

Title (en)

ELECTRICALLY ISOLATED PRECHARGING AND INSULATION MONITORING OF A CONVERTER FOR COUPLING A GROUNDED AC SUPPLY SYSTEM TO AN UNGROUNDED DC SUPPLY SYSTEM

Title (de)

GALVANISCH GETRENNTE VORLADUNG UND ISOLATIONSÜBERWACHUNG EINES STROMRICHTERS ZUM KOPPELN EINES GEERDETEN AC NETZES MIT EINEM UNGEERDETEN DC NETZ

Title (fr)

PRÉCHARGE À ISOLATION GALVANIQUE ET CONTRÔLE D'ISOLEMENT D'UN CONVERTISSEUR DE PUISSANCE POUR LE COUPLAGE D'UN RÉSEAU ÉLECTRIQUE CA MIS À LA TERRE À UN RÉSEAU ÉLECTRIQUE CC NON MIS À LA TERRE

Publication

EP 4244967 A1 20230920 (DE)

Application

EP 21811304 A 20211112

Priority

- DE 102020129919 A 20201112
- EP 2021081549 W 20211112

Abstract (en)

[origin: WO2022101421A1] The application describes a converter (10) for power transfer between an AC end (16) of the converter (10) and a DC end (18) of the converter (10), the AC end (16) of the converter (10) being connectable to a grounded three-phase AC power supply system (12), and the DC end (18) of the converter (10) being connectable to an ungrounded DC supply system (14). The converter (10) includes a bridge circuit (20), the AC terminals (ACL1, ACL2, ACL3) of which can be connected to the AC end (16) of the converter (10) via AC switches (22), and the DC terminals (DCL+, DCL-) of which can be connected to the DC end (18) of the converter (10) via isolating switches (26.1, 26.2), a DC link of the converter (10) being chargeable from the AC power supply system (12) via an electrically isolating AC precharging circuit (40). The converter also includes an insulation monitor (34) configured to measure the insulation resistance (50) of the DC end (18) of the converter (10) when the AC precharging circuit (40) is connected to the DC link (18). The application further describes a method for supplying an ungrounded DC supply system (14) from a grounded three-phase AC power supply system (12) by means of a transformerless converter (10).

IPC 8 full level

H02M 1/32 (2007.01); **H02M 1/36** (2007.01); **H02M 7/797** (2006.01)

CPC (source: EP US)

H02J 1/00 (2013.01 - US); **H02M 1/0009** (2021.05 - US); **H02M 1/32** (2013.01 - EP US); **H02M 1/36** (2013.01 - EP); **H02M 7/04** (2013.01 - US); **H02M 7/797** (2013.01 - EP); **G01R 27/025** (2013.01 - EP); **H02H 7/268** (2013.01 - EP)

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)

WO 2022101421 A1 20220519; CN 116438733 A 20230714; DE 102020129919 A1 20220512; EP 4244967 A1 20230920; JP 2023549104 A 20231122; US 2023291303 A1 20230914

DOCDB simple family (application)

EP 2021081549 W 20211112; CN 202180076323 A 20211112; DE 102020129919 A 20201112; EP 21811304 A 20211112; JP 2023526551 A 20211112; US 202318316286 A 20230512