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[Continued on next page]

(54) Title: CONTROL CIRCUITRY AND METHOD FOR CONTROLLING A BI-DIRECTIONAL SWITCH SYSTEM, A BI-DIRECTIONAL SWITCH, A SWITCHING MATRIX AND A MEDICAL STIMULATOR

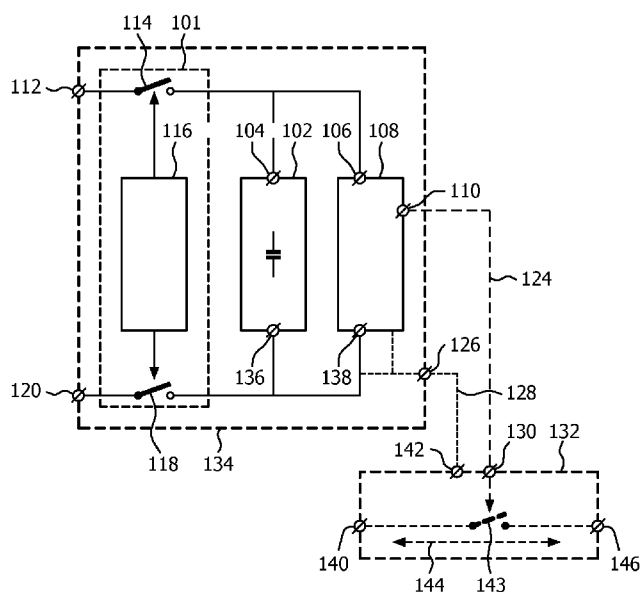


FIG. 1b

(57) Abstract: A control circuitry (134) and a method for controlling a bi-directional switch (132) is provided. The bi-directional switch (132) having a control terminal (130) for receiving a control voltage (124) to control an on state and an off state of the bi-directional switch (132) and at least one semiconductor switch in a bi-directional main current path. The control circuitry (134) comprises an energy storage element (102), a coupling means (101) to couple the energy storage element (102) to a supply voltage to charge the energy storage element (102), and a control circuit (108) configured to receive power from the energy storage element (102) and configured to supply the control voltage having a voltage level being independent of the supply voltage when the energy storage element (102) is not coupled to the supply voltage. The coupling means (101) is configured for only coupling the energy storage element (102) to the supply voltage when the bi-directional switch (132) is in the off state.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. H03K17/06 H03K17/66 H03K17/687
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)
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 practical, search terms used)

EP0-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	WO 2004/040761 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; DE CREMOUX GUILLAUME [NL]; VAN LO) 13 May 2004 (2004-05-13)	1,7,10,15
A	abstract; figures 1-3 page 4, line 8 - line 10 page 4, line 26 - page 5, line 9 -----	2,8,9,11,12
X	US 6 559 689 B1 (CLARK TIMOTHY A [US]) 6 May 2003 (2003-05-06)	1,7
A	abstract; figures 1,2,3a column 1, line 36 - line 47 column 2, line 11 - line 19 column 3, line 17 - line 24 column 4, line 12 - column 6, line 5 column 7, line 37 - line 45 ----- -/--	2,4,8,9,15

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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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 2009/184744 A1 (RICOTTI GIULIO [IT] ET AL) 23 July 2009 (2009-07-23) abstract; figures 3,4,6 paragraphs [0009], [0027], [0029], [0073], [0078], [0081], [0085], [0101] -----	1-4,6,7, 9-11,15
A,P	US 2010/214006 A1 (HANA ZAWA SATOSHI [JP] ET AL) 26 August 2010 (2010-08-26) figures 1a,3,4,9 paragraphs [0002], [0003], [0007], [0041], [0048] - [0050], [0053] - [0056], [0061], [0062], [0066], [0067] -----	1-4,6,7, 9-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

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