Two to Three Phase 5HP Digital Panel

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Abstract: Pump Digital Starter is designed by SELVAKUMARAN INDUSTRIES with advanced technology of microprocessor-based system. It is the safest and complete failure proof solution for long life and trouble-free operation of the pumps ensuring continuous and automated pumping operation. Our design criterion has been built-in absolute reliability for entire life of the equipment. SELKON Motor Doctor + works under CVM Technology to offer 100% safety to motors. It's automatic program technology to increase motor life by30%.Offering 2 years full warranty to our motor doctor, first time in our country. It has EIGHT functions this motor is used for water pump and electric vehicle applications SELKON Motor Doctor + works under CVM Technology to offer 100% safety to motors. It's automatic program technology to increase motor life by 30%. This motor is used for water tank application and pumping of water in and out of the system.An two phase to three phase five HP digital panel is formed by introducing the concept of industrial to connect all items in the agriculture. In this panel, the two phase to three phase five HP digital panel which is main purpose of agriculture. It measures the accuracy of voltage and current for five HP motors. That the panel which is used as a converter also. The converter which is terminated as two phase to three phase converter.

Keywords: Three way connector,Relay, Capacitor contactor,MU1contactor,Lighting, protector, Starting and Running capacitor, Controller.

I.INTRODUCTION

We are an outstanding name engaged in manufacturing and supplying broad variety of Starter, Control Panel, Timers and Controller suitable for bore well and submersible pumps which is used in agriculture, domestic, Toward board, Panchayat union, Collectrate and Industrial pump sets. Currently around 200 varieties of high quality motors switch gear items are manufactured and selling with one year warranty to the customers and dealers across the country. We are also dealing with irrigation water management equipment like Drip Irrigation Gate Valve Controller. In order to serve the farmers energy requirements for pumping water to their agricultural fields, we are taking solar projects under Government of Tamil Nadu named as 90% subsided Solar Pump Systems, and also for Commercial Subsided ON & OFF Grid Solar Power Systems. As per their requirements, our clients can avail these products both in standard as well as in customized specifications. The offered products are widely used in various industries due to the features like easy operations, high efficiency, rigid construction and longer service life. Due to our advanced and hi-tech infrastructural facility, we are manufacturing and supplying our products within limited time frame.

Our state-of-the-art quality examination unit has made us competent to supply products that are in conformance of global quality parameters. We make sure that our products are carefully examined by our quality inspectors before delivering, so that no error or discrepancy occurs at our clients' end. Further, our offered products are appreciated by our clients for their robust construction, user friendly nature and durability. In addition, we have been focusing on total contentment of our quality aware clients with prompt deliveries of these products. This has enabled us to gain clients from all over the country

II.EXISTING SYSTEM

To train a controller based on the integrated squared difference over a set period of time, it is preferable to develop a desired model and train it before uploading the controller to the actual system. For online training it would be best to select the most sensitive parameters based on simulation and adjust only those parameters step by step in time. With fixed weights and biases, these would seem to produce control which is proportional-like and integral type, respectively. However, due to the speed-error based self-tuning of the ANN and the interconnections between layers, the drive, when in closed loop, will seek command speed even if one of the input weights is fixed. This occurs because the non-fixed weights and biases of any interconnections and neurons remain adaptive and will be continually adjusted as long as speed error exists within limits, if the ANN output command torque differs from the reference torque command. The more complex the network, the less

appropriate such a comparison to PI-based control becomes. A network consisting of two neurons is compared to a precise and adaptive PI controller which continually adjusts itself in real-time based on speed error and by comparison to reference torque command.

In applying this technique to this paper, ANN is used only to mimic PI controllers which mean fixed suitable weights are needed to follow the desired speed precisely. For comparative evaluation purposes, a PI controller-based IM drive system has also been employed and tested. Furthermore, simulations have been run to assess the performances of both drives at different dynamic operating conditions. The induction machine dethrones the DC machine in the field of speed variation due to some of their advantages such as mechanical robustness, simple construction, and less maintenance. It turns out a proper solution for most industrial applications; furthermore, the vector control strategies provide it behaviors and performances equivalent to those of a DC machine by performing a decoupling between the flux and the electromagnetic torque. Among the techniques of control used in induction machine command we can find those based on the knowledge of the machine's parameters and the environment in which it is intended, therefore we speak about classic controllers (PI, PID ...). However, many challenges remain, the influence of internal parameters, the sensitivity to external disturbances, the presence of a mechanical sensor, and many other problems have given rise to new approaches in the field of induction machines command. It is therefore the application of fuzzy logic and neural networks.

The Artificial Intelligence techniques, such as, Fuzzy Logic and Artificial Neural Network have recently been applied widely in motor drives. The base element in fuzzy controller is fuzzy logic, it can be designed to approximate any nonlinear function without an explicit model of the plant, however this controller is regarded more tentative than an accurate faithful reflection. An artificial neural network is composed of large interconnected processing elements (neurons) working in parallel to solve a specific task, by learning process it can be applied for pattern recognition or data classification. A neural controller had the capabilities to imitate the behavior of nonlinear complex systems and the robustness face to disturbances, and in order to control a process it begin first by an identification step and a step of control.

