208-240 VAC, 80 A max.
1 phase (USA)
250 V, 32 A, 1 phase
(Japan, IEC)
AC EV Couplers

Type 2
IEC 62196-2
Europe
Rating:
250 V, 13 A, 20 A, 32 A, 63 A, or 70 A, 1 phase;
380-480 V, 13 A, 20 A, 32 A, or 63 A, 3 phase
AC EV Socket-Outlet & Plug

Type 2 IEC 62196-2 Europe
AC EV Couplers

Type 3
IEC 62196-2
Shuttered design
Italy, may be used in other countries requiring shutters

Rating:
250 V, 16 A or 32 A, single phase and 380-480 V, 32 A, or 63 A three-phase
IEC SC23H EV Connector & Inlet

- **Part 3**: Dimensional interchangeability requirements for pin & contact-tube coupler, rated operating voltage & current up to 1000 V d.c., 400 A for dedicated d.c. charging

- **Status**: WD stage, next meeting April 2011
- **Publication**: Fall 2013
DC EV Connector

Two High Power DC couplers have been proposed.

Japan - Type 1
High Power DC
IEC 62196-3
Rating:
600V, 200 A d.c.
China – Type 2
High Power DC
IEC 62196-3
Rating:
750V, 250 A d.c.

Connector
Universal AC/DC Coupler

US (SAE) Connector
IEC 62196-3

Inlet
Rating: 600 V, 200 A DC
Universal AC/DC Coupler

German Connector
IEC 62196-3

Inlet
Rating: 850 V, 200 A d.c.
Questions?

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