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(54) Title: ELECTRICAL TEST DEVICE AND METHOD

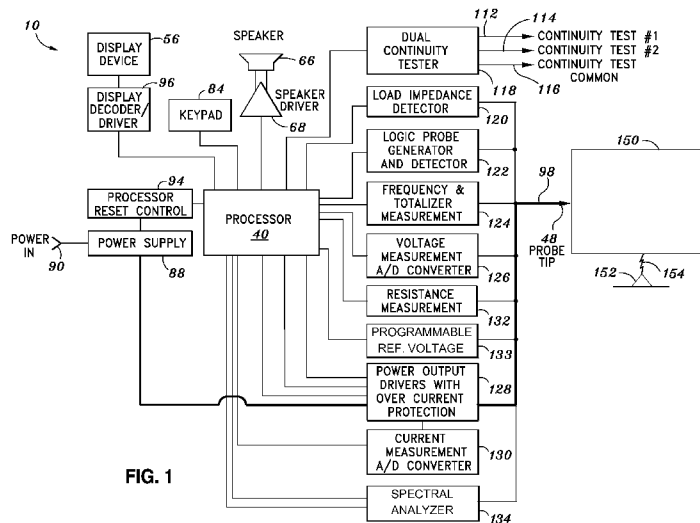
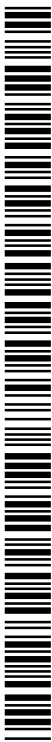


FIG. 1

(57) Abstract: An electrical test device may include a power supply, a conductive probe element, and a spectral analysis block. The power supply may be connected to an external power source. The probe element may be configured to be placed in contact with an electrical system under test and apply an input signal containing current for measuring at least one parameter of the electrical system. The spectral analysis block may be connected to the probe element and may be configured to receive an output signal from the electrical system in response to the application of the current to the electrical system. The spectral analysis block may be configured to analyze frequency spectra of the output signal and detect a broadband increase in energy of the frequency spectra above a predetermined energy threshold. The broadband increase in energy may be representative of the occurrence of arcing in the electrical system.



**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US 13/27195

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(8) - G01R 31/12 (2013.01)  
 USPC - 324/536  
 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)  
 USPC: 324/536

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 IPC(8): G01R 31/12 (2013.01); USPC: 324/527,530,531,536,500  
 (keyword limited; terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 PatBase; PubWEST(USPT,PGPB,EPAB,JPAB); Google Scholar  
 Search Terms: electrical test, probe, spectral, power, voltage, arc, low frequency, high frequency, threshold, current, computer, processor, amperage, input, signal, operating range, impedance.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2011/0238345 A1 (GAUTHIER et al.) 29 September 2011 (29.09.2011), entire document, especially; FIG 3a, para [0001], [0002], [0096], [0098], [0115], [0123]-[0125], [0128], [0132], [0141], [0151], [0169]-[0171], [0200], [0212].	1, 2, 4-6 ----- 3, 7-20
Y	US 2008/0106832 A1 (RESTREPO et al.) 08 May 2008 (08.05.2008), entire document, especially; para [0002], [0018], [0019], [0024].	3, 7-10
Y	US 5,064,987 A (BRAMAN) 12 November 1991 (12.11.1991), entire document, especially; col 1, ln 7-10, col 2, ln 63 to col 3, ln 20, col 4, ln 45 to col 5, ln 20, col 6, ln 11-62, col 8, ln 38 to col 9, ln 38.	11-20
A	US 4,983,910 A (MAJIDI-AHY et al.) 08 January 1991 (08.01.1991), entire document.	1-20
A	US 4,758,792 A (POLONIS et al.) 19 July 1988 (19.07.1988), entire document.	1-20
A	US 3,453,533 A (COX) 01 July 1969 (01.07.1969), entire document.	1-20

Further documents are listed in the continuation of Box C.

\* 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	

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