

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2018/006647

A. CLASSIFICATION OF SUBJECT MATTER

H03K 17/16(2006.01)i, H03K 17/0412(2006.01)i, H03K 17/687(2006.01)i

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)

H03K 17/16; H02H 3/08; H01H 47/00; H03K 17/08; H03K 17/04; H03K 17/687; B60H 1/12; H01H 47/32; H03K 17/14; H03K 17/0412

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models: IPC as above
Japanese Utility models and applications for Utility models: IPC as aboveElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS (KIPO internal) & Keywords: switch, gate, driving, negative electrode, control, relay

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-2003-0030452 A (HYUNDAI MOTOR COMPANY) 18 April 2003 See pages 3-4, claim 1 and figure 1.	1-7
A	JP 2005-151767 A (YAZAKI CORP.) 09 June 2005 See paragraphs [0024]-[0045] and figures 1-2.	1-7
A	KR 10-1467717 B1 (PANASONIC CORPORATION) 01 December 2014 See paragraphs [0022]-[0046] and figures 2-3, 5-6.	1-7
A	KR 10-2011-0101076 A (HUR, Jeon) 15 September 2011 See paragraphs [0067]-[0094] and figures 2a-2b.	1-7
A	KR 10-2017-0009126 A (LSIS CO., LTD.) 25 January 2017 See paragraphs [0029]-[0065] and figure 2.	1-7

 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

30 AUGUST 2018 (30.08.2018)

Date of mailing of the international search report

30 AUGUST 2018 (30.08.2018)

Name and mailing address of the ISA/KR


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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2018/006647

Patent document cited in search report	Publication date	Patent family member	Publication date
KR 10-2003-0030452 A	18/04/2003	KR 10-0405565 B1	14/11/2003
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KR 10-1467717 B1	01/12/2014	CN 103262416 A	21/08/2013
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		EP 3118995 A1	18/01/2017
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