Title (en)

METHOD AND DEVICE FOR DETERMINING AN OPERATING POINT OF A WORK MACHINE

Title (de)

VERFAHREN UND VORRICHTUNG ZUR BETRIEBSPUNKTBESTIMMUNG EINER ARBEITSMASCHINE

Title (fr)

PROCEDE ET DISPOSITIF DE DETERMINATION D'UN POINT DE FONCTIONNEMENT D'UNE MACHINE DE TRAVAIL

Publication

EP 2433010 A1 20120328 (DE)

Application

EP 10717116 A 20100427

Priority

- EP 2010055621 W 20100427
- DE 102009022107 A 20090520

Abstract (en)

[origin: WO2010133425A1] The present invention relates to a method and a device for determining an operating point of a work machine and/or of an asynchronous motor driving the same, wherein an operating point is characterized by a power consumed by the work machine and/or by the output rate thereof, one or more operating point-dependent measurement variables of the work machine are detected by one or more sensors, and the measured values are evaluated and/or stored during operation of the work machine. The operating point is determined without the use of electric measurement variables of the driving asynchronous motor in that a frequency that is linearly proportional to the fundamental tone of the work machine is determined by means of a signal analysis, in particular a frequency analysis, from one of the mechanical measurement variables of pressure, differential pressure, power, vibration, solid-borne or airborne sound. On the basis of this, the rotational speed (n) of the driving machine is determined, from which in turn the operating point characterized by the power (P2) consumed by the work machine and/or by the output rate (Q) thereof is determined using the rotational speed/torque dependency (M(n)) of the asynchronous motor (52).

IPC 8 full level

F04D 15/00 (2006.01)

CPC (source: EP US)

F04D 15/0088 (2013.01 - EP US); **F04D 15/0094** (2013.01 - EP)

Citation (search report)

See references of WO 2010133425A1

Cited by

WO2019096545A1; US11487262B2; DE102017214203A1; WO2019034426A2; DE102020005050A1; WO2022038026A1; US11475129B2

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)

DE 102009022107 A1 20101125; BR PI1007672 A2 20160802; BR PI1007672 B1 20201027; CN 102439318 A 20120502; CN 102439318 B 20151021; DK 2433010 T3 20151221; EP 2433010 A1 20120328; EP 2433010 B1 20150923; ES 2556236 T3 20160114; HR P20151394 T1 20160212; HU E028262 T2 20161228; JP 2012527563 A 20121108; JP 5868846 B2 20160224; PL 2433010 T3 20160331; PT 2433010 E 20160126; RU 2011151763 A 20130710; RU 2536656 C2 20141227; SI 2433010 T1 20160129; US 2012111114 A1 20120510; US 8763464 B2 20140701; WO 2010133425 A1 20101125

DOCDB simple family (application)

DE 102009022107 A 20090520; BR PI1007672 A 20100427; CN 201080022540 A 20100427; DK 10717116 T 20100427; EP 10717116 A 20100427; EP 2010055621 W 20100427; ES 10717116 T 20100427; HR P20151394 T 20151221; HU E10717116 A 20100427; JP 2012511220 A 20100427; PL 10717116 T 20100427; PT 10717116 T 20100427; RU 2011151763 A 20100427; SI 201031081 T 20100427; US 201113300261 A 20111118