

Title (en)

METHOD AND APPARATUS FOR REDUCING THE INRUSH CURRENT OF AN IMPLANTED ELECTRICAL DEVICE

Title (de)

VERFAHREN UND VORRICHTUNG ZUR VERRINGERUNG DES EINSCHALTSTROMS EINES IMPLANTIERTEN ELEKTRISCHEN GERÄTS

Title (fr)

PROCÉDÉ ET APPAREIL POUR RÉDUIRE LE COURANT D'APPEL D'UN DISPOSITIF ÉLECTRIQUE IMPLANTÉ

Publication

EP 4176508 A1 20230510 (DE)

Application

EP 21739643 A 20210702

Priority

- DE 102020117504 A 20200702
- EP 2021068349 W 20210702

Abstract (en)

[origin: WO2022003162A1] The invention relates to a method for reducing the inrush current of an electrical device operated by means of a battery and/or an accumulator, which device is designed as a medical device which can be implanted in a patient and has an electronic circuit which is supplied with electrical energy via at least two supply potential lines, wherein the electronic circuit has a plurality of backup capacitors, each of which is connected or connectable by means of a first terminal to one of the at least two supply potential lines and by means of a second terminal to another of the at least two supply potential lines, characterized in that the electrical device has an energy management system by means of which one or more parts of the electronic circuit are switched off in an energy-saving mode and are switched on again when the energy-saving mode is exited, wherein the backup capacitors, individually or in a plurality of groups via one switching element per capacitor or group of capacitors, are disconnected from at least one of the supply potential lines in a switched-off state of the switching element and can be connected thereto in a switched-on state of the switching element, wherein the switching elements are switched on with at least a partial time delay relative to one another when the electrical device is switched on and when the circuit parts which are switched off in the energy-saving mode are switched on again.

IPC 8 full level

H02M 1/32 (2007.01); **H02M 1/00** (2006.01); **H02M 1/14** (2006.01); **H02M 1/36** (2007.01)

CPC (source: EP US)

H02J 7/00304 (2020.01 - US); **H02J 7/345** (2013.01 - US); **H02M 1/008** (2021.05 - EP); **H02M 1/15** (2013.01 - EP); **H02M 1/32** (2013.01 - EP); **H02M 1/36** (2013.01 - EP); **H02J 2207/20** (2020.01 - US); **H02J 2310/23** (2020.01 - US)

Citation (search report)

See references of WO 2022003162A1

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 102020117504 A1 20220105; EP 4176508 A1 20230510; US 2023253819 A1 20230810; WO 2022003162 A1 20220106

DOCDB simple family (application)

DE 102020117504 A 20200702; EP 2021068349 W 20210702; EP 21739643 A 20210702; US 202118011960 A 20210702