

ABSTRACT

One of the cause of disturbances on the electric power transmission system is a failure on the distribution transformer. Transformers are electrical devices that are very important because it related directly to the power transmission and distribution electrical. Disruption of the transformer can cause damage and decrease the performance of the transformer. The examples that can damage of the transformer is overloaded and unbalanced load. Overload occurs because the load is mounted on the transformer exceeds the maximum capacity of the transformer when the load current exceeds the full load current of the transformer. Transformer can get overload even though the load current overload do not exceed the full load current transformer due to the temperature has exceeded the allowable limit. Therefore, it needs transformer monitoring system in order to know the performance and condition of the transformer.

In this final test, the prototype receiver system was made to monitoring the condition of the transformer. The receiver system consists of blocks of HPF filters, power amplifiers, optical coupling, and demodulator. And then the microcontroller circuit that serves as a data processing flow and temperature data received at transmitter. And the LCD is used as a viewer of the processed temperature data and the data stream received.

After the measurement and testing, the HPF filter can separate 50Hz signal with the information signal (125-140kHz). Block power amplifier amplifies the input signal to a voltage of 770mV to 5.04 V. Optical coupling can work well with a bandwidth of 1.1 MHz. Block demodulator can receive the signal with a frequency and form of signals which correspond to the information sent. There is still data error on the received data due to propagation delay, noise, the devices are still less than perfect, and the spread of the signal due to the load and the characteristics of different wires.

Key words : transformer distribution, overload ,receiver, data error, delay propagation, *noise*.