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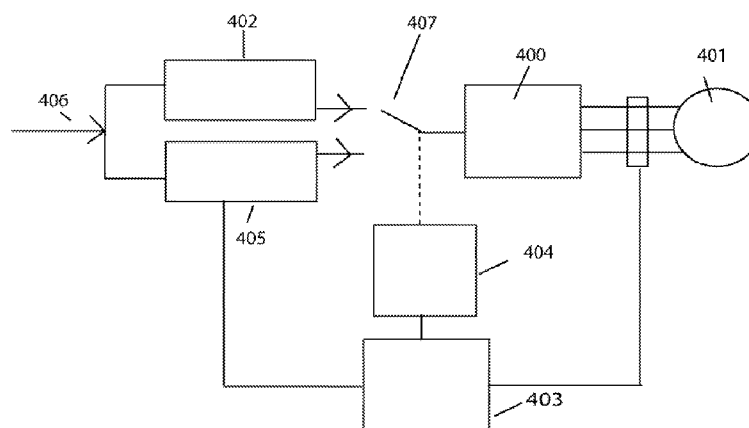


Figure 9

(57) Abstract: An observer (404), operating during a time when open loop control (402) is being used to drive a synchronous motor (401), the output of the observer (404) being a signal, E_I_angle , related to the angle between a rotational EMF vector and the current excitation vector, the observer (404) determining the angle by an iterative calculation incorporating a summation term, the summation term summing the variation of the quadrature component of a rotational EMF vector relative to an estimated EMF position vector, and using the angle output of the observer to update the estimate of the rotational EMF position vector. In a further aspect of the invention the observer output signal, E_I_angle , can be used to determine the transition to closed loop control (405), when the observer output signal reaches a value indicating conditions close to pull out conditions.



INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 H02P
 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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X A	GB 2 465 379 A (TECHNELEC LTD [GB]) 19 May 2010 (2010-05-19) page 6, line 27 - page 9, line 15	9,18-21 1-8, 10-17
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A	----- EP 1 852 967 A1 (LG ELECTRONICS INC [KR]) 7 November 2007 (2007-11-07) abstract -----	1-21

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

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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 Frapporti, Marc
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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