

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2018/067765

A. CLASSIFICATION OF SUBJECT MATTER**H02K 1/20**(2006.01)i; **H02K 3/24**(2006.01)i; **H02K 3/487**(2006.01)i; **H02K 9/19**(2006.01)n

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	US 2005012409 A1 (PHILIPPART OLIVIER [US]) 20 January 2005 (2005-01-20) paragraph [0038] - paragraphs [0047], [0075]; figures 2,4	1,2,4-12
X	US 2017063200 A1 (TREMELLING DARREN [US] ET AL) 02 March 2017 (2017-03-02) paragraphs [0030], [0053] - paragraph [0056]; figures 1,11C	1-12
X	EP 3029807 A1 (COMPACT DYNAMICS GMBH [DE]) 08 June 2016 (2016-06-08) paragraphs [0041], [0042], [0047]; figures 2,3	1-3,9-12
X	GB 2505909 A (NIDEC SR DRIVES LTD [GB]) 19 March 2014 (2014-03-19) figures 2,3	1-4,8-12
A	EP 3142225 A1 (SIEMENS AG [DE]) 15 March 2017 (2017-03-15) paragraph [0010]; figures 1,6,9	4-8
X	EP 1404002 A1 (MITSUBISHI ELECTRIC CORP [JP]) 31 March 2004 (2004-03-31) paragraph [0051] - paragraph [0053]; figure 6	1-3,8-12
A	US 2014139057 A1 (HO SE-KANG [TW] ET AL) 22 May 2014 (2014-05-22) paragraph [0022]; figure 2	4-6

 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

"&" document member of the same patent family

Date of the actual completion of the international search

19 November 2018

Date of mailing of the international search report

27 November 2018

Name and mailing address of the ISA/EP

European Patent Office
p.b. 5818, Patentlaan 2, 2280 HV Rijswijk
Netherlands

Telephone No. (+31-70)340-2040

Facsimile No. (+31-70)340-3016

Authorized officer

Kovacovics, Martin

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2018/067765

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010176669 A1 (HOULE MARTIN [CA] ET AL) 15 July 2010 (2010-07-15) figures 10,11	4-6
<hr/>		

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/EP2018/067765

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
US	2005012409	A1	20 January 2005	AT	408919	T	15 October 2008
				EP	1499001	A1	19 January 2005
				ES	2314351	T3	16 March 2009
				FR	2857794	A1	21 January 2005
				JP	4536455	B2	01 September 2010
				JP	2005051997	A	24 February 2005
				US	2005012409	A1	20 January 2005
US	2017063200	A1	02 March 2017	NONE			
EP	3029807	A1	08 June 2016	DE	102014017745	A1	02 June 2016
				EP	3029807	A1	08 June 2016
GB	2505909	A	19 March 2014	NONE			
EP	3142225	A1	15 March 2017	CN	108028561	A	11 May 2018
				EP	3142225	A1	15 March 2017
				EP	3317946	A1	09 May 2018
				WO	2017041995	A1	16 March 2017
EP	1404002	A1	31 March 2004	DE	60219165	T2	13 December 2007
				EP	1404002	A1	31 March 2004
US	2014139057	A1	22 May 2014	CN	103840569	A	04 June 2014
				TW	201421864	A	01 June 2014
				US	2014139057	A1	22 May 2014
				US	2017047805	A1	16 February 2017
US	2010176669	A1	15 July 2010	CN	102341999	A	01 February 2012
				EP	2384534	A1	09 November 2011
				JP	5692920	B2	01 April 2015
				JP	2012515518	A	05 July 2012
				KR	20110134388	A	14 December 2011
				US	2010176669	A1	15 July 2010
				WO	2010081216	A1	22 July 2010