Automatic Load Sharing of Transformer By using PLC

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Abstract - *Transformer is part of any system that has an important role the transformer load does not always shift but varies depending on the load so that temperatures and other parameters can be detrimental to the transformer and shorten the life of the transformer. In this project we will try to create an automatic transformer sharing system where the current of the transformer is limited to the auxiliary transformer will automatically be entered into the system and the path is distributed between the two transformers so the current will flow halfway from the main and half transformer through the auxiliary that he uses with an external disturbance system.*

Key Words: PLC, Load Sharing, Transformer, Parallel connection, relay.

1. INTRODUCTION

Configurable Logic Setup, PLC or Remote Control is a digital computer that is used for practical processes. PLCs used in many industries and machinery. Unlike general purpose computers, PLC is designed for multiple inputs too arrangements for evacuation, extended temperatures, electrical noise transmission, and resistance to vibration impact. The PLC is an example of a difficult real-time program because the outputs must be produced in response to incubation conditions for a limited time, otherwise unintended operation will occur the result. By sending the load above the rate of a existing transformer, be it two or more transformers connected in parallel with an existing transformer. Switches are connected in parallel where load one of the modifications is more than its capacity. Reliability increases with more performance than having one large unit. The associated costs storing spaces is a small thing when two transformers are connected in parallel. It is usually economical to install another transformer similarly replacing the existing transformer one larger unit. Cost of rest unit at the convergence state of the two parallel ones is also less than that of the main converter. In addition, of course you better have an equal converter for a reason He is faithful. For this at least part of the load can be provided with a single transformer output voltage. In this project we created a system that is capable of distributing several installed loads sources. It is about increasing the load automatically adds the following new power sources the transformer will also work if possible slow down load sources will be automatically cut. There are three modifiers that act as sources in this regard project. For the first time the 1st transformer is under the working condition and will remain as it is continues its offer. A second converter will do it automatically come to the role where there is any damage errors occur or when load capacity is interrupted again the first one will be deleted. Now take another case imagine the 1st transformer in work again when the loads are getting higher than they are the average voltage the 2 transformer will automatically perform added to the circuit and other subsequent loads sources will be added And the opposite is when load the reduced transformer will be removed. The entire program is fully functional through the PLC. As per our requirement we will issue a PLC which will it will be able to automatically change the transformer cycles and you will use them. Electrical power distribution play very important role .Because it works 24/7 of the day and feeds the load to different application but in some condition the load of transformer increases suddenly due to over loading . It may damage the Transformer .The main aim of the work is to provide an UN- interrupted poor supply to the energy consumer by applying this scheme we try to avoid problem occurred in transformer.

2. WORKING

When the load of transformer is increased and the current exceeds a limit in such condition a secondary transformer will be automatically connected in the circuits and the load of transformer is automatically divided in both of transformers.

The current sensors sense the current flowing through the first transformer and in high current condition the inputs of PLC will get high and automatically load will be shared .The indicator panel will show that which transformer is working and connected in circuit.

2.1 COMPONENTS REUIREMENT

1. Transformer

A transformer is an electrical device that transfer energy to two or more circuit through electromagnetic induction.

Voltage 2*12

Current 1*2000mA

Rated power 48KV

2. smps

A switch mode power supply is an electronic power supply that incorporates switching regulator to convert electrical power efficiently like other power supply SMPS transfer power from DC and AC load.

Input 230V AC

Output 24V DC

3. Rayay.

Transmission is an electrical device.

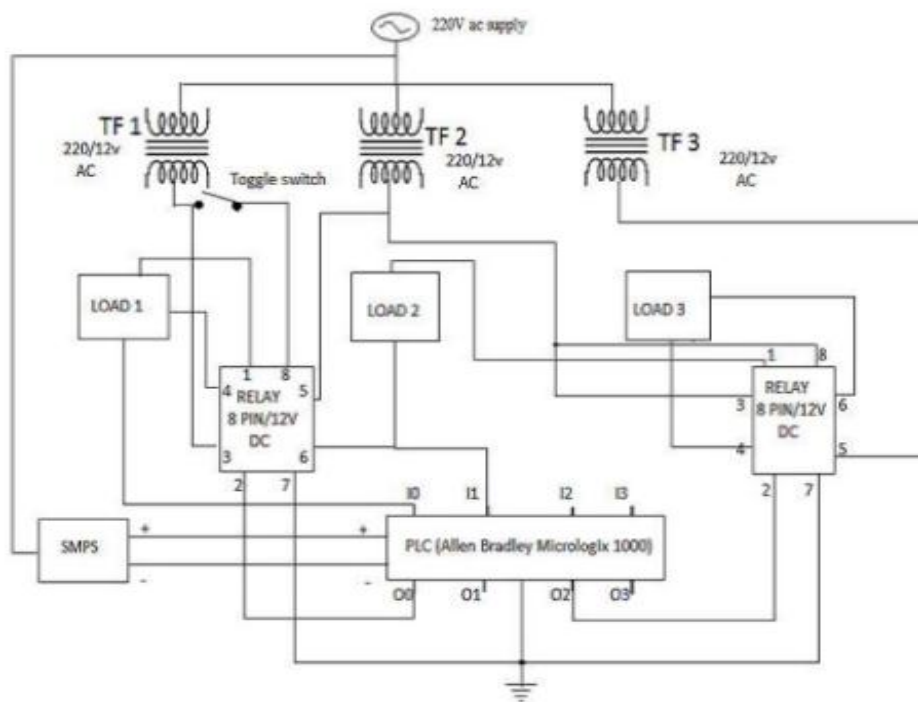Most transfers use an electric switch.

PROJECT BLOCK DIAGRAM

FIG 2(a): PLC BASED LOAD SHARING SYSTEM

The transmission is used on a protection basis and is used for a small power control circuit.

4. PLC

Logical control of the system

Nokia Sematic S7 400

Electrical unit (PSU)

CPU

5. Future sensation

The current sensor is a device that detects electrical equipment in the wire and produces the same frequency as the current. The output signal can be analog or current or digital output volume.

6. Voltage controller

Voltage controller, any electrical or electronic device that keeps the voltage of the power source within acceptable limits. Voltage controller is required to maintain voltages within a specified range that cannot be tolerated by electrical appliances using that voltage

7. Compare

8. Capacitor

3.0 ADVANTAGES

- The temperature in the transformer can be reduced.
- The load will be shared in microseconds.
- The 39.Life of the transformer will be expanded.
- There will be no need for human power.
- Reuse cost of exchange of converters
- Its prevents the main transformer from damage due to
- Problems such as overload and overheating.
- An uninterrupted supply of electricity to customers is provided.
- No interruptions are done manually.

4.0 APPLICATIONS

- This program can be used in sub-stations.
- Can is used in Industries.
- Can is used in areas with very variable load.

5. CONCLUSIONS

The report has been prepared on the basis of PLC BASED LOAD SHARING study. Input load above the level of the existing transformer, two or more transformers are connected in parallel to the existing transformer. The transformer connects in parallel when the load on one of the transformers exceeds its capacity. The whole process can be controlled using logCable logic control i.e. PLC. Reliability increases with the same performance rather than finding one larger unit and the costs associated with maintaining the gaps are smaller when the two transformers are connected in parallel.

A major factor during our project is that the study of load sharing between transformers. During this time we are able to relate from the Theorotical side to the use of part. This as a whole to prove the most knowledgeable and to create the experience and learned material that will be most helpful for the future.

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