

Title (en)

CONVERTER AND SUBMODULE OF A CONVERTER FOR CHARGING OR DISCHARGING AN ENERGY STORE

Title (de)

UMRICHTER UND SUBMODUL EINES UMRICHTERS ZUM LADEN ODER ENTLADEN EINES ENERGIESPEICHERS

Title (fr)

CONVERTISSEUR ET SOUS-MODULE D'UN CONVERTISSEUR DESTINÉ À CHARGER OU DÉCHARGER UN RÉSERVOIR D'ÉNERGIE

Publication

EP 2502340 A1 20120926 (DE)

Application

EP 09771516 A 20091119

Priority

EP 2009065491 W 20091119

Abstract (en)

[origin: WO2011060823A1] The invention relates to a submodule (13) for charging or discharging an energy store (22), comprising a capacitor unit (14) and a power semiconductor circuit (15) having power semiconductors (16, 17) that can be switched on and off, wherein the capacitor unit (14) and power semiconductor circuit (15) are connected to each other such that, after actuating the power semiconductors (16, 17) of the power semiconductor circuit (15), at least the voltage released at the capacitor unit (14) or a zero voltage can be produced at output terminals (19, 20) of the submodule (13). In order to provide such a submodule which allows individual adaptation of the charging operation to the requirements of the particular energy store and which, furthermore, is cost-effective, according to the invention the energy store (22) can be connected to the submodule (13) via a DC-DC regulator (21). The DC-DC regulator (21) is connected to the capacitor unit (14) and is designed to convert a capacitor voltage (Uc) released at the capacitor unit (14) into a charge voltage (UL) that is required for charging the energy store (22), and to convert a discharge voltage (EL) released at the energy store (22) during discharge into the capacitor voltage (UC).

IPC 8 full level

H02M 7/483 (2007.01)

CPC (source: EP US)

H02M 7/483 (2013.01 - EP US)

Citation (search report)

See references of WO 2011060823A1

Citation (examination)

- DE 10103031 A1 20020725 - MARQUARDT RAINER [DE]
- LESNICAR ET AL: "A new modular voltage source inverter topology", 20030101; 20030000, 1 January 2003 (2003-01-01), XP002447361
- MARQUARDT ET AL: "New Concept for High Voltage - Modular Multilevel Converter", POWER ELECTRONICS SPECIALISTS CONFERENCE, 2004. PESC 04. 2004 IEEE 35TH ANNUAL, AACHEN, GERMANY 20-25 JUNE 2004, PISCATAWAY, NJ, USA, IEEE, US, 1 January 2004 (2004-01-01), XP002447362, ISBN: 978-0-7803-8399-9

Cited by

WO2020225332A1; FR3095909A1

Designated contracting state (EPC)

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 SE SI SK SM TR

DOCDB simple family (publication)

WO 2011060823 A1 20110526; BR 112012012140 A2 20160412; CN 102714471 A 20121003; CN 102714471 B 20160113; EP 2502340 A1 20120926; HK 1174744 A1 20130614; RU 2012125250 A 20131227; RU 2524363 C2 20140727; US 2012229080 A1 20120913; US 8981712 B2 20150317

DOCDB simple family (application)

EP 2009065491 W 20091119; BR 112012012140 A 20091119; CN 200980163312 A 20091119; EP 09771516 A 20091119; HK 13101585 A 20130205; RU 2012125250 A 20091119; US 200913510341 A 20091119