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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR HIGH VOLTAGE CABLE DETECTION IN HYBRID VEHICLES

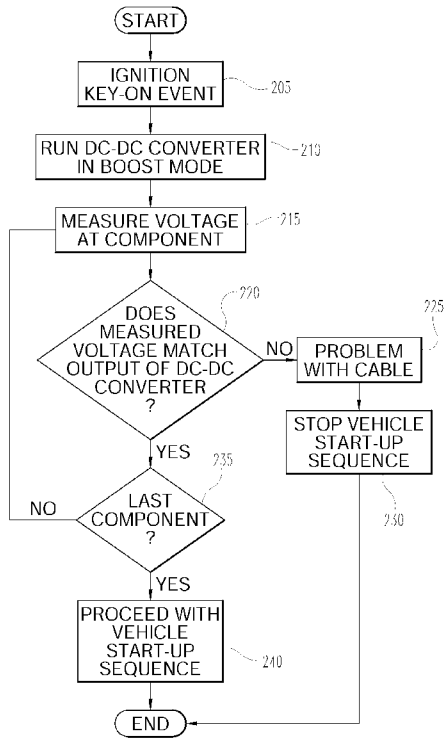


Fig. 2

(57) Abstract: A system and method described herein detects the presence of an unconnected condition in high voltage component cables in an electric or hybrid-electric vehicle having a high voltage battery or energy storage system. The system includes a DC-DC converter which is capable of operating in either a step-down mode (e.g., as a buck converter) or a boost mode. The system uses the DC-DC converter operating in boost mode to create a sufficient, yet safe, measuring voltage on the main high voltage cabling of the vehicle before allowing the energy storage system to begin supplying high voltage power to the system components. The measurements are taken at various points near the individual components to determine if the cable has become disconnected.

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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
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A. CLASSIFICATION OF SUBJECT MATTER**G01R 31/02(2006.01)i, B60W 20/00(2006.01)i, B60R 16/02(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)

G01R 31/02;B60R 16/02; B60L 3/00; G01M 15/00; G01R 31/00; B60W 20/00; H01M 8/10; B60R 16/02

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

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords:disconnect, hybrid, compare, DC-DC converter

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-0962855 B1 (HYUNDAI MOTOR COMPANY) 09 June 2010 See paragraphs [0032], [0051], [0061] and figure 1.	1-3, 8-12, 19-20
A	JP 2011-101590 A (HONDA MOTOR CO., LTD.) 19 May 2011 See paragraphs [0045],[0055]-[0057], claim 1 and figure 1.	1-3, 8-12, 19-20
A	KR 10-2009-0057138 A (TOYOTA JIDOSHA KABUSHIKI KAISHA) 03 June 2009 See paragraphs [0007]-[0008], [0019], [0030] and figures 1,3.	1-3, 8-12, 19-20
A	KR 10-0867834 B1 (HYUNDAI MOTOR COMPANY) 10 November 2008 See paragraph [0062], and figures 3, 7.	1-3, 8-12, 19-20
A	KR 10-0857987 B1 (CONTINENTAL AUTOMOTIVE SYSTEMS CORPORATION) 02 July 2005 See paragraphs [0019]-[0020] and figure 2.	1-3, 8-12, 19-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"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


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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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KR 10-0857987 B1	10.09.2008	None	