

Is there a fault-tolerant control scheme for DC Islanded microgrids?

In this paper, an active fault-tolerant control scheme is proposed for DC islanded microgrids subjected to sensor fault and external disturbance. Firstly, a distributed H₂ observer is designed to estimate the uncorrupted voltage and current with high accuracy.

Can a distributed secondary consensus-based fault-tolerant control method overcome faults in MG?

Proposed distributed secondary consensus-based Fault-Tolerant control (FTC) method In this paper, the FTC method is proposed to overcome the impacts of faults in the MG based on a distributed consensus control method. The proposed controller can restore the system frequency, voltage, active and reactive power -sharing between DGs in MG.

What is fault tolerant control?

Fault Tolerant Control The estimated faults in C.T/P.T are used for corrections in the faulty sensors' (transformers) readings to avoid the wrong current/voltage readings to calculate the instantaneous powers and correspondingly generation of wrong PWM signals.

What are additive faults/disturbances in microgrid system?

The additive faults/disturbances are considered in the system, such that the sensor output is added up with different sinusoidal faults/disturbances, which compositely form the complete mathematical model of the faults actually occurring in the C.Ts/P.Ts.

2.2. Mathematical Model of Microgrid System

Can a sliding-mode observer detect faults in a voltage source converter based microgrid?

This work investigates sensor fault diagnostics and fault-tolerant control for a voltage source converter based microgrid (model) using a sliding-mode observer. It aims to provide a diagnosis of multiple faults (i.e., magnitude, phase, and harmonics) occurring simultaneously or individually in current/potential transformers.

Does secondary consensus FTC work in multi-agent microgrid?

Evaluating the performance of the proposed secondary consensus FTC method in the MG. This paper proposes a distributed secondary consensus fault-tolerant control (FTC) method for the multi-agent microgrid (MG). The proposed controller is applied to compensate for the errors in the system frequency and voltage profiles in the presence of MG faults.

To completely avoid the impact of cyber-attacks and to deal with the disturbances and actuator faults, this paper has proposed a decentralized fault-tolerant control (FTC) by using input ...

Keywords DC microgrid ; Fault-tolerant control ; Sensor fault ; Extended Luenberger observer ; Cascaded control

1 Introduction Ever since the boost of renewable energy sources (RES) like ...

Currently, many articles focus on control techniques; however, little has been written about the techniques of control, hierarchical control, and fault-tolerant control (FTC) ...

The main objective is to increase the reliability and safety margins of isolated smart microgrids in the presence of different sensor faults on the secondary control. ...

This paper presents a sensor fault tolerant control approach for grid connected microgrids. The proposed approach diagnoses (detects and estimates) faults in the sensed microgrid output ...

PDF | On Oct 13, 2021, Saeedreza Jadidi and others published Hybrid Fault-Tolerant and Cyber-Resilient Control for PV System at Microgrid Framework | Find, read and cite all the research ...

Designs and implements two novel fault-tolerant schemes based on fuzzy logic and model predictive controls to control AC/DC pulse-width modulation power electronic converters in the presence of microgrid faults.

a) depicts the control signals for DG1, DG2, and DG3 before and after the fault occurrence. The fault effects in DG1, DG2 and DG3 are negligible during the fault's occurrence.

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Control of AC/DC pulse-width modulation (PWM) power electronic converter, referred to as "AC/DC PWM converter", is vital to the efficient regulation of power flow between AC and DC parts of a hybrid ...

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microgrid and the presence of a Hierarchical Control System, some faults can be effectively detected and accommodated using fault detection and diagnosis (FDD) and fault-tolerant ...

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