DESIGN OF AN OVERCURRENT AND TEMPERATURE PROTECTION SYSTEM ON A SINGLE PHASE WATER PUMP MOTOR BASED ON ARDUINO UNO

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ABSTRACT

In the current era of globalization, single phase water pump motors are widelyused by the publc, this type of motor is susceptible to overcurrent. Overcurrent disturbance will couse heatin the motor coil, so that in long time it will reduce the motor's insulating ability. The potential for intterference due to decreased motor insulation strength will increase, and can result in damage to the motor. Therefore we need a system of protection equipment is needed to overcome damage to the single phase water pump motor using Arduinno Uno when working. From the results of testing the overcurrent and temperature protection devices on single phase pump motors. The normal current value that is read by the current sensor is 0.9 A, and the temperature sensor reads 29.65 °C. When the current sensor and temperature sensor detect that the current exceeds the limit that has been set, the protection control will automatically work to turn off the pump motor. The current that is set is 1.7 A and a temperature of 40°C. The result of testing the current and temperature protection on a 1-phase pump motor, get a good result of 100%.

Keywords: Water pump, Arrduino Uno, Current Sensor, Temperature Sensor.