III. PROPOSED SYSTEM

The proposed system two phase to three phase digital board technology implemented here, SELKON Motor Doctor + works under CVM Technology to offer 100% safety to motors. It's automatic program technology to increase motor life by 30%

It has EIGHT functions

1. Auto starter
2. Cyclic Timer
3. Low and High Voltage Protection setting for Two and Three Phase supply separately
4. Dry run Preventer
5. Over Load Protector
6. Single Phase Preventer
7. Phase Change over Protection
8. Imbalance Voltage Protection

Operations

1. Motor gets OFF when water gets dry in bore well or Open Well
2. Motor ON & OFF time setting based on availability of water in the bore well
3. Motor gets off when it draws more current
4. Automatically switch ON & OFF Motor based on water availability in the Water Tank
5. 100% motor coil protection from over voltage, high current, dry run, over load and Lightning
6. Motor gets ON when power resume
7. The Controller will monitor both bore well and Overhead tank water simultaneously
8. Motor gets OFF when any one power supply cut off line

Starter

SELKON Motor Doctor + works under CVM Technology to offer 100% safety to motors. It's automatic program technology to increase motor life by 30%. Offering 2 years fullwarranty to our motor doctor, first time in our country.

It has EIGHT functions

1. Auto starter
2. Cyclic Timer
3. Low and High Voltage Protection
4. Dry run Preventer
5. Over Load Protector
6. Single Phase Preventer
7. Phase Change over Protection
8. Water Tank Controller

IV. SIMULATION

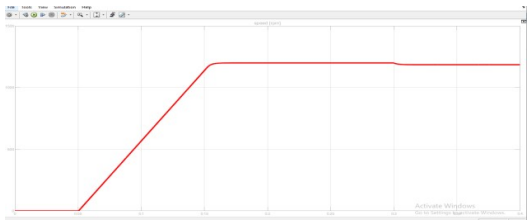

Fig.1. SPEED OF INDUCTION MOTOR

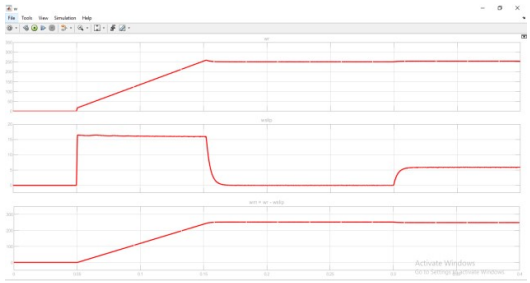

Fig.2. STATOR CHARACTERISTICS

A three-way connector, also known as a three-way fitting or three-way valve, is a type of plumbing or piping component used to join three pipes or tubes together at a junction. It allows for the flow of fluids or gases to be directed in three different directions, making it a versatile and useful component in many applications. Three-way connectors can come in various shapes and sizes, but typically consist of a central port and two side ports. The central port is where the fluid or gas enters the fitting, while the side ports allow for the flow to be directed in different directions. The ports can be connected to the pipes or tubes using various methods such as threading, compression fittings, or welding.

A power relay, also known as an electromechanical relay, is an electrical switch that uses an electromagnetic force to operate. It is used to control high-power circuits with low-power signals, such as those generated by a microcontroller or other control system. Power relays are commonly used in industrial control systems, home automation, and other applications where a high level of reliability is required. A power relay consists of a coil, which when energized, creates an electromagnetic field that pulls in an armature, or movable contact, to make or break electrical connections. The armature is usually spring-loaded, so when the coil is de-energized, the contacts return to their normal position. Power relays can be used for a wide variety of applications, including switching high-power loads such as motors, lighting systems, and heating elements. They can also be used to control smaller loads such as solenoids and valves, and to provide isolation between different parts of an electrical system.

Fig.4.5 HP PANEL BOARD

IV.CONCLUSION

Finally we designed the water pumping system for self-starter applications for water pumping applications A Starter is a device that controls the use of electrical power to equipment, usually a motor. As the name implies, starters "start" motors. They can also stop them, reverse them, and protect them. Starters are made from two building blocks, Contactors and Overload Protection, Pump starters prolong the life of your pumps and other pump components that otherwise may be prematurely aged or damaged. Pump starters are primarily intended for use in temporary installations for drainage pumps and are capable of starting one pump at a time.

The progress in industrial & electrical is a non-stop process. New things and new technology are being invented. As the technology grows day by day, we can imagine about the future in which thing we may occupy every place. This project is used in agriculture purpose. In this project digital panel is used as starter. If the panel is put in to the well it will show the voltage and current. But in this project digital panel is used for accessing the 2 phase to 3 phase. So, this project improves the digital panel performance and also the speed. By means of this project we intent to simplify the billing process, make it swift & increase the digital panel technique. Smart shopping system utilizing 2 phase to 3 phase 5 HP digital panel technology is employed in enhancing agricultural experiences and starter issues. The smart shelves are able to monitor the items on the shelves by reading the digital panel from the tags. The 5HP digital panel are able to read and retrieve information, the checkout points can validate the purchase made by a customer.

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