

Timer Based Industrial Liquid Pump Controller with User Defined Time Slots

This project is an innovative solution to operate a machine / motor / liquid pumps for a small duration. If a machine is to be operated for ten minutes, and should be switched off after the duration, it is too difficult and many times we forget to switch it off the system after the prescribed time.

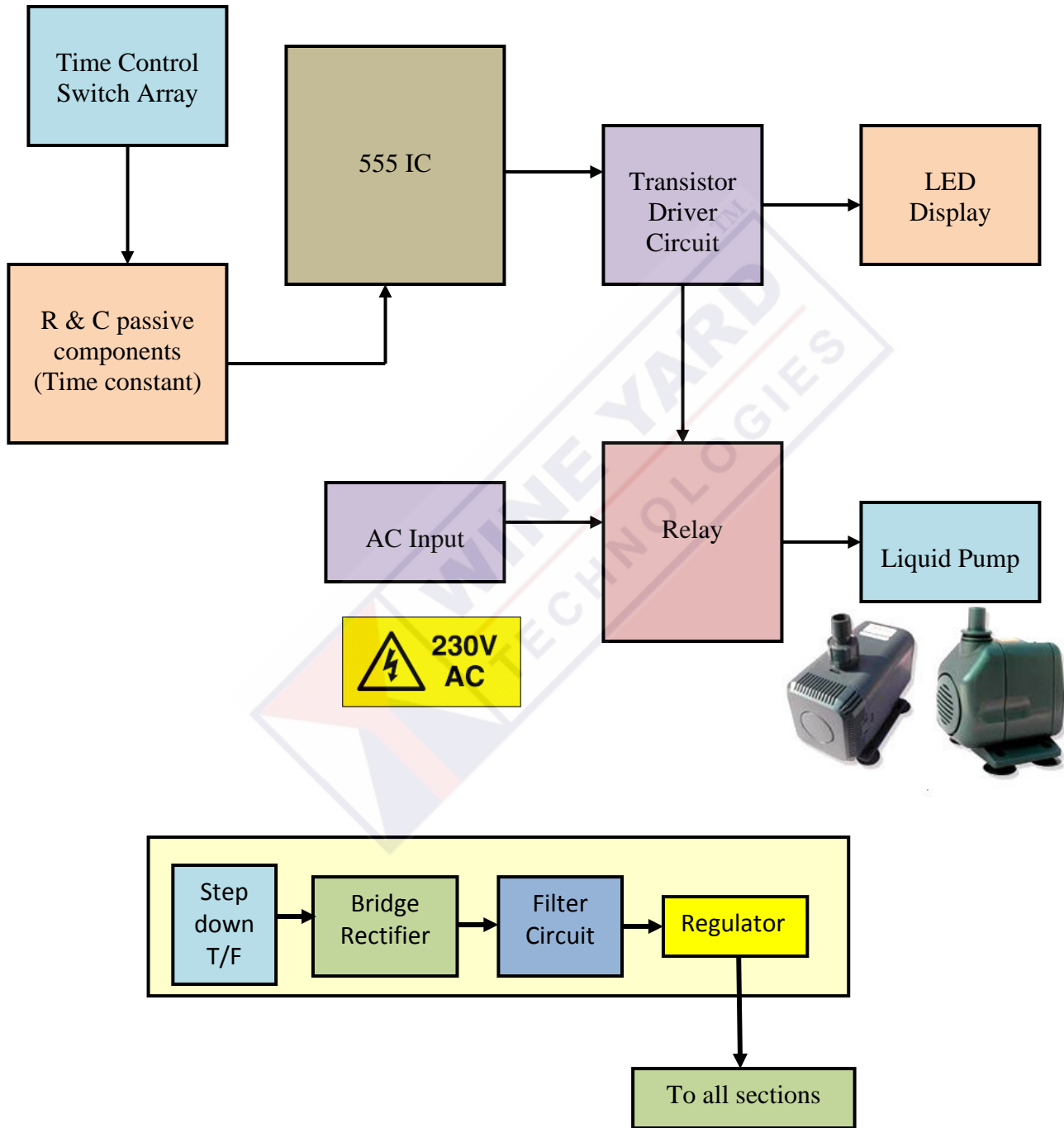
This project provides the facility of automatic switch off after the required time duration. This is achieved by using the 555 timer. Four different values of resistors are connected between trigger pin of 555 and Vcc. These four resistors provide four different fixed time constants of $1.1RC$. Also a potentiometer is connected between these points to get a required and adjustable time constant.

A transistor is used to drive the relay during the RC time constant period. 12V Single pole - single through relay is used to control the AC liquid pump. LED indication is provided for visual identification of the relay / load status. A switching diode is connected across the relay to neutralize the reverse EMF.

This project works with 12V regulated power supply. Power on LED is connected for visual identification of power status.

This project uses regulated 12V, 750mA power supply. 7812 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac out put of secondary of 230/18V step down transformer.

Timer Based Industrial Liquid Pump Controller with different time slots



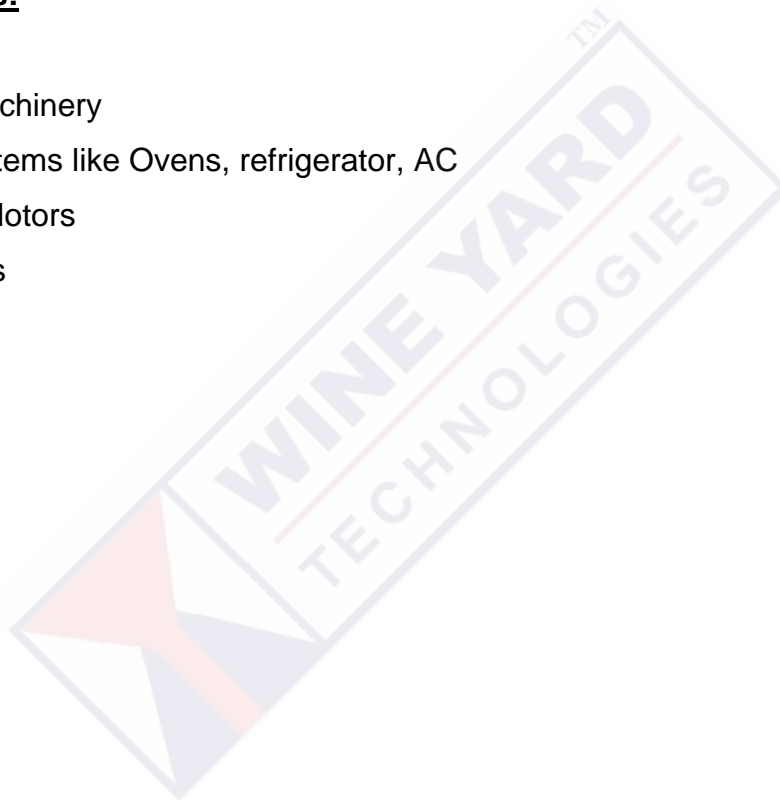
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Advantages:

- Highly Accurate
- Low cost and reliable circuit
- Adjustable Time can be set using potentiometer
- Four different fixed time schedules
- Can handle heavy loads up to 7A

Applications:

- Industrial machinery
- House hold items like Ovens, refrigerator, AC
- Agriculture Motors
- Water pumps



Abstract Prepared By

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