Parallel capacitor detection method

Abstract: This paper reports a novel capacitive detection method, called the sideband-ratio (SBR) detection, which is robust to variations of such critical parameters as the nominal capacitance, frequency, and amplitude of the probing voltage and gain of the transimpedance amplifier.

The invention discloses a parallel capacitor online circuit parameter detection method, including the following steps: 1) extracting transmission parameters of a standby voltage transformer and current transformer at 50Hz to 10kHz, and recording as a voltage compensation factor P1 and a current compensation factor Q1 respectively; 2) using the ...

Arc Fault Detection and Localization in Photovoltaic Systems Using Parallel Capacitors Qing Xiong1,2, Xianyong Feng2, Angelo L. Gattozzi2, Xiaojun Liu 1, Hang Yang, Shengchang Ji1, Lingyu Zhu1 ...

This paper describes an electrostatic experimental setup to measure the capacitance change when an uncharged object of arbitrary shape is inserted into a parallel plate capacitor.

Based on these results, in this paper we report a novel capacitive detection method with inherent self-calibration. We first describe a general electro-mechanical model of a resonator with parallel plate capacitive detection in Sec-tion 2. The parallel plate EAM pick-up signal is studied in Sec ...

The invention discloses a parallel capacitor online circuit parameter detection method, including the following steps: 1) extracting transmission parameters of a standby voltage transformer ...

One important point to remember about parallel connected capacitor circuits, the total capacitance (C T) of any two or more capacitors connected together in parallel will always be GREATER than the value of the largest capacitor in the group as we are adding together values. So in our simple example above, C T = 0.6uF whereas the largest value capacitor in ...

In this system, capacitor detection used a parallel capacitor structure with three plates. The plate material was copper foil, which offers excellent conductivity, good surface smoothness, good ductility, and a low price. According to the results in the optimization experiment for the structural parameters of the tri-plate capacitor, the length, width, and ...

Results showed that the parallel LC resonance method is capable of detecting a 20 µm iron particle and a 55 µm copper particle while detection limits for the non-resonance method are 45 and 125 ...

This study aims to design a sensor based on parallel-plate capacitors that can detect certain elements such as alkali and heavy metals ions, identifying variations of concentration, as well as finding the frequency

characteristics of these ele-ments. The samples used in this study are several types of

A detection method for series dc arc faults in a PV system based on time and frequency characteristics of a parallel capacitor current is proposed. Series and ...

Ways to detect with a capacitive sensor (non-fringing sensor): 1) Change the dielectric material, i.e. change ? r -> this can be difficult to do. 2) Change the electrode separation distance -> easy to do.

This study aims to design a sensor based on parallel-plate capacitors that can detect certain elements such as alkali and heavy metals ions, identifying variations of concentration, as well ...

Download scientific diagram | Parallel plate capacitor from publication: Advanced Interfacing Techniques for the Capacitive Sensors | Today, capacitive sensors are playing an important role in the ...

Internal short circuit (ISC) is a critical cause for the dangerous thermal runaway of lithium-ion battery (LIB); thus, the accurate early-stage detection of the ISC failure is critical to improving the safety of electric vehicles. In this paper, a model-based and self-diagnostic method for online ISC detection of LIB is proposed using the measured load current and terminal ...

Based on the current monitoring, the running status of the capacitor could be diagnosed. The paper analyzes the feasibility of this method, and designs a system for the on-line monitoring of the parallel compensation capacitor capacitance, combined with highpotential power supply and wireless acquisition and transmission technology. Finally ...

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