

Automatic Load Sharing of Transformer

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Abstract: *Transformer plays a major role in the power system. It works 24 hours a day and provides power to the load. The transformer is excessive full, its windings are overheated which leads to the judgment of the transformer installation which leads to disruption of the power supply to the load. It takes a lot of time to repair and involves a lot of costs. This project deals with transformer protection under conditions of overcrowding. The transformer could be protected by reducing the additional the transformer's load by connecting and using another transformer in conjunction the primary transformer using a microcontroller and a switch relay. The load on the first transformer is compared to the reference value by the Arduino. When the load exceeds the reference value, the slave transformer is automatically attached to the first transformer and the extra load is shared. Therefore, the number of transformers works well under conditions of overcrowding and damage could be prevented. In this project, slave transformers share the master transformer's duty in the event of overcrowding and overheating. Sensor circuit with Arduino, current transformer, and other components is designed to collect data from the master transformer, and if it is determined to be overloaded, the slave transformer is immediately attached to the master transformer and the load is shared. The Arduino keeps track of the transformer's current volume and displays it. If loads are introduced to the current transformer's second side in the second side riser. As the current volume exceeds the estimated current value of the transformer, so the microcontroller sends a travel signal to the relay, thus opening the slave transformer. Initially when we open the load, it will be shared by the first transformer. Once the load on the first transformer has been raised above its maximum capacity, the standby transformer will automatically share the load.*

Keywords: Transformer, Arduino Uno, Current Sensor, Relay.

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