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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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**Declarations under Rule 4.17:**

— of inventorship (Rule 4.17(iv))

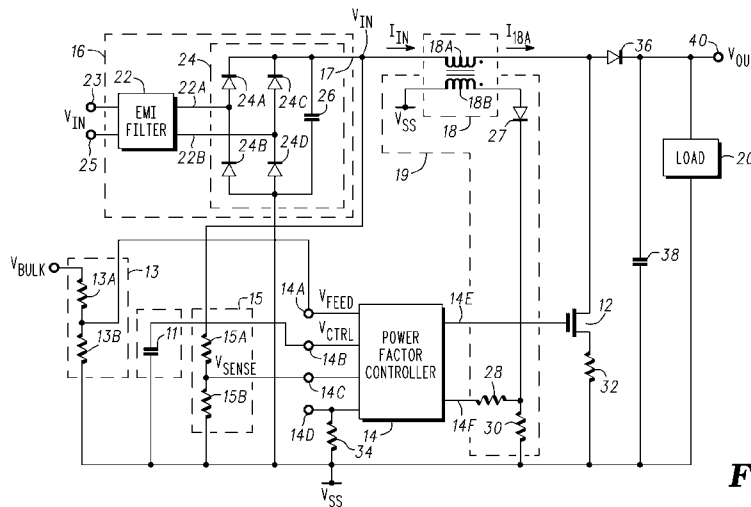
**Published:**

— with international search report (Art. 21(3))

**(88) Date of publication of the international search report:**

3 January 2013

(54) Title: POWER FACTOR CONTROLLER AND METHOD



**FIG. 1**

(57) Abstract: In accordance with an embodiment, a converter includes a power factor controller that varies the switching frequency of a switching transistor in accordance with a signal representative of power at the input of the converter.

WO 2012/087337 A3

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2010/062105A. CLASSIFICATION OF SUBJECT MATTER  
INV. H02M1/42  
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)  
H02M H02J H03K

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, COMPENDEX, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/203814 A1 (YE JUN [CN] ET AL) 14 September 2006 (2006-09-14) paragraphs [0007], [0009] - [0013], [0031] - [0057]; figures 1-5,8 -----	1-6,9
X	WO 2004/107546 A1 (SEMICONDUCTOR COMPONENTS IND [US]; TURCHI JOEL [FR]) 9 December 2004 (2004-12-09) abstract; figures 6,7 paragraph [0052] - paragraph [0057] ----- -/--	1-6,9

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

1 August 2012

Date of mailing of the international search report

12/10/2012

Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2010/062105

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2010/062105

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"SWITCHED MODE POWER SUPPLY WITH INPUT-VOLTAGE INDEPENDENT FREQUENCY SWITCH-OVER", RESEARCH DISCLOSURE, MASON PUBLICATIONS, HAMPSHIRE, GB, vol. 401, 1 September 1997 (1997-09-01), page 569, XP000726756, ISSN: 0374-4353 the whole document	1,4
X	----- US 2005/007088 A1 (YANG TA-YUNG [US] ET AL) 13 January 2005 (2005-01-13) abstract; figures 1-3 paragraph [0027] - paragraph [0035] -----	1,4

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2010/062105

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006203814	A1	14-09-2006	CN 1832309 A
			US 2006203814 A1
			US 2011204865 A1
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WO 2004107546	A1	09-12-2004	AU 2003228831 A1
			CN 1663101 A
			HK 1081334 A1
			TW I334256 B
			WO 2004107546 A1
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US 2005007088	A1	13-01-2005	CN 1849742 A
			US 2005007088 A1
			WO 2005006523 A1
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**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

Method for regulating the switching frequency of a converter according to the input current.

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2. claims: 10-18

Method for regulating the dead-time of an inductor current in a converter according to the input power.

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3. claims: 19-23

Converter including a power factor controller having multiple inputs wherein a first input is configured to convert a first signal into a content signal that carries information about the first signal.

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