

Title (en)

BIDIRECTIONAL POWER CONVERTER HAVING INTERMEDIATE CIRCUIT

Title (de)

BIDIREKTIONALER STROMRICHTER MIT ZWISCHENKREIS

Title (fr)

CONVERTISSEUR DE PUISSANCE BIDIRECTIONNEL AYANT UN CIRCUIT INTERMÉDIAIRE

Publication

EP 4038735 A1 20220810 (DE)

Application

EP 20760436 A 20200819

Priority

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Abstract (en)

[origin: WO2021063593A1] The invention relates to a power converter having a three-phase alternating current input and output (L1, L2, L3, N), a first power converter stage (1) having a first input and output and a second input and output (13, 14), an intermediate circuit (3), a second power converter stage (2) having a first input and output (21, 22) and a second input and output (23, 24) and a direct current output (A), wherein the first input and output of the first power converter stage (1) is electrically connected to the three-phase alternating current input and output (L1, L2, L3, N) and the second input and output (13, 14) of the first power converter stage (1) is electrically connected to the intermediate circuit (3). Power converters are used in charging devices for electrical vehicles. Known transformerless power converters currently require many power electronic stages for charging electric vehicles on single-phase alternating current grids, two-phase alternating current grids and three-phase alternating current grids, and therefore charging devices for universal use on single-, two- or three-phase alternating current grids are costly. Therefore, there is demand for a cost-effective and compact charging device for electric vehicles. Compensating currents which can flow into the vehicle as a result of parasitic leakage capacitances of the battery or other components should be suppressed in order not to adversely influence the functionality of protection devices against electrical danger to people. Circuit parts required for single- and multi-phase operation should be used in different functions, depending on operating mode, in order to minimize the expense for the charging device.

IPC 8 full level

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CPC (source: CN EP US)

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