

Title (en)  
COMMUTATORLESS POLYPHASE AC ELECTRIC MACHINE

Title (de)  
BURSTENLOSEN MEHRPHASIGEN WECHSELSTROMMOTOR

Title (fr)  
MACHINE ELECTRIQUE A COURANT ALTERNATIF POLYPHASE SANS COLLECTEUR

Publication  
**EP 0795229 A1 19970917 (FR)**

Application  
**EP 95937737 A 19951115**

Priority  
• CA 9500651 W 19951115  
• US 35324194 A 19941202

Abstract (en)  
[origin: WO9617429A1] A commutatorless polyphase AC electric machine including a rotor core with a surface having alternating parallel projections and slots. Each slot has an opening at the stator surface which is substantially as wide as the widest portion of the corresponding slot. The machine further includes a rotor core with a surface provided with magnets having respective surface sections facing the slots and projections. All the surface sections of the magnets generate a magnetic flux density with an average amplitude component  $B_r(\theta)$  that is perpendicular to the corresponding stator surface and substantially defined by equation (I), wherein  $L_a(\theta)$  is defined by equation (II), where  $\theta$  is an angular position in radians relative to a reference position on the rotor core;  $B_r(\theta)$  is an average amplitude component in angular position  $\theta$ ;  $L_v(\theta)$  is the spacing between the projections and the rotor core surface in angular position  $\theta$ ;  $M_r(\theta)$  is a residual magnet induction component in angular position  $\theta$ ,  $M_r(\theta)$  being perpendicular to the corresponding stator surface and alternating with a period corresponding to  $4\pi/K$ ; K is an even number representing all the surface sections; and C is an arbitrary constant. A method for operating said commutatorless polyphase AC electric machine is also disclosed.

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IPC 8 full level  
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