AGRICULTURE (3 PHASE IM) MOTOR PROTECTION AND AUTO ALERT SYSTEM USING GSM SYSTEM.

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ABSTRACT
The mean aim of this project is to is to develop a Microcontroller based system. which will be to find the various issues of three phase ac induction Motor and protect the motor in certain hazardous conditions. In this project the Motor will be protected from the Under Voltage , Over Voltage, Over current , Over Temperature and vibration. Again the same Data is displayed at site and the alerts are sent to the registered owners Mobile.

KEYWORDS: microcontroller, sensors, GSM model, Transformer

INTRODUCTION
An induction machine plays a very important role in industry & Home application and there is a strong demand for their reliable and safe operation. Faults and failures of induction machines can lead to excessive downtimes and generate large losses in terms of maintenance this motivates the examination of condition monitoring. On condition monitoring involves taking measurements on a machine while it is operating in order to detect faults with the aim of reducing both unexpected failures and maintenance costs. This project focuses on surveys the current trends in on-line fault detection and alert System.Condition monitoring of electric Motors can significantly reduce the cost of maintenance and the risk of unexpected failures by allowing the early detection of potentially catastrophic faults. In condition based maintenance, one does not schedule maintenance or machine replacement based on previous records or statistical estimates of machine failure. Rather, one relies on the information provided by condition monitoring systems assessing the machine's condition.
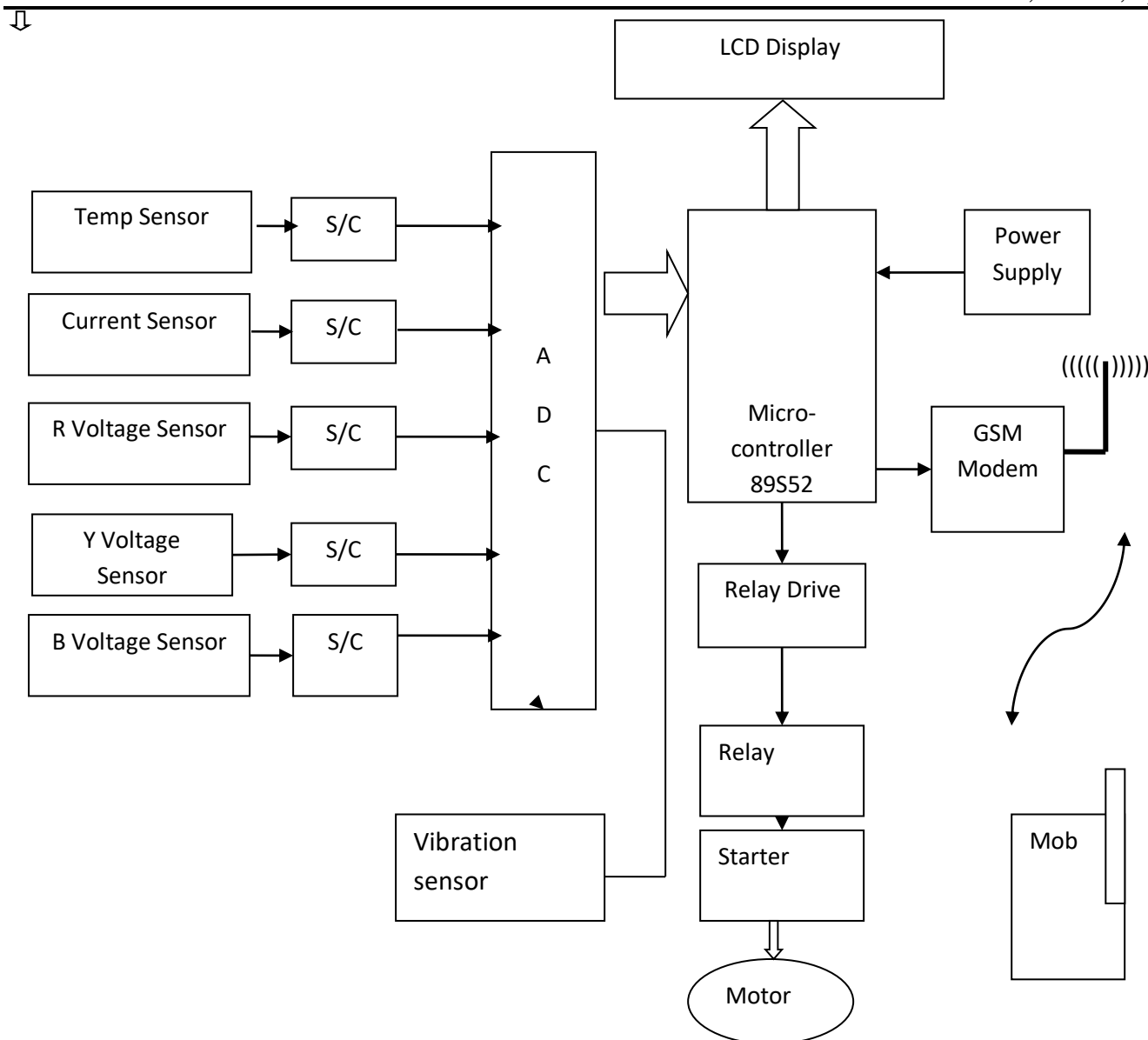
Fig. 1.Block Diagram

