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(54) **Micro-electromechanical system based soft switching**

(57) A system (10) is presented. The system (10) includes detection circuitry (14) configured to detect occurrence of a zero crossing of an alternating source voltage (36) or an alternating load current (42). The system also includes switching circuitry (12) coupled to the detection circuitry (14) and comprising a micro-electromechanical

system switch (20). Additionally, the system (10) includes control circuitry (16) coupled to the detection circuitry (14) and the switching circuitry (12) and configured to perform arc-less switching of the micro-electromechanical system switch (20) responsive to a detected zero crossing of an alternating source voltage (36) or alternating load current (42).

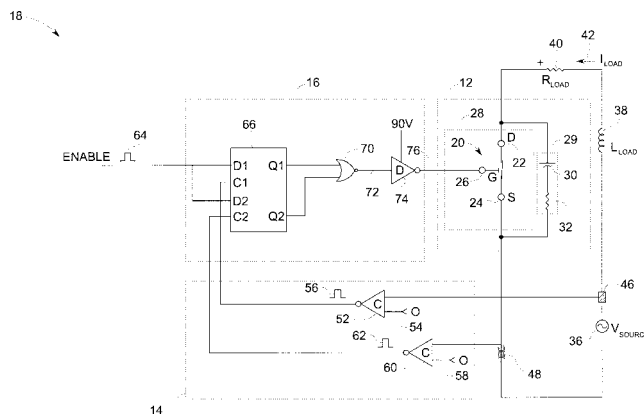


FIG. 2



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PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 07 11 0554 shall be considered, for the purposes of subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2006/202933 A1 (PASCH NICHOLAS F [US] ET AL) 14 September 2006 (2006-09-14) * paragraph [0238]; figures 1,2 *	1-3,5	INV. H01H59/00
Y	-----	4,6,8	
Y	US 5 430 597 A (BAGEPALLI BHARAT S [US] ET AL) 4 July 1995 (1995-07-04) * abstract; figures 1,2 *	6	
Y	US 2006/187688 A1 (TSURUYA MAMORU [JP]) 24 August 2006 (2006-08-24) * abstract; figure 5 *	4	
Y	US 3 496 409 A (CONNELL THOMAS R) 17 February 1970 (1970-02-17) * column 2, lines 53-58 *	8	
			TECHNICAL FIELDS SEARCHED (IPC)
			H01H H01F H01T
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
Munich		19 October 2007	Simonini, Stefano
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03 02 (P04C07)



European Patent
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**INCOMPLETE SEARCH
SHEET C**

Application Number
EP 07 11 0554

Claim(s) searched completely:
1-6,8

Claim(s) not searched:
7,9,10

Reason for the limitation of the search:

Claim 7 is unclear (Art.84 EPC) as it implies that a (load or switching) contact comprises a (MEMS) switch. This is nonsense, the opposite is normally true, i.e. a switch comprises contacts.

Claim 9 is also unclear, in that at line 8 it says that a trigger signal is configured to facilitate switching (...). Facilitate in what way? This is vague and undefined.

Moreover, at line 10 reference is made to "the" MEMS switch (20), although this is not previously defined in the claim. The scope of the overall protection is therefore unclear.

Claim 10 is dependent on claim 9 and is thus also considered unclear.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 11 0554

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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19-10-2007

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