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FACULTY OF ELECTRICAL ENGINEERING

CYCLIC ON AND OFF TIMER

KEU 380

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ABSTRACT

Objective

The cyclic on and off timer is one of the popular circuit. The main objective of this circuit is control and equipment that need to be stop and run for rated time. The main purpose is to save power and make sure that machine or equipment can be used for long time period.

Application

For example, this circuit can be implemented in water pump motor control. The water in the tank can be control and at the same time we can minimize the operation time of the motor. To achieve the objective we have to use several main component such as ic timer 555 and ic decade counter (4017B).

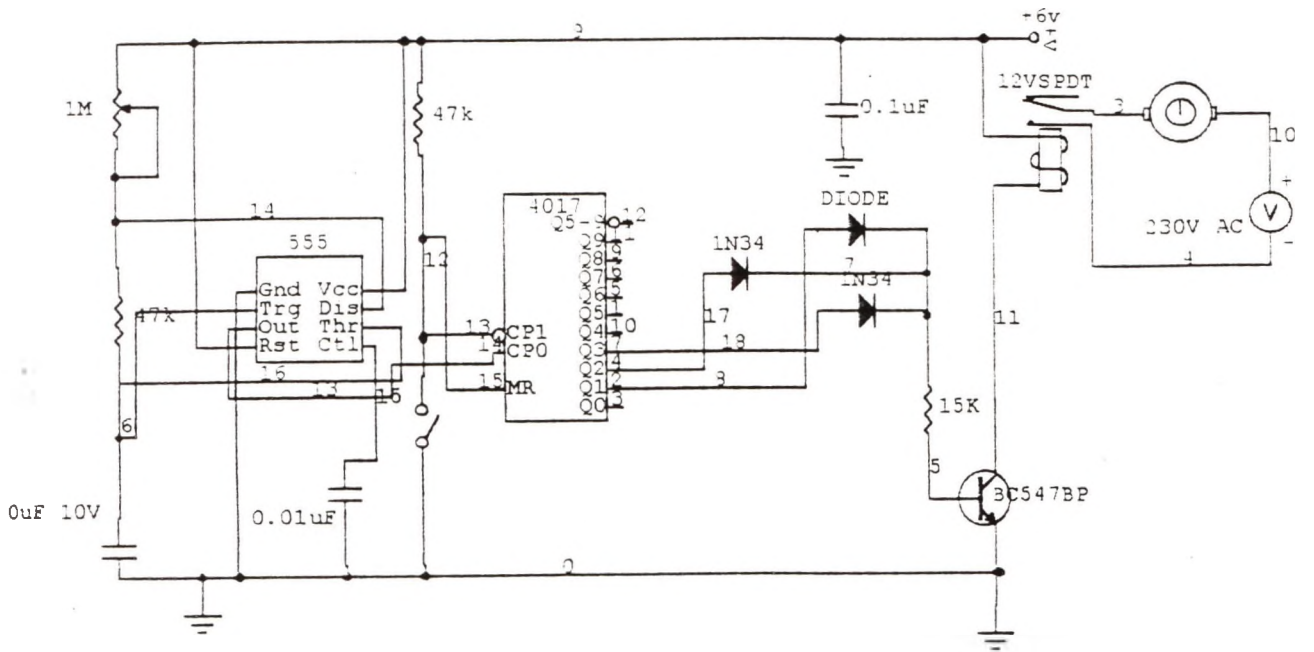
Application of ic timer and decade counter.

Uses the 6 volt DC source and the connection this circuit as show figure 1. The length of on time is multiple of on time (high output) period of 555 timer and the number of CD4017 output being connected together in wire -OR fashion, using diode. The off time period is a multiple off time period low output of 555 and number of unused output of cd4017. The circuit thus increase the on and off time of the 555 waveform with the help 4017 counter.

The cd 4017 is a 5 - stage divide - by - 10 johnson counter with 10 decoded outputs and a carry out bit. These counters are cleared to their zero count by a logical "1" on their reset line. These counter are advanced on the positive edge of the clock enable signal is in the logical "0" state.

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Circuit diagram of the cyclic on and off timer