WORKING

In this project , Microcontroller 89 S 52 which is compatible microcontroller 8051 is the key part. The 5 V Dc Power supply is designed and mounted on the controller board which provides the operating voltage to the microcontroller and other components like sensors , relay etc. In this project the line input voltage sensor ie a Step down Transformer along with rectifier is used ,here the concept is for any change in the Input to the transformer changes the voltage at the output . With this under Voltage and Over voltage conditions are observed. Again is to sense the current a Current transformer is used and a signal conditioning ie a current to voltage conversion circuit is used. Again LM 35 sensor is used to sense the temperature and a set point is set for the temperature at which the motor can work. For any unfavorable condition ie for any under voltage, Over Voltage , Over Current or the Over Temperature condition the Motor will automatically off and the sms will be sent to the registered user.

MICROCONTROLLER AT 89S52 DISCRIPTION:

The Microcontroller IC 89S52 has 256x8 bit internal RAM which is most important feature for this application. Here eight to ten readings can be recorded in RAM after each half an hour to achieve data logging.The Timer/Counter application of 89S52 is used to count the pulses from proximity sensor. The

interrupt pin INTR0 is used to switch into different setting modes The serial channel is used to get interface with pc for data logger application.

GSM TECHNOLOGY

GSM (Global System for Mobile Communication) is a public service available at no cost to the user. Nowadays mobile hand set is not new to the farmers. Every where farmers can be seen using mobile phones and they are very much conversant with mobile hand set. There is no extra cost of \communication equipments. Using GSM technology, a motor can be controlled and monitored from every corner of the world .It has no bar of distance like Infrared, Bluetooth, Radio waves etc.

TRANSFORMER

Transformer is electrical device that transfer energy between two or more circuits through electromagnetic induction.
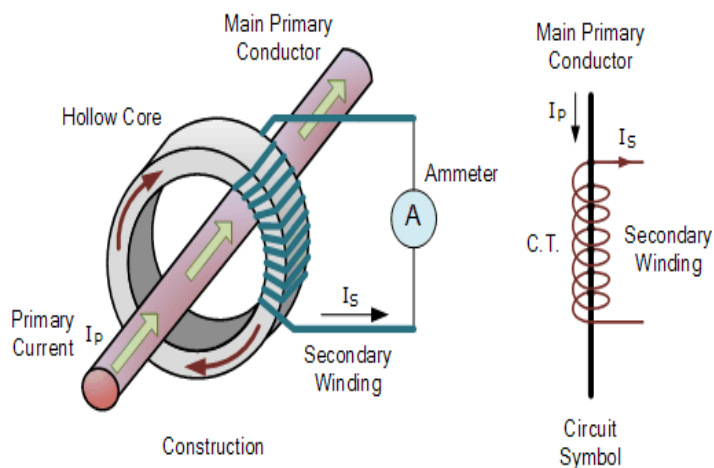

fig. transformer

Good Quality Transformer, power supplies for all kinds of project & circuit boards. Step down 230 V AC to 9V with a maximum of 500mAmp current. Generally known as 9-0-9

SPECIFICATION:
- voltage: 2 x 9V
- current: 1 x 500Ma
- rated power: 9VA

CURRENT TRANSFORMER

A current transformer (CT) is a transformer that is used to produce an alternating current (AC) in its secondary which is proportional to the AC current in its primary. Current transformers, together with voltage transformers (VTs) or potential transformers (PTs), which are designed for measurement, are known as instrument transformers.

When a current is too high to measure directly or the voltage of the circuit is too high, a current transformer can be used to provide an isolated lower current in its secondary which is proportional to the current in the primary circuit. The induced secondary current is then suitable for measuring instruments or processing in electronic equipment. Current transformers also have little effect on the primary circuit. Often, in electronic equipment, the isolation between the primary and secondary circuit is the important characteristic.

RESULT

Parameter	Normal rating	Faulted rating	Result on mobile
Temperature	0 to 45∘c	Above 45∘c	Over temperature
vibration	1 to 10 pulse	Above 10 pulse	Vibration Problem
current	Less than 0.8 amp	Above 0.8amp	Over current
Single phase	R,Y,and B are present	Any one phase absent	Particular phase problem disply

CONCLUSION

In this project system of three phase induction motor introduced. The system is successfully implemented and tested. In which over voltage, over current ,over temperature and vibration fault are detected.if any fault observed during operation of the motor,a warning massage displayed on mobile and then motor is stopped.

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