Portable AC Charging Device Test System





Application

AC charging control device testing

As important ancillary equipment for the rapid development of new energy electric vehicles, electric vehicle charging devices are an important prerequisite for the rapid development of electric vehicle industry. Portable charging devices are one of the driving forces for the development of electric vehicle components. As a leading supplier of test and measurement solutions in the field of new energy, ITECH provides professional charging device test system with on-cable control device, which is a safe, reliable and efficient test for the portable electric vehicle charging devices.

Thanks to ITECH's extensive line of power and load products, users can choose the most appropriate instrument for their test system based on their needs, providing maximum flexibility and scalability to the system's architecture. The entire set adopts flexible hardware framework, integrates necessary hardware test equipment together, to facilitate customer control costs and improve test efficiency. System operating software is English version, running on Windows98 / 2000 / XP / 7 operating system, open editing platform, the user can edit their own test steps, easy to complete the test. ITS9500-based custom system specifically for electric vehicle AC / DC charging compatibility test.

Hardware part

Integration of AC power, AC loads, power analyzers, oscilloscopes and interface cards and other test equipment.

Software part

For national standards

- GB/T 18487.1-2015 Electric vehicles conductive charging systems - Part 1: General requirements
- GB/T 18487.2-2001 Electric vehicles conductive charging systems Electric vehicles and AC / DC power connection requirements
- GB/T 18487.3-2001 Electric vehicles conductive charging systems Electric vehicles and AC / DC charger (station)
- GB/T 20234.1-2015 Electric vehicles conductive charging connecting devices Part 1: General requirements
- GB/T 20234.2-2015 Electric vehicles conductive charging connecting devices Part 2: AC charging interface

- Provide standard test items, the user can also use this open platform to write their own test projects on their own according to different test requirements.

Feature

- Modular design, it can be built according to different needs, convenient, easy to maintain, and full-featured, suitable for electric car and home charger test platform Achieve editorial, operational testing and data analysis functions mentioned in the national standard test items
- High test accuracy, perfect test items
- Multi-level management authority setting function, to ensure system stability
- Statistical report output and editing capabilities
- Simulate CC and CP abnormalities of interface part, achieve logic protection action mechanism test
- Fill in the blank interface, without editing capabilities
- Provide more than 20 test functions, a number of security testing, security and stability, high test accuracy

Software configuration

ITECH professional testing software is with operator-friendly interface, just tick the test items, without having the programming ability, which makes the operation simpler and clear, easy to use. Software provides customized test report editing and output capabilities, the output can be used directly as a client's report.

Hardware Configuration

- AC source
  IT7600 series、IT7300 series
- AC electronic load
  IT 8600 series

Measuring range	AC power supply	AC electronic load
16A	IT7626/IT7628L/IT7326 IT7630/IT7632IT7634	IT8616/IT8617/IT8624
32A	IT7630/IT7632IT7634 IT7627/IT7636/IT7628	IT8617/IT8624/IT8625/ IT8626/IT8627IT8628
63A	IT7627/IT7636/IT7628	IT8625/IT8626/IT8627/ IT8628

Test scheme

Charging mode 2
When the electric car is charged using connection B of charging mode 2, it is recommended that the control pilot circuit shown in Figure A to check and judge charging connection device and the rated current parameter.

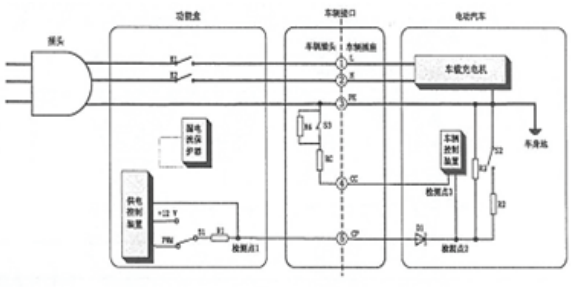


Figure A Charging mode 2 connections B control pilot circuit schematic

ITECH bases on "GB / T18487.1-2015 Electric Vehicle Conductive Charging System Part 1: General Requirements" and "Electric Vehicle Charging Interoperability Testing Specifications" proposed charging control box test solution.

Test items

Test type	Test items
Security testing	• Analog leakage current test • Analog ground connection abnormality test • Output over current protection test
Charge control voltage test	• Detection point 1 12V voltage error detection • Detection point 1 9V voltage error detection • Detection point 1 6V voltage error detection
Charge control signal test	• Frequency error test • Duty cycle error test • Rise time error test • Fall time error test
Charge Control Timing Test	• Charge control timing test, and simulate full connection, semi-connected and unconnected state
Connection abnormal simulation	• Charging Station Detection Point 1 Voltage Abnormal simulation • Output Over Current Abnormal Simulation
Efficiency testing	• Test the efficiency of household chargers
Disturbance test	• Superimposed different sub-harmonic, frequency limit and voltage limit, voltage dips and other tests