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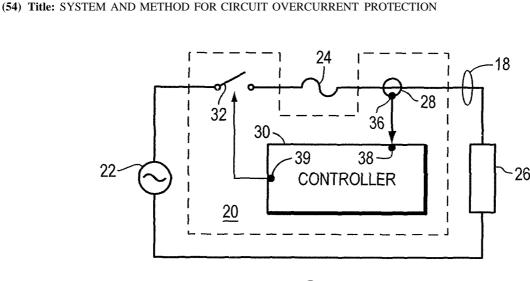
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# FIG. 1

'086108 A3 |||||||||| (57) Abstract: In one aspect, the invention provides a system for protecting a plurality of circuits including a plurality of circuit protective devices wherein each circuit protective device includes a respective nominal current rating. According to one embodiment, the system includes current sensing circuitry configured to measure a current of each circuit protective device; and a controller  $\widehat{\mathbf{\infty}}$ 200 configured to receive each of the measured currents. According to one embodiment, the controller is further configured to determine a ratio between a total current being carried by all of the circuit protective devices combined and a total nominal current rating of all of the circuit protective devices combined and employ the ratio to determine a modified nominal current rating of each circuit protective device, respectively. In a further embodiment, the controller is configured to generate an output signal to isolate a selected circuit selected from among the plurality of circuits based on the modified nominal current rating of the circuit protective device included in the selected circuit.

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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C. DOCUMENTS CONSIDERED TO BE RELEVANT										
Category*	Citation of document, with indication, where appropriate, of the rel	evant passages	Relevant to claim No.							
x	US 2006/221521 Al (VERONI FABIO 5 October 2006 (2006-10-05) paragraph [0033] - paragraph [00 paragraph [0042] - paragraph [00 figures 2,3	34]	1,2,6-8, 18							
X	.US 2002/027758 Al (OGLESBEE JOHN [US] ET AL OGLESBEE JOHN WENDELL AL) 7 March 2002 (2002-03-07) paragraph [0022] - paragraph [00 figures 1,2	WENDELL [US] ET 25];	1,3-5, 18-20							
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X Furthe	er documents are listed in the continuation of Box C.	X See patent family annex.								
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15 May 2008		15 JUL 2008								
Name and ma	ailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authoπzed officer Colombo, Alessandro								

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## INTERNATIONAL SEARCH REPORT

International application No PCT/US2008/050134

(^Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where approp $\pi$ ate, of the relevant passages	Relevant to claim No
Ρ.Χ	US 2007/103833 Al (HARRIS EDWIN J IV [US] HARRIS IV EDWIN J [US]) 10 May 20 <b>07</b> (2007-05-10) paragraph [0005] - paragraph [0008] paragraph [;0062] - paragraph [0063] paragraph [0103] - paragraph [0108]; figures 1,2,6,7	1-8, 18-20
A	US 5 170 311 A (ZULASKI JOHN A [US] ET AL) 8 December 1992 (1992-12-08) column 2 - column 3; figure 1	1,18

# INTERNATIONAL SEARCH REPORT

Information on patent family members

# International application No PCT/US2008/050134

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date (
US 2006221521	Al	05-10-2006	AU CN WO EP	2003222829 1788398 2004093283 1614203	<b>A</b> Al Al	04-11-2004 14-06-2006 28-10-2004 11-01-2006
<b>US</b> 2002027758	 Al	07-03-2002	JP NONE	2006524028		19-10-2006 ,
<b>us</b> 2007103833	Al	10-05-2007	CN DE 1 JP	<sup>.</sup> 1976156 102006052135 2007174889	Al	06-06-2007 12-07-2007 05-07-2007
<b>us</b> 5170311	A	08-12-1992	CA	2010168	Al	27-06-1991

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