



A REVIEW ON AN EXAMINATION AND TESTING SWITCH USING DOOR SWITCH TESTING KIT

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ABSTRACT- The paper is about testing Refrigerator door switch. The project is Based Relay logic circuit (RLC). It is automatic machine which indicates user if any switch is not working. Each switch is attached to a lamp that will emit white light to be tested and remarked in series. The broken switch incorporates timers, so the user can change the pace of operation to suit their needs. For many different reasons, test switches have historically been implemented in ac and dc circuits of protection, metering, and control(PCM) systems.

This essay examines test switches' functions. and examines them in light of the characteristics of relay logic technology that is used in RLC systems today. Testing requirements changed have as a result of continuous self-testing functions in modern LEDs.

I. INTRODUCTION

We use door switch in our day to day life. The most common example; of door switch is in our refrigerator. When we open the door, the light get turns on and when we close the door the light turns off. This is because the door is used in NC type switch. In NC switches the switch is When the button is pressed, the switch turns off and is generally closed. This type of switch is manufactured on a big scale in enterprises, so it is important to check the quality of switches prior giving it to the user to use. In this quality testing process this kit is useful to check the working cycle of the switch. The project is basically working on two timers in which one timer

II. BASIC FUNCTIONAL DIAGRAM

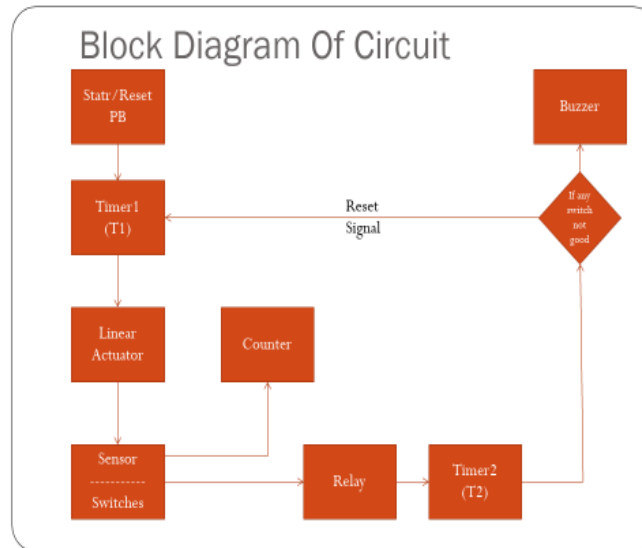


Fig 1: Block diagram of circuit.

2.1 OPERATION METHOD

A) Installation of NC switch

Specimen installation: first install the NC switch to press to the initial position, then the NC switch get off. During installation we are going to do number of door switch testing. We are going to connected them in series with switches. In each switch led is fixed on back side.

B) Installation of the linear actuator

Mount the linear actuator tightly in the fixture and adjust the position forward and backward.

C) Test Method

Install the switches and adjust their position, point it by hand so that the switch under Method test can be turned on and off normally. Set up all the timer (1,2) counter parameters according to the test requirement. Press “start” button, then testing start Test with detecting the good or bad of the switches stop after reaching the sated number of timing. When linear actuator presses the switches and proximity sensor sense and count it. If switch is not working the bad of the sample during the test. When test the reaches predetermined number of timing, the test is automatically stopping the process. RLC circuit is operated the buzzer.

III. COMPONENTS REQUIRED

| | |
|---------------------------|---------------------|
| Relay (5 in/pole) | 3-way rotary switch |
| Red and green push button | NO and NC switch |
| Proximity sensor | TB connector |
| Indicator lamp (230V) | Door switch |
| Single pole MCB 6A | Linear actuator |

3.1 COMPONENTS INFORMATION

A) *Linear actuator*

A linear actuator is a mechanical device that converts energy (power from air, electricity or liquid) to create motion in a straight line; contrasted with circular motion of a conventional electric motor. It can also be used to apply a force. Types of motion include: blocking, clamping, ejecting, lifting, descending, pushing or pulling. In our mega project the linear actuator works in the press the push button in after 2 seconds. Means the linear actuator is working in check the any door switch has been not working conditions or working conditions. They are linear actuator is pressing the door switches button.

B) *Proximity sensor*

Proximity sensor is a non-contact sensor that detects the presence of an object. And proximity sensor are the works on our mega projects like they are sense the linear actuator working conditions. That means the linear actuator passing to the push button they are sense the metal parts of actuator. And send the signal from timer.

C) *Digital timer*

A Timer is a control device that outputs a signal at a preset time after an input signal is received. The timer is count how much time to press the door switches button.

- 1) *Timer1*: This is the main timer which will activates the linear actuator time to time as per sated timing. The start pules to the timer is given through a push button. To reset timer user can reset manually with push button and when and error occurs timer get reset pulse through timer (T2).
- 2) *Timer2*: This timer start signal is given to the timer via relay NC terminal and reset signal via relay NO terminal. The relay is connected in series with testing switch. This timer is sated 2 sec more than that (T1).

D) *Digital counters*

Digital counters are electronic devices that perform a variety of counting functions.

In this project accouter are used to In case of counter sensor is placed in front of actuator with testing switches. When switches when the switches the actuator plate touch the sensor and timer take a count.

E) Relay logic circuit (RLC)

A relay logic circuit is an electrical network consisting of lines, or rungs, in which each line or rung must have continuity to enable the output device. A typical circuit consists of a number of rungs, with each rung controlling an output.

Relay ladder circuits are the precursor to RLC. Advanced machines and processes can be controlled by the interconnection of relays acting as logic gates much like a digital logic circuit.

IV. HOW DE RELAY LOGIC SYSTEMS WORK?

Relay logic basically consists of relays wired up in a particular fashion to perform the desired switching operations. The circuit incorporates relays along with other components such as switches, motors, timers, actuators, contactors etc

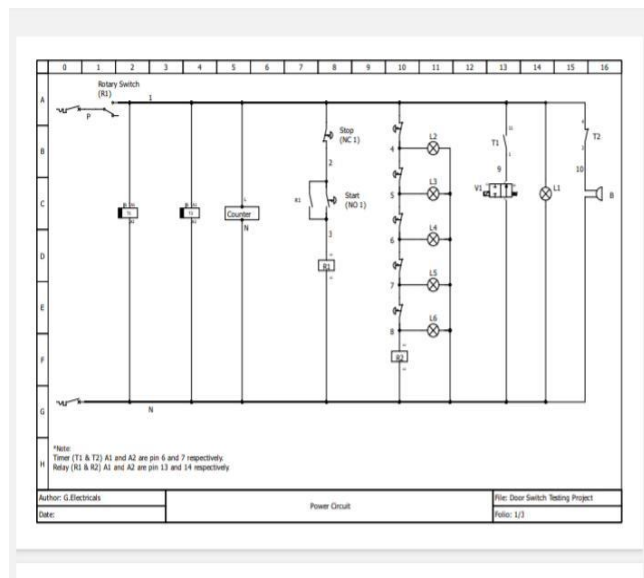


Fig (2): power circuit connection diagram