

Universal charging station and method for charging electric vehicle batteries

Abstract

A method and apparatus for charging the battery of an electric vehicle are provided. When the electric vehicle is connected to a charging station, it is interrogated to determine the nature of the charge controller that is on board the vehicle; and logic decisions invoking the particular mode for charging the vehicle are made depending on the nature and type of charge controller that is on board the vehicle. Thus, delivery of charging energy to the battery in the vehicle may be entirely under the control of a charge controller on board the vehicle; or if the control module in the vehicle is less sophisticated then delivery of charging energy will be under the control of a charging module within the charging station. Parameters of initial charging current and voltage are therefore set either by the on board battery charging controller, or the charge controller in the charging station; alternatively, those parameters may be set manually or by insertion of a card into a data interface to establish initial charging conditions. Under controlled conditions, a plurality of vehicles may be charged at a single establishment having a plurality of charging stations, either sequentially or simultaneously, depending on the criteria to be established. The charging station may be privately owned, so as to charge a fleet of vehicles; or there may be a plurality of charging stations at a publicly accessible service station.
