Development of Load Control and Demand Forecasting System

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This paper presents a technique to develop load control and management system in order to limits a maximum load demand and saves electric energy consumption. The computer programming proper load forecasting algorithm associated with programmable logic control and digital power meter through inform of multidrop network RS 485 over the twisted pair, over all are contained in this system. The digital power meter can measure a load data such as V, I, pf, P, Q, kWh, kVarh, etc., to be collected in statistics data convey to data base system on microcomputer and then analyzed a moving linear regression of load to forecast load demand. Eventually, the result by forecasting are used for compost of load management and shedding for demand monitoring, Cycling on/off load control, Timer control, and Direct control. In this case can effectively reduce the electric energy consumption cost for 10%....

Formation Approach for Mobile Robots with Inaccurate Sensor Information

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This paper develops a control approach to generic formation tasks of multiple mobile robots with inaccurate sensor information. Inaccurate sensor information means that all the robots have only local sensors which cannot accurately measure absolute distances and directions of objects. The control logic is developed considering generic situations in order to adapt to increasing number of robots which participate in the formation. Petri nets are used for modeling and design of the control logic, which can visualize the control models and make it easy to check the states of each robot. Physically homogeneous mobile robots are designed and built to evaluate the developed logic. Each robot is equipped with eighteen infrared sensors and a UHF transceiver module. The developed control....

Swing-up Control and Singular Problem of an Acrobot System

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In this paper, we address the swing up control and the singular problem of an acrobot. We derive a serial system equation from the acceleration constraint that there is no actuator on the first joint. Based on the serial system representation, we propose a swing up and stabilization control algorithm to move the acrobot from its downward equilibrium to its inverted equilibrium position. Simulation result is also provided to show the effectiveness of the proposed control strategy.