

证书号第452399号



发明专利证书

发明名称：用于电气设备的谐波诊断方法

发明人：高博

专利号：ZL 2004 8 0003728.4

专利申请日：2004年2月4日

专利权人：阿泰克株式会社

授权公告日：2008年12月17日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

本专利的专利权期限为二十年，自申请日起算。专利权人应当依照专利法及其实施细则规定缴纳年费。缴纳本专利年费的期限是每年02月04日前一个月内。未按照规定缴纳年费的，专利权自应当缴纳年费期满之日起终止。

专利证书记载专利权登记时的法律状况。专利权的转移、质押、无效、终止、恢复和专利权人的姓名或名称、国籍、地址变更等事项记载在专利登记簿上。

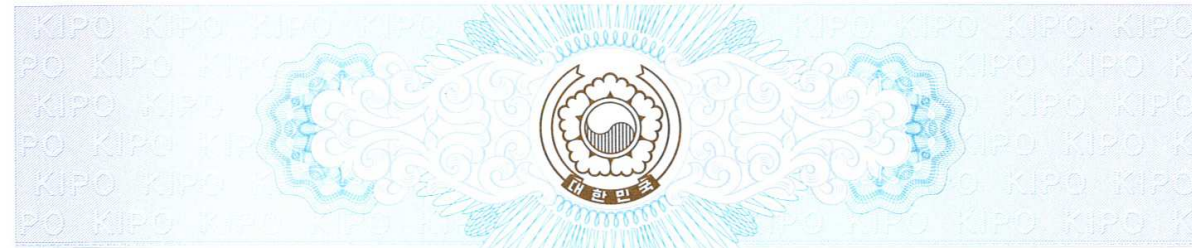


局长

田力普



2008年12月17日



특 허 증
CERTIFICATE OF PATENT

특 허 제 10-0616272 호 (PATENT NUMBER)	출원번호 (APPLICATION NUMBER)	제 2004-7005096 호
	출원일 (FILING DATE:YY/MM/DD)	2004년 04월 07일
	등록일 (REGISTRATION DATE:YY/MM/DD)	2006년 08월 21일

발명의명칭 (TITLE OF THE INVENTION)
전기 설비의 고조파 진단 방법

특허권자 (PATENTEE)
에이테크가부시키가이샤
174번지, 시즈이치 노나카쵸, 사교구, 교토시, 교토, 601-1122, 일본국

발명자 (INVENTOR)
고히로시
174번지, 시즈이치 노나카쵸, 사교구, 교토시, 교토, 601-1122, 일본국

위의 발명은 「특허법」에 의하여 특허등록원부에 등록되었음을 증명합니다.

(THIS IS TO CERTIFY THAT THE PATENT IS REGISTERED ON THE REGISTER OF THE KOREAN INTELLECTUAL PROPERTY OFFICE.)

2006년 08월 21일



특 허 청
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE





US007275003B2

(12) **United States Patent**
Koh

(10) **Patent No.:** US 7,275,003 B2
(45) **Date of Patent:** Sep. 25, 2007

(54) **HARMONIC DIAGNOSING METHOD FOR ELECTRIC FACILITY**

(56) **References Cited**

(75) **Inventor:** Hiroshi Koh, Kyoto (JP)

U.S. PATENT DOCUMENTS

(73) **Assignee:** ATEC Co. Ltd., Kyoto (JP)

5,739,698 A * 4/1998 Bowers et al. 324/772

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

FOREIGN PATENT DOCUMENTS

(21) **Appl. No.:** 10/525,227

JP 11-083686 3/1999
JP 2002-189064 7/2002
JP 2003-075516 3/2003

(22) **PCT Filed:** Feb. 4, 2004

(86) **PCT No.:** PCT/JP2004/001154

* cited by examiner

§ 371 (c)(1),
(2), (4) **Date:** Feb. 22, 2005

Primary Examiner—John Barlow
Assistant Examiner—Manuel L Barbee
(74) *Attorney, Agent, or Firm*—Baker & Hostetler LLP

(87) **PCT Pub. No.:** WO2004/070402

(57) **ABSTRACT**

PCT Pub. Date: Aug. 19, 2004

(65) **Prior Publication Data**

US 2006/0009932 A1 Jan. 12, 2006

(30) **Foreign Application Priority Data**

Feb. 7, 2003 (JP) 2003-30807
Feb. 14, 2003 (JP) 2003-36362

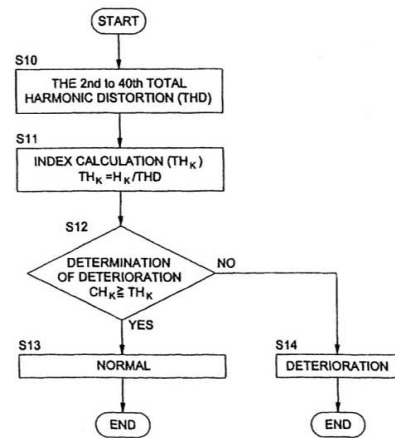
(51) **Int. Cl.**
G01R 25/00 (2006.01)

(52) **U.S. Cl.** 702/65; 702/38; 702/76;
324/522; 324/772

(58) **Field of Classification Search** 702/33-36,
702/38, 57-59, 64-66, 75-77, 182-185;
324/519, 522, 545, 546, 772; 340/648; 318/490
See application file for complete search history.

The present invention relates to a method of diagnosing deterioration by comparing an index value which is obtained by dividing the relative harmonic content of each order of the current harmonics flowing into an electric motor and inverter by the total harmonic distortion of the current harmonics up to the predetermined order, with a criteria value which is obtained by multiplying a harmonic function of each order formed of the index value by a calculated value for diagnosis of each order found through calculation from the relative harmonic content of each order. In the method, the degrees of deterioration of the electric motor and inverter are distinguished from each other by weighting the criteria value, and the deteriorated part is determined by a specific harmonic order of the current harmonics.

6 Claims, 7 Drawing Sheets



The
United
States
of
America



The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

Jon W. I. Dudas

Director of the United States Patent and Trademark Office