

This paper presents a fault detection and location for the capacitor aging faults in the DC filters of the power converters. The proposed ...

Being one of the most used passive components in power electronics, electrolytic capacitors have the shortest life span due to their wear-out failure which is mainly caused by vaporisation and deterioration of capacitor electrolyte. Knowing these two phenomena increase equivalent series resistance (ESR) of the capacitor, tracking ESR value over ...

2) V2 amplitude behavior for the capacitor filter C2: Since the ripple frequency of the output voltage of C 2 is directly related to the grid frequency f_o . Moreover, f_o is fixed at 60 Hz ...

Power conversion systems and methods are presented for detecting input filter capacitor degradation or approach of end of operational life based on filter capacitor current ...

A new method to detect the rise of equivalent series resistor in order to realize the online failure prediction of the electrolytic capacitor for LC filter of switching-mode power ...

Owing to the accurate detection and control of multiple harmonic currents, the actual working conditions of AC filter capacitors can be accurately simulated, and the reliable noise analysis ...

To achieve this, a short-circuit fault detection method is presented for low-voltage ring-type dc microgrid. This method uses the current dynamics of filter capacitors to identify the faulty zone.

EIA IS-479 standard, which unifies the life-time testing among capacitor manufacturers, defines capacitor life-time as the time at which 10% of the capacitors under the test have failed due to parametric failure (including ...

One of the most frequent reasons of breakdown of static power converters, and in particular switch mode power supplies, is the failure of filter electrolytic capacitors. With the use of time-worn capacitors, or by modelling the faults artificially, the authors have developed a fault ...

In this context, we aim at proposing a preliminary on-line method which allows the detection of faults concerning the output filter capacitor of a buck converter. As here discussed, model-based methods that exploit the innovation signal provided by the Kalman filter seem to provide an interesting solution. 1.

Figure-2: Notch filter by using switched-capacitor band-pass filter The center frequency of band-pass filter is chosen equal to the line frequency, the bandwidth is 10 Hz and the total gain is 1 ...

Figure 5: Some Testing points for the Capacitor Open Circuit Fault Diagnoses. 5. REFERENCES [1] A.M.R. Amaral and A. J. M. Cardoso, "Using Input Current and output voltage ripple to estimate the

The capacitors used in these filters are predominantly of the metallized film construction and are prone to catastrophic failure. In this paper, a method is proposed for the detection of capacitor degradation and location of the faulted phase. The method uses measurements of voltages and currents - which may already be available for control ...

One of the most frequent reasons of breakdown of static power converters, and in particular switch mode power supplies, is the failure of filter electrolytic capacitors. With the use of time-worn capacitors, or by modelling the faults artificially, the authors have developed a fault indicator. By comparing the latter with data representing the system during normal running, they have ...

In this article, we propose a cost-effective short-circuit fault detection method for a distribution network in the ac grid-connected low-voltage dc (LVdc) microgrid. In this method, a typical dc system is considered where a number of dc/dc, ac/dc power converters, and loads are interfaced to the dc link. Furthermore, these loads are dedicated as local loads to the converter based on ...

the controller 60 include at least one processor (e.g., a microprocessor, microcontroller, field programmable gate array, programmable logic, etc.) programmed or otherwise configured to identify suspected degradation of one or more of the filter capacitors CF of the filter circuit 20 based at least in part on the filter capacitor currents I_c flowing in the filter ...

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