

Title (en)  
MULTI-FUNCTION STRESS WAVE SENSOR

Title (de)  
MEHRFUNKTIONS-BELASTUNGSWELLENSENSOR

Title (fr)  
CAPTEUR MULTIFONCTIONS D'ONDES DE CONTRAINTE

Publication  
**EP 1390736 A4 20090722 (EN)**

Application  
**EP 01962029 A 20010810**

Priority  
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Abstract (en)  
[origin: WO02099411A1] A sensor (20) for detecting stress waves for use in a stress wave analysis system. The stress waves are (36) preferably detected in a narrow frequency range of 35-40KHz. At this range, stress waves from friction and impact sources typically propagate through machine structures at detectable amplitudes. In order to maximize the signal to noise ratio of stress waves, relative to background noise and vibration (34), the sensor (20) of the present invention is designed and calibrated with a frequency response and damping features that are specifically tailored for stress wave analysis. The sensor (20) is a multi-functional sensor that can measure a number of logically related parameters for indicating the mechanical condition of a machine. It is often desirable to measure both friction and one or more other parameters for indication of a machine's health where all of the measuring capability of the present invention significantly reduces the acquisition, installation, and maintenance costs of the condition monitoring instrumentation system.

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Citation (search report)  
• [X] FR 2695723 A1 19940318 - DUTRUEL ALBAIN [FR]  
• [X] US 5852793 A 19981222 - BOARD DAVID B [US], et al  
• [A] US 3924456 A 19751209 - VAHAVIOLOS SOTIRIOS JOHN  
• [A] US 4530240 A 19850723 - BOARD DAVID B [US], et al  
• [A] US 3842663 A 19741022 - HARTING D, et al  
• [T] PRUEFTECHNIK: "Machine condition data collector - vibrotip", INTERNET CITATION, XP003011401, Retrieved from the Internet <URL:http://www.prueftechnik.com/cm/products/vibrotip/vibrotip.htm> [retrieved on 20070208]  
• See references of WO 02099411A1

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