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Three Phase Transmission Line Fault Detection by Using Aurdino

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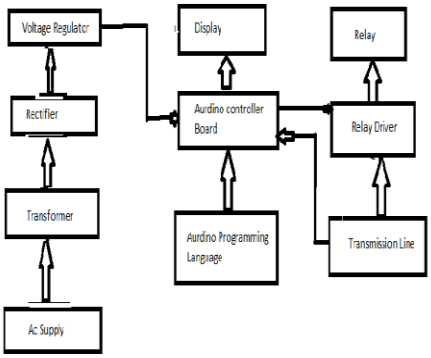
ABSTRACT: *In electricity journey the generation of transmission, distribution, utilization of electrical power is called electrical technology in power generation transmission and distribution many components are involved. So there are many types of electrical faults or faults like in transmission lines occurs in transmission system like line to line faults and line to ground fault in power system etc. In this project I will show you the prototype of three phase fault detection system. Mainly occurred in H.V transmission line our project accurately detect the distance of three phase fault from source system and display on control panel by using aurdino mega. In this project we use sensing device which is present on the line even though L-L ,L-Gnd and any unsymmetrical fault was occurred it will show on display. Aurdino is a heart of our project it will detects the fault, analyses and classifies these faults and then, determined the fault distance. Then, the fault information is transmitted to the control room.*

Key words- Aurdino, GSM module, Relay, LCD, Transmission Line, Transformer

INTRODUCTION

As we seen our surrounding the fault occurred in the transmission line is very common in rainy season and it is very dangerous for us. The electrical power system is growing in size and complexity in all sectors such as generation, transmission, distribution, distribution so in this complex network fault is happened which results in several economic losses and reduce reliability of electrical system. We take care to resolve this fault as soon as possible, if we failed to resolve this then it can cause complete black our or grid failure. Generally the 70% to 90% of faults on overhead lines, most of the faults occurred due to lighting smiles, storm, flashover these is very harmful for the society. In transmission line this type of faults line to line faults line to ground fault there are many types of faults. Due to faults power failure and also damage the electric equipment.

Fig:-1 Block Diagram



METHODOLOGY AND PLAN OF WORK

Here we show a prototype model or 3p fault detection, so we make the fault line by using switches. We know that impedance of line is increases with increase in length. So we use resistance combination in senses, for each phase different set of resistance is used for each phase one relay is use to isolate the load at the time of fault which give exact length of fault occur on line.The mastermind of our project is audino uno.The DC supply is require for controlling board. Which is provideds with the help of rectifier and transformer combination. Output switches is given analog pin or aurdino (uno) and display is also connected to digital output pin of aurdino. So when we move fault it indicate of display with exact distance, and at a same time aurdino give output to mp relly and it disconnect load from supply. This all thing happen as soon as fault is occur in line. Due to proper program insert in aurdino on a based. It is possible become voltage of ade pin is changes according to flowing from line and it depend upon distance of line.

LITERATURE SURVEY:

In this paper clarified that fault detection in transmission line has becoming a need of important, and increasing demand conditions and advancement made in the power system, fault identification has very become easier. And in this prototype use two bus system is simulated in MATALAB

Manohar Singh: In this paper clarified to the Transmission line protection is very important thing in current scenario, because in power system 85 to 87% of power system faults are occurring in transmission lines. Classify the perfect technique, to detect the fault in transmission line,like line to line fault, line to ground fault etc.

Anurag D. Borkhade: Clamfile to the proper detection of faults is cleared in transmission line is needful. In these paper detection and classification off sure these faults is done losed on the warelet analysis or power system translators. Wt has the the ability to decompose current and voltage signal. In this method used warelet which shows light signal and provide more features.

Rajeev Valunjker 2017: Clarified that the paper aims to design auroredoser for three phase system with data acquisition system, that says this method is very handly to detect the fault on transmission lines.This system will reduce the humal efforts off closing the circuit breaker.

This pater shows the in such many solve the problems faced in transmission line and consumers bt using the method, we can easily detect the fault and resolve it and problem slved in real line very useful for the future.

Objective:

In this paper design is very reliable and effective. The main objective of this prototype model human efforts decreased. And damage the electrical equipment. To ensure stability and reliability of power system is boost system is stronger and also strong the economic growth.

ADVANTAGES

- Detect the exact fault location
- Human efforts minimizes
- Improve the system performance

APPLICATION

- Used in Industrial Fault detection system
- Used in transmission line fault detection system
- It can be used in mine

Conclusion: In this paper a model design to solve the problems faced by consumer by using Aurdino. We can easily detect the type fault and solve it and there distance in real time, this prototype model is very effective. It is works in less time perfect distance of fault is locate. Avoid the future problem in transmission line.

Future Scope

The future implications of the project are very great considering the amount of time and resources it saves. The project we have undertaken can be used as a reference or as a base for realizing a protection scheme to be implemented in other transmission lines of higher level. Also the current system can be made to work with conventional SCADA or other Communication Services like GSM to operate remotely.

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