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(54) Title: AN ELECTRONICALLY CONTROLLED UNIVERSAL MOTOR

(57) Abstract: An electric motor apparatus comprising: a stator component and a rotor component rotationally mounted coaxially with and within the stator component. The stator component and the rotor component each comprise windings configured to generate an electromagnetic field from an electric current. The electric motor further comprises an intermediate screening component rotationally mounted between the stator component and the rotor component and configured to provide at least some magnetic screening between the rotor component and the stator component. The intermediate screening component comprises at least some magnetically active sections configured such that changing magnetic fields generated by changing electric currents in the windings on either the rotor component or the stator component generate a force on the magnetically active sections causing the intermediate screening component to rotate; and control circuitry for independently controlling power supplied to the windings on the rotor component and the stator component in dependence upon a desired output rotational speed.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. H02K5/128 H02K11/00 H02K99/00 H02K16/02 H02P25/02
 ADD.
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 H02K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BE 477 451 A (H. BRASSEUR) 3 December 1947 (1947-12-03)	1-4, 10, 13-16
Y	Page 1, lines 1-3, 5-8, 13-21 Page 3, lines 1, 2 Page 4, line 2; figure All figures	5-9, 11, 12
Y	US 5 917 248 A (SEGUCHI MASAHIRO [JP] ET AL) 29 June 1999 (1999-06-29) abstract; figure 4	5
Y	EP 1 456 048 A2 (FIAT RICERCHE [IT]) 15 September 2004 (2004-09-15) Paragraph 2; figure 5	6-9
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Jabri, Tarak
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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2013/069566 A1 (PIETROMONACO D; PIETROMONACO D V) 21 March 2013 (2013-03-21) Paragraph 18; figure 5 -----	11,12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/GB2014/053178

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