

Title (en)
POWER ELECTRONIC UNIT FOR A SYNCHRONOUS MOTOR

Title (de)
LEISTUNGSELEKTRONIK FÜR EINEN SYNCHRONMOTOR

Title (fr)
ELECTRONIQUE DE PUISSANCE POUR UN MOTEUR SYNCHRONE

Publication
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Application
EP 97951871 A 19971108

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Abstract (en)
[origin: WO9828838A1] In a synchronous motor a premagnetized rotor (permanent magnet or reluctance) is driven by a magnetic field generated in the stator coils synchronously in relation to the frequency of the driving current in the magnetic field thus generated. The problem that arises with this type of motor is that magnetic field energy stored in a stator coil cannot be exclusively converted into kinetic energy of the rotor. The invention aims to use in an advantageous manner this residual energy, which at present cannot be utilized. According to the invention, the problem is solved by providing an electronic power element for a synchronous motor, comprising means for transferring to another phase winding, by switching to said other phase winding, the residual energy which is stored in the inductance of one phase winding when said phase winding is subjected to an electric current but which is not converted into kinetic energy. In this way, the residual energy is not lost in the form of power loss, but is used again, under deduction of the losses that are inevitable for reasons of physics, for driving the rotor, although this time with the respective other phase winding.

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