

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h)) (88) Date of publication of the international search report³

INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2012/058046

A. CLASSIFICATION OF SUBJECT MATTER
INV. F25B49/02 G05B13/02
 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)
F25B G05B

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.
A	US 2003/115895 AI (BEAVERSON GREGORY K [US] ET AL) 26 June 2003 (2003-06-26) paragraphs [0006] - [0009], [0020] - [0022]; claims 1-16; figure 1 -----	1-15
A	US 5 735 134 A (LIU SHENG [US] ET AL) 7 April 1998 (1998-04-07) column 4, line 54 - column 5, line 52; figures 1, 17C -----	1-15
A	EP 1 715 184 AI (FISHER & PAYKEL APPLIANCES LTD [NZ]) 25 October 2006 (2006-10-25) paragraphs [0008], [0009], [0034]; figure 9 ----- -/--	1-15

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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 3 May 2013	Date of mailing of the international search report 15/05/2013
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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 Gasper, Ral f
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INTERNATIONAL SEARCH REPORT

International application No

PCT/JP2012/058046

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 742 347 B1 (KOLK RICHARD [US] ET AL) 1 June 2004 (2004-06-01) column 1, line 43 - column 2, line 28 -----	1-15
X	US 6 098 010 A (KRENER ARTHUR J [US] ET AL) 1 August 2000 (2000-08-01) corresponding description; figures 3,4,6,8 -----	16-20
X	W0 2009/012282 A2 (JOHNSON CONTROLS TECH CO [US]; LI YAOYU [US]; SEEM JOHN E [US]) 22 January 2009 (2009-01-22) paragraph [0034] - paragraph [0040] ; figures 4A,6,7 -----	16,19,20
X	W0 2009/012269 A2 (JOHNSON CONTROLS TECH CO [US]; LI YAOYU [US]; SEEM JOHN E [US]) 22 January 2009 (2009-01-22) paragraph [0041] - paragraph [0044] ; figures 6,7,11A/B -----	16-20
X	W0 2005/026854 A1 (CARRIER CORP [US]) 24 March 2005 (2005-03-24) paragraph [0049] - paragraph [0056] ; figure 4 -----	16-20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2012/058046

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. :

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/210

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

1. claims: 1-15

A method for adjusting a control signal based on a function of a phase between a perturbation signal and a metric signal.

2. claims: 16-20

An optimization controller comprising
a high-pass filter for determining a metric signal in response to receiving an output signal representing the performance of the system;
a low-pass filter for determining a constant term of a product of the perturbation signal and the metric signal;
an integrator for determining a modification value based on a sign of the constant term.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/JP2012/058046
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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			DE 112008001872 T5 12-08-2010
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