

Title (en)

CONTROL OF ELECTRICAL CONVERTER WITH PARALLELED HALF-BRIDGES

Title (de)

STEUERUNG EINES ELEKTRISCHEN WANDLERS MIT PARALLEL GESCHALTETEN HALBBRÜCKEN

Title (fr)

COMMANDE DE CONVERTISSEUR ÉLECTRIQUE À DEMI-PONTS EN PARALLÈLE

Publication

EP 3724983 A1 20201021 (EN)

Application

EP 18814969 A 20181213

Priority

- EP 17206942 A 20171213
- EP 2018084777 W 20181213

Abstract (en)

[origin: WO2019115701A1] An electrical converter (10) comprises at least two phase branches (12A, 12B, 12C, 12N), each phase branch comprising at least two half-bridges (16), which are connected in parallel to a DC link (14) and which are connected via midpoints (18) for providing a phase output (A, B, C, N) for the phase branch. A method for controlling an electrical converter (10) comprises: determining setpoint phase signals ($V_{i,ABC}^*$) for the phase branches from actual phase voltages ($V_{ABC,0}$) and actual phase currents ($i_{L,ABC,0}$), which are determined from measurements, and from reference phase voltages (V_{dq0}^*) for the phase branches (12A, 12B, 12C, 12N); determining a phase duty cycle (d_A, d_B, d_C, d_N) for each phase branch (12A, 12B, 12C, 12N) from the setpoint phase signals ($V_{i,ABC}^*$); determining a half-bridge duty cycle ($d_{Aj}, d_{Bj}, d_{Cj}, d_{Nj}$) for each half-bridge (16) by adding a duty cycle correction ($\Delta d_{Aj}, \Delta d_{Bj}, \Delta d_{Cj}, \Delta d_{Nj}$) for the half-bridge (16) to the phase duty cycle (d_A, d_B, d_C, d_N) for the phase branch (12A, 12B, 12C, 12N) to which the half-bridge (16) belongs, wherein the duty cycle correction is determined from actual half-bridge output currents ($i_{L,Aj,0}, i_{L,Bj,0}, i_{L,Cj,0}, i_{L,Nj,0}$) of the half-bridges (16) of the phase branch, which actual half-bridge output currents ($i_{L,Aj,0}, i_{L,Bj,0}, i_{L,Cj,0}, i_{L,Nj,0}$) are determined from measurements.

IPC 8 full level

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CPC (source: EP US)

H02M 1/0025 (2021.05 - EP); **H02M 7/493** (2013.01 - EP US); **H02M 1/0043** (2021.05 - EP US)

Citation (search report)

See references of WO 2019115701A1

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