Labview microgrid virtual platform

What can a micro-grid system do?

The proposed set of equipment is capable of doing all the functions needed by utilities and users in the aforementioned micro-grid system. The proposed prototype is capable of measuring,monitoring and recordingin both normal system operating conditions and when faults occurred.

How does the NTU Smart Grid test bed work?

The NTU smart grid test- bed integrates a 5 kW lithium-ion battery pack through a bidirectional converter/inverter system(Figure 8). Eight NI 9225 modules connect to the NI cRIO-9082 system. One NI 9227 current sensor and three NI 9485 relay modules connect to the NI 9159 chassis.

How can a smart grid test bed operate at maximum power?

To ensure the PV system in the smart grid test bed operates at maximum possible output power,we implement an improved maximum power point tracker(MPPT) algorithm using LabVIEW. We use an NI 9225 module and an NI 9227 module to sense the PV output parameters.

What is a front panel in LabVIEW TM?

Front Panel is used as a mean to communicate between users and the program(also known as user interface). An example of a front panel is as shown in Figure (a). Block Diagram is similar to a source code of LabVIEW TM. An example of a block diagram is as shown in Figure (b). 2.3. Data acquisition (DAQ) (c) shows a structure of how DAQ works [5-7].

What are the parameters in LabVIEW TM?

Figure 1. LabVIEW TM environment. 2. Related theories 2.1. Related parameters There are various parameters to be calculated in this designed LabVIEW TM program. [1-4]. Apparent Power (S), Real Power (P) and Reactive Power (Q) are measured in Volt-Ampere (VA), watts (W) and Volt-Amperes Reactive (Var) respectively. (1) (2)

What are frequency variations in LabVIEW TM?

Frequency variations are the deviation of the power system fundamental frequency from its specified nominal value(e.g. 50 Hz,60 Hz). 2.2. LabVIEW TM LabVIEW TM consists of two main parts,which are front panel and block diagram. The functions of these two components are as follows:

Distributed Energy Resources (DERs), LabVIEW, microgrid, MPPT, testbed ... State of the art microgrid testbeds offer a platform to design and test novel microgrid control systems in real-

Developing a reliable, cost-effective, and secure smart grid infrastructure to integrate distributed energy resources (DERs) such as solar photovoltaic (PV) systems, battery energy storage ...

Labview microgrid virtual platform

In this paper, the design and implementation of a web-based virtual laboratory for a microgrid with renewable energy sources is presented. The virtual laboratory was developed ...

The openHAB platform"s modular design is another key feature that allows users to easily add and remove devices and systems as needed [21]. It supports a wide range of devices and ...

A conceptual review on transformation of micro-grid to virtual power plant: Issues, modeling, solutions, and future prospects ... work using IEC 104 and Open Platform Communications (OPC ...

Upon investigating all of demanding challenges, lab-scale microgrid test benches [31] [32] [33] have become prominent in which contains data acquisition unit for condition ...

All these features along with its relatively low cost make the developed real-time monitoring platform very useful for online monitoring of smart microgrids. Power generation in ...

A feed forward ANN is used to predict the output power of the SPV and wind generators. Laboratory scale model of the microgrid has been set up. A control strategy for the effective ...

Testing of the controller in LabVIEW platform has been conducted for real-time load and source, and the test results are given in Table 1. Voltage range of 0-5 V is considered with respect to ...

In order to eliminate this shortcoming the proposed methodology implements above explained MAS using VTB as simulation platform with the agent development and controller designed in ...

Web: https://www.nowoczesna-promocja.edu.pl