

Fiber Optic Sensor External Interpolation Demodulation

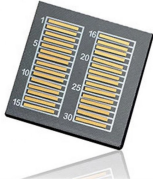


Overview

Abstract: A fast real-time demodulation method based on the coarsely sampled spectrum is proposed for transient signals of fiber optic extrinsic Fabry-Perot interferometers (EFPI) sensors. Based on the coarse. Fiber optic Fabry-Perot sensors have attracted a lot of attention in many fields such as medical detection, underwater acoustic detection, and electric power monitoring due to their high sensitivity and strong anti-interference ability.



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The Fabry-Perot cavity length is demodulated when the sensor interference frequency equals to the microwave frequency. The demodulation method that combines frequency-swept interference with ...



Therefore, in this work, we propose an algorithm of cavity length demodulation for optical fiber F-P sensors based on Nuttall window four-spectrum-line interpolation FFT. The simulation results of ...



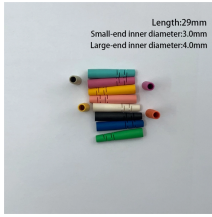
To verify the practical application of the multi-peak spectral demodulation algorithm, an experimental system was set up to validate the demodulation results of the fiber-optic MEMS sensor.



This work presents a compact hybrid fiber-optic sensor that integrates the packaged ring-shape MFI with the TFBG to realize wavelength-intensity dual demodulation for simultaneous pressure and ...



A phase demodulation algorithm based on the fast Fourier transform (FFT) extrinsic Fabry-Perot interferometer (EFPI) is proposed in this paper. The EFPI is usually of low reflectivity at the fiber end ...



Then, the influencing factors of the common demodulation methods are described in detail, and the improvement methods proposed by domestic and foreign research institutes are also introduced.



This paper discusses the commonly used demodulation algorithms and the high-resolution demodulation algorithm of OFFPI sensor. Through continuous improvement, the vernier demodulation algorithm ...



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For more information, pricing, or custom solutions, please contact us:

Website: <https://indzawo.co.za>

Email: sales@indzawo.co.za

Phone: +27 71 296 8473

Address: 22 Quantum Street, Midrand, 1685, Gauteng, South Africa

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