

Title (en)
MODULAR MULTILEVEL CONVERTER WITH SWITCH FREQUENCY CONTROL USING FLUX ERROR HYSTERESIS

Title (de)
MODULARER MULTILEVELUMRICHTER MIT SCHALTFREQUENZREGELUNG MITTELS FLUSSFEHLERHYSTERESE

Title (fr)
CONVERTISSEUR MULTINIVEAU MODULAIRE À RÉGLAGE DE FRÉQUENCE DE COMMUTATION PAR HYSTÉRÉSIS DE DÉFAUT DE FLUX

Publication
EP 3526893 A1 20190821 (DE)

Application
EP 16805083 A 20161130

Priority
EP 2016079283 W 20161130

Abstract (en)
[origin: WO2018099552A1] The invention relates to, among others, a method for operating a modular multilevel converter (10) which has at least one converter module (KM1-KM6) with sub-modules (SM) electrically connected in series. Each sub-module (SM) comprises at least two switches (S) and an energy storage unit. In the method, the voltage at the at least one converter module (KM1-KM6) is ascertained, thereby forming actual voltage values (U_k). The actual voltage values (U_k) are compared with target voltage values (U_{ks}), and at least one of the switches (S) of the submodules (SM) is switched if a voltage deviation value (H) formed based on the differential values between the actual voltage values (U_k) and the target voltage values (U_{ks}) deviates by a degree defined by a specified hysteresis band which is determined by an upper hysteresis band threshold (+H_{max}) and a lower hysteresis band threshold (-H_{max}). The upper hysteresis band threshold, the lower hysteresis band threshold, or both hysteresis band thresholds are modified in a regular or irregular manner with a control variable (K) in order to achieve a specified converter behavior, and the control variable (K) is formed using at least one measurement value. According to the invention, the current flowing through the converter module (KM1-KM6) is measured, thereby forming a current measurement value (I_k), and the control variable (K) is formed at least also using the current measurement value (I_k).

IPC 8 full level
H02M 7/483 (2007.01); **H02M 1/00** (2006.01)

CPC (source: EP US)
H02M 7/483 (2013.01 - EP US); **H02M 7/4835** (2021.05 - EP US); **H02M 1/0003** (2021.05 - EP); **H02M 1/0054** (2021.05 - EP); **Y02B 70/10** (2013.01 - EP)

Citation (search report)
See references of WO 2018099552A1

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

DOCDB simple family (publication)
WO 2018099552 A1 20180607; EP 3526893 A1 20190821

DOCDB simple family (application)
EP 2016079283 W 20161130; EP 16805083 A 20161130