

## **EXP. No (2)**

### **Static Relay**

#### **Introduction:**

A static relay is a relay in which the designed response is developed by electronic, magnetic or other components without mechanical motion.

Static relay in AC circuits are provided with an input transformer to convert current or voltage to lower level (usually). A static relay also requires a separate supply of auxiliary voltage.

#### **Pick-up-time:**

It is a time from instant when the measuring input effects voltage until completion of the contact movement of the output relay.

Object of experiment: The aim of the experiment is to determine the pick-up-time for RXEG2 instantaneous voltage relay.

#### **Apparatus:**

- 1-Single-phase auto transformer.
- 2-Voltmeter digital time.
- 3-Triple pole single throw switch.
- 4-Timer.
- 5-Intermediate relay.

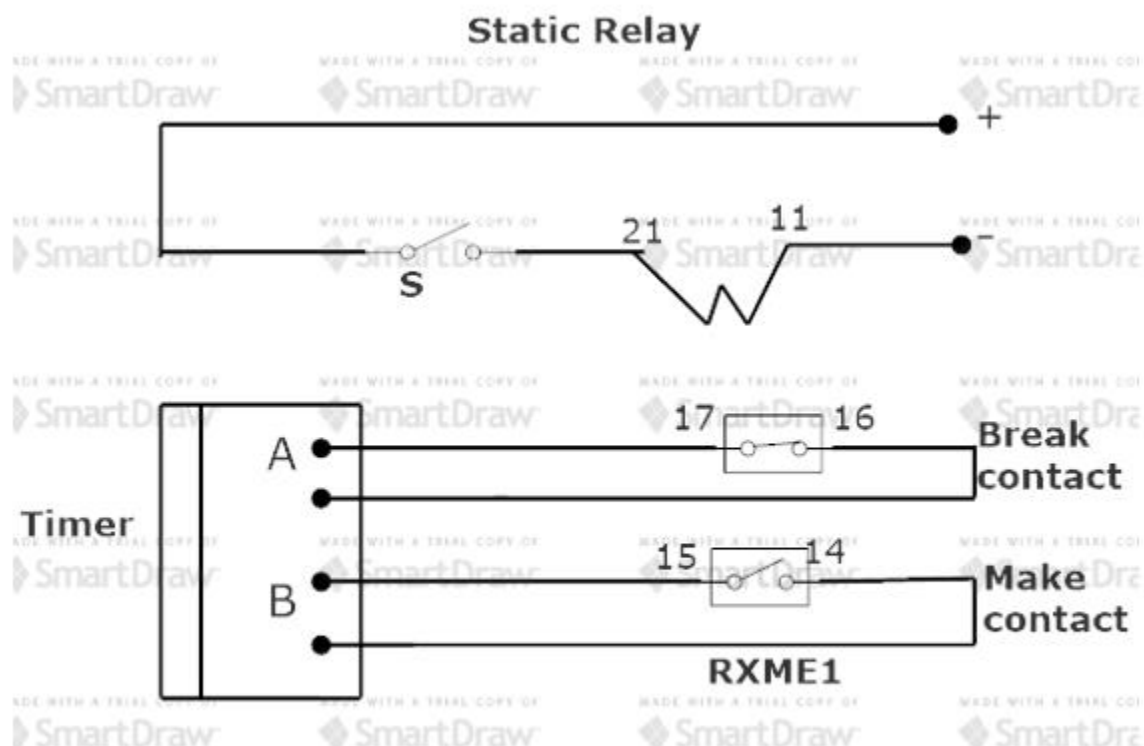
#### **Procedure:**

1- First, it required to measure the time needed for one pair of contacts RXME1 to perform a break and make operation for this two contacts are one makes and break contacts are connected to the input of the timer. The circuit condition are shown in fig (1). The relay RXME1 is energized with the switches, and the operating time on the timer should be recorded, repeat the measurement twice and calculate the average value.

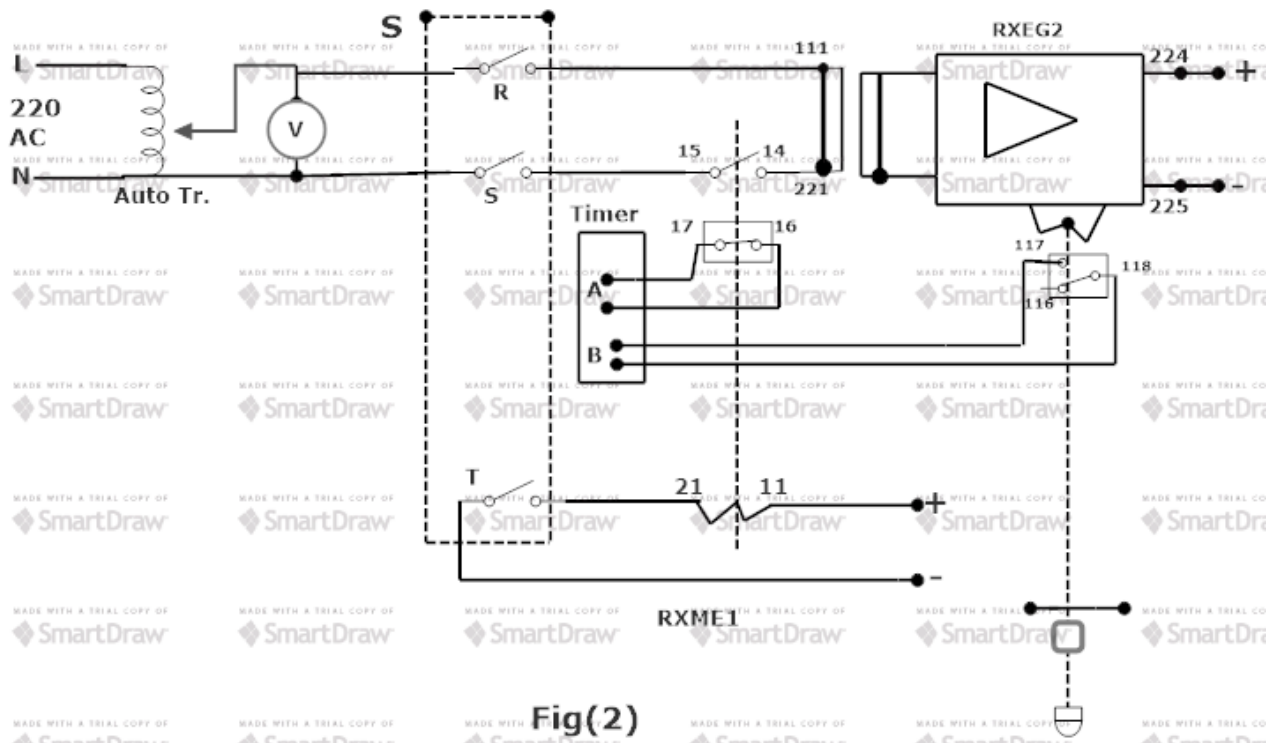
2-For determining the pick-up-time for the RXEG2 connect the circuit as shown in fig (2) close the main switch with input voltage at zero, Now set the scale factor to 1.0(max operation) increase the voltage from the auto transformer to 88volts, open the main switch reset the timer, close the main switch read off the timer, now subtract the time measured for intermediate relay from the timer reading. This is the pick-up-time. Repeat the experiment by increasing the voltage to 120volts and 200volts, each time take average of at least 3 readings.

**Report:**

- 1-Draw the time-voltage characteristic of RXEG2 relay?
- 2-What are the advantages of static relay?
- 3-What are the basic elements of static relay?



**Fig(1)**



Fig(2)