

MONITORING AND CONTROL OF CONDITION OF TRANSFORMER BY ONLINE BASED MICROCONTROLLER

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ABSTRACT

The insulated state is one of the most important problems of transformer because incipient faults are the major cause for the deterioration of insulation in the transformers. Low-cost, online incipient fault detection for Transformers is essential due to high cost involved in conventional methods. Electrical, Thermal, or Chemical effects can be observed during fault condition. One of the simplest and most effective ways to monitor a transformer condition is through temperature sensors. In this paper digital based monitoring of transformer state is designed using the control system involving PIC microcontroller PIC 16F876A. The controller has an inbuilt ADC with 5 input channels to monitor 5 parameters. Among the 5 channels, only two channels are used to monitor temperature, over load condition and control strategy is developed such that transformer will be disconnected from the supply if the temperature and load conditions are greater than preset values. Provision is given for the model so that GPRS system may be interfaced to facilitate for transmitting the measured parameters to remote monitoring units.

KEYWORDS: Transformer, Microcontroller, Sensors, Fault