

International Conference on
Electronics, Information and Communication Engineering

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ICEICE - Number 6

Year of Publication: 2011

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{bibtex}iceice046.bib{/bibtex}

Abstract

In large machines, vibration is one of the important parameters used for fault diagnosis as well as for monitoring the overall conditions of the machines. The conventional methods give a poor resolution of the measurement, missing the peak values of the vibrations, which is an important

consideration for reliable operation of the machines. In the proposed work, a synchro and a fast rotating magnetic field (RMF) is used to measure the velocity of machine vibrations with high resolution in the millisecond range. Thus it easily records the peaks of vibration and even duration of the peak is also established. The broad spectrum of pulses within one second range, gives a pattern of variation including all possible values of instantaneous velocity of the machine vibrations. The measurement scheme is successfully tested with a microprocessor based rocking vibration arrangement and the overall performance is recorded at dynamic conditions.

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Index Terms

Computer Science
Information
Technology

Key words

machine vibrations

RMF based measurement
vibration transducer