Title (en)

TRANSFORMERLESS ON-BOARD CHARGING DEVICE FOR ELECTRIC VEHICLES, AND METHOD FOR CONTROLLING A DC/DC STAGE IN A TRANSFORMERLESS ON-BOARD CHARGING DEVICE FOR ELECTRIC VEHICLES

Title (de)

TRANSFORMATORLOSES ON-BOARD-LADEGERÄT FÜR ELEKTRO-FAHRZEUGE UND VERFAHREN ZUR ANSTEUERUNG EINER DC/DC-STUFE IN EINEM TRANSFORMATORLOSEN ON-BOARD-LADEGERÄT FÜR ELEKTROFAHRZEUGE

Title (fr)

DISPOSITIF DE CHARGE EMBARQUÉ SANS TRANSFORMATEUR POUR VÉHICULES ÉLECTRIQUES, ET PROCÉDÉ PERMETTANT DE COMMANDER UN ÉTAGE CC/CC DANS UN DISPOSITIF DE CHARGE EMBARQUÉ SANS TRANSFORMATEUR POUR VÉHICULES ÉLECTRIQUES

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Abstract (en)

[origin: WO2023274816A1] The invention relates to a transformerless on-board charging device for electric vehicles for charging a drive battery (BAT) with low leakage current, having a first DC/DC stage and a second DC/DC stage, wherein the two DC/DC stages are connected in series as a double stage, wherein both the first DC/DC stage and the second DC/DC stage each have • at least two switching elements, in particular one transistor and one diode or two transistors • at least one inductor coil, and • at least one output capacitor, wherein both the first DC/DC stage and the second DC/DC stage are arranged symmetrically with respect to a capacitive centre point of an intermediate circuit, wherein one DC/DC stage is connected to a partial intermediate circuit in each case, wherein the two DC/DC stages are connected in series on the battery side, and wherein the two DC/DC stages are also connected there to the same capacitive centre point of the intermediate circuit side, wherein both DC/DC stages are configured to each generate an output voltage that is variable over time during operation by means of simultaneous switching, wherein the frequency of said output voltage is between the grid frequency and three times the grid frequency. The invention also relates to an associated method for controlling a DC/DC stage in a transformerless on-board charging device for electric vehicles.

IPC 8 full level

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