

Title (en)

BURST OPERATION WITH VARIABLE BURST FREQUENCY AND VARIABLE BURST DUTY CYCLE FOR OPERATION OF DC/DC CONVERTERS HAVING LOW OUTPUT POWER OR CURRENT

Title (de)

BURST BETRIEB MIT VARIABLER BURST FREQUENZ UND VARIABLEM BURST TASTGRAD FÜR BETRIEB VON DC/DC WANDLERN MIT NIEDRIGER AUSGANGSLEISTUNG ODER -STROM

Title (fr)

FONCTIONNEMENT EN RAFALE AVEC FRÉQUENCE DE RAFALE VARIABLE ET CYCLE DE SERVICE DE RAFALE VARIABLE POUR LE FONCTIONNEMENT DE CONVERTISSEURS CC/CC À FAIBLE PUISSANCE OU COURANT DE SORTIE

Publication

EP 4381593 A1 20240612 (DE)

Application

EP 22732016 A 20220520

Priority

- DE 102021208417 A 20210803
- EP 2022063785 W 20220520

Abstract (en)

[origin: WO2023011777A1] The invention relates to a method for operating a clocked electronic power converter having an output power range for operating a connectable load, the output power range resulting from a permissible output voltage range and a permissible output current range, and the power converter having a switch, an inductance and an on-off keying device. The method is characterised by the following steps: - in a first mode of operation, which ranges from the maximum output current of the power converter of 100% to a reduced output current, setting the on-off keying device to a burst duty cycle of 100%, and adjusting the converter clock frequency or the switch-on time period of the switch, in order to increase or to reduce the output current of the power converter for the load, - in a second mode of operation, which ranges from the reduced output current to the minimum output current, maintaining the converter clock frequency or a minimum switch-on time period of the switch and setting the burst duty cycle, in order to change the working point and thereby to further reduce the output current of the clocked converter for the load. An on-off keying burst frequency is reduced from a burst duty cycle lying in the range from 40% to 20%, with a decreasing burst duty cycle, in order to keep a ripple of the output current in a required range, and the burst frequency at the burst duty cycle lying in the range from 40% to 20%, is higher by the factor 2 to 40, preferably by the factor 3 to 15, than the burst frequency at the minimum duty cycle.

IPC 8 full level

H02M 1/00 (2006.01); **H02M 3/00** (2006.01); **H02M 3/156** (2006.01); **H02M 3/335** (2006.01); **H05B 45/3725** (2020.01)

CPC (source: EP)

H02M 1/0035 (2021.05); **H02M 3/01** (2021.05); **H02M 3/156** (2013.01); **H02M 3/33571** (2021.05); **H05B 45/3725** (2020.01)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

DE 102021208417 A1 20230209; EP 4381593 A1 20240612; WO 2023011777 A1 20230209

DOCDB simple family (application)

DE 102021208417 A 20210803; EP 2022063785 W 20220520; EP 22732016 A 20220520