

## Solar Energy South Africa

# Microgrid communication system diagram



## Overview

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What are the components of microgrid control?

The microgrid control consists of: (a) micro source and load controllers, (b) microgrid system central controller, and (c) distribution management system. The function of microgrid control is of three sections: (a) the upstream network interface, (b) microgrid control, and (c) protection, local control.

How does a microgrid control system work?

An electrical network and a communication network are used for the transfer of control signals and data collection, respectively. Each subsystem has a dedicated local controller. These local controllers form the primary level of the microgrid SoS control hierarchy. Together, all the subsystems constitute the SoS framework.

Does a microgrid need a communication system?

This necessitates a dedicated communication system for microgrid operation. Consortium for Electrical Reliability Technology Solutions (CERTS) has established that a without communication microgrid structure is a desired microgrid structure.

What is microgrid configuration & control objectives?

The microgrid configuration and control objectives impose a variety of requirements on the communication system to ensure different delivering times for various signals generated both inside and outside the microgrid.

What is the nature of microgrid?

The nature of microgrid is random and intermittent compared to regular grid. Different microgrid structures with their comparative analyses are illustrated here. Different control schemes, basic control schemes like the centralized, decentralized, and distributed control, and multilevel control schemes like the hierarchal control are discussed.

What control techniques are used in microgrids?

Xiao et al. presents a survey of the various control techniques developed for microgrids. Several control strategies have been proposed for microgrids in [93 - 96]. Robust  $H_\infty$  control is presented in [97, 98] for the control of two distributed generation units.

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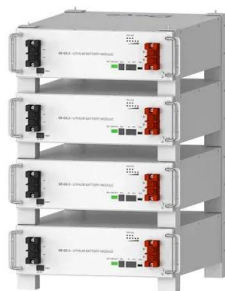


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The microgrid is simulated using MATLAB, and a two-level communication setup facilitates communication to the cloud server. Local and global communication is facilitated using TCP/IP ...



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### Review of microgrid architectures - a system of ...

In [23], a schematic of microgrid architecture is presented and modelling of microsources is explained. In [24], wireless configuration of microgrid is proposed, where communication exists among inverters. In [25], a multi ...

### Smart Microgrid Communications , part of Smart Hybrid AC/DC Microgrids

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In smart hybrid microgrids, information and communication networks, called cyber networks, are tightly coupled to the physical power components. Although the operation of converters in ...



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