

Title (en)

METHOD FOR CONTROLLING THE ELECTROMAGNETIC TORQUE OF A HIGH SPEED SYNCHRONOUS MACHINE

Title (de)

VERFAHREN ZUR STEUERUNG DES ELEKTROMAGNETISCHEN DREHMOMENTS FÜR EINE HOCHGESCHWINDIGKEITSSYNCHRONMASCHINE

Title (fr)

PROCEDE DE COMMANDE DU COUPLE ELECTROMAGNETIQUE D'UNE MACHINE SYNCHRONE A HAUTE VITESSE

Publication

EP 2856632 A1 20150408 (FR)

Application

EP 13727299 A 20130516

Priority

- FR 1254908 A 20120529
- FR 2013051066 W 20130516

Abstract (en)

[origin: WO2013178906A1] A method for controlling the electromagnetic torque of a three-phase synchronous machine with permanent magnets, which comprises measuring the current delivered to the three phases of the machine, transposing the three measured currents into a direct current component (Id) and a quadratic current component (Iq) using Park's transformation, and receiving an instruction (Iq_req) for the quadratic current component (Iq). When the direct current component (Id) is negative, a defluxing control mode is activated in which the machine is controlled from a direct voltage component (Ud) and a quadratic voltage component (Uq) of said machine, the direct voltage component (Ud) and the quadratic voltage component (Uq) being determined in Park's plane.

IPC 8 full level

H02P 21/00 (2006.01)

CPC (source: EP KR RU US)

H02P 21/00 (2013.01 - RU); **H02P 21/0089** (2013.01 - EP KR US); **H02P 21/08** (2013.01 - RU); **H02P 21/12** (2013.01 - RU); **H02P 21/141** (2013.01 - US); **H02P 27/06** (2013.01 - RU)

Citation (search report)

See references of WO 2013178906A1

Citation (examination)

- ZHU LEI ET AL: "Deep field-weakening control of PMSMs for both motion and generation operation", ELECTRICAL MACHINES AND SYSTEMS (ICEMS), 2011 INTERNATIONAL CONFERENCE ON, IEEE, 20 August 2011 (2011-08-20), pages 1 - 5, XP032020238, ISBN: 978-1-4577-1044-5, DOI: 10.1109/ICEMS.2011.6073476
- ZHU LEI ET AL: "A new deep field-weakening strategy of IPM machines based on single current regulator and voltage angle control", ENERGY CONVERSION CONGRESS AND EXPOSITION (ECCE), 2010 IEEE, IEEE, PISCATAWAY, NJ, USA, 12 September 2010 (2010-09-12), pages 1144 - 1149, XP031787062, ISBN: 978-1-4244-5286-6, DOI: 10.1109/ECCE.2010.5617844

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 2013178906 A1 20131205; BR 112014029817 A2 20190730; CN 104350675 A 20150211; CN 104350675 B 20170804; EP 2856632 A1 20150408; FR 2991525 A1 20131206; FR 2991525 B1 20140613; JP 2015530059 A 20151008; JP 6192715 B2 20170906; KR 20150021546 A 20150302; RU 2014153510 A 20160720; RU 2635655 C2 20171115; US 2015194919 A1 20150709; US 9455660 B2 20160927

DOCDB simple family (application)

FR 2013051066 W 20130516; BR 112014029817 A 20130516; CN 201380027605 A 20130516; EP 13727299 A 20130516; FR 1254908 A 20120529; JP 2015514551 A 20130516; KR 20147036690 A 20130516; RU 2014153510 A 20130516; US 201314404515 A 20130516