

# **Transformer parameter monitoring by IOT**

## **Abstract**

Distribution transformers are one of the most important equipment in power network. Because of, the large number of transformers distributed over a wide area in power electric systems, the data acquisition and condition monitoring is a important issue. The main aim of this system is distribution transformer monitoring and controlling through GSM modem. Here transformers are damaged due to the oil damage. Oil damage is depends on different parameters and environmental conditions. Now in this system we are concentrating on temperature of transformer and viscosity of oil .In this system temperature and viscosity monitoring and control action is performed based on the AVR microcontroller. After interfacing the required components user has to develop one application program in embedded-c. Here controller is continuously reading the temperature, voltage and current and display on the LCD.

## **INTRODUCTION**

Distribution transformers have a long service life if they are operated under good and rated conditions. However, their life is significantly reduced if they are overloaded, resulting in unexpected failures and loss of supply to a large number of customers thus effecting system reliability. Overloading and ineffective cooling of transformers are the major causes of failure in distribution transformers. Most power companies use Supervisory Control and Data Acquisition (SCADA) system for online monitoring of power transformers but extending the SCADA system for online monitoring of distribution transformers is an expensive proposition. Distribution transformers are currently monitored manually where a person periodically visits a transformer site for maintenance and records parameter of importance. This type of monitoring cannot provide information about occasional overloads and overheating of transformer oil and windings. All these factors can significantly reduce transformer life. Our system is designed based upon online monitoring of key Operational parameters of distribution transformers can provide useful Information about the health of transformers which will help the utilities to Optimally use their transformers and keep the asset in operation for a longer Period. This system will help us to identify problems before any catastrophic Failure, thus resulting in a long life service for transformers. This system is based on embedded system as we are using microcontroller as

discussed before. Embedded systems are self-contained programs that are embedded within a piece of hardware. embedded systems are usually set to a specific task Another way to think of an embedded system is as a computer system that is created with optimal efficiency, thereby allowing it to complete specific functions as quickly as possible. It is also has the advantages of significant cost savings, power consumption and greater reliability.

**Block Diagram:**

