Smart power unit for power distribution management

Problem

A single fault in power distribution lines affects uninterrupted power supply and power quality. Existing power management systems are unable to detect the point at which power failure occurs and prompt restoration to optimal target configuration.

Solution

Method of detecting electric power failure instantly by using intelligent multi-agent based distribution automation system and immediate restoration.

How does it work?

System works in three levels.

Level 1 - measure current and power, sending data to level 1, detect fault condition

Level 2- Data transfer to level 3, data processing to identify area failure

Level 3 – real-time data simulation, analysis of the system parameters

Innovative features

Multi-agent system where agents featured with; autonomy, networking, reactivity, pro-activity, data collection ability, learning ability

Software interface

Application

Electric power distribution

Stage of development

Smart power devices installed at test location

Demand response capabilities to be developed

Existing technologies

To obtain optimal target configuration systems used are;

Heuristics

Expert systems

Mathematical programming

Soft computing