

Title (en)  
POLYPHASE BRUSHLESS DC MOTOR

Title (de)  
MEHRPHASIGER KOLLEKTORLOSER GLEICHSTROMMOTOR

Title (fr)  
MOTEUR A COURANT CONTINU POLYPHASE SANS COLLECTEUR

Publication  
**EP 1485987 A1 20041215 (EN)**

Application  
**EP 03735584 A 20030610**

Priority  
• DE 10228438 A 20020626  
• EP 0306023 W 20030610

Abstract (en)  
[origin: WO2004004111A1] Disclosed is a polyphase brushless DC motor (20) comprising a permanent-magnet rotor (28), a polyphase stator (22, 24, 26), and a polyphase full-bridge circuit that is assigned to the polyphase stator (22, 24, 26) and is provided with a plurality of bridge branches, each of which is provided with an upper field-effect power transistor (90, 108, 120) that is connected to a positive line (22) and a lower field-effect power transistor (96, 112, 124) that is connected to a negative line (100). Said motor (20) also comprises a rotor position sensor arrangement (30, 32, 34) which generates a plurality of mutually phase-shifted sensor signals (H1, H2, H3) when the motor (20) is in an operating state, the analogous value of said sensor signals (H1, H2, H3) depending on a rotor position-dependent physical variable that acts upon the rotor position sensor arrangement. Signals (54, 56, 58) that are derived from the rotor position sensor arrangement (30, 32, 34) are compared with a periodic sawtooth signal (u70) so as to obtain a plurality of comparative PWM signals (PWM1, PWM2, PWM3), the pulse duty factor of which is a function of the momentary value of the associated sensor signal (H1, H2, H3). The information contained in a comparative PWM signal is supplied to the two power field effect transistors (90, 96; 108, 112; 120, 124) of an associated bridge branch via one respective driver (86, 104, 116) in the form of signals that are in phase opposition in order to trigger said field effect transistors in a hard chopping mode and allow multiquadrant operation of the motor (20).

IPC 1-7  
**H02P 6/16**; H02P 7/29; H02K 29/08

IPC 8 full level  
**H02P 6/16** (2006.01); **H02P 27/08** (2006.01)

CPC (source: EP)  
**H02P 6/16** (2013.01); **H02P 27/08** (2013.01)

Citation (search report)  
See references of WO 2004004111A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2004004111 A1 20040108**; AU 2003236721 A1 20040119; DE 10326869 A1 20040122; EP 1485987 A1 20041215

DOCDB simple family (application)  
**EP 0306023 W 20030610**; AU 2003236721 A 20030610; DE 10326869 A 20030614; EP 03735584 A 20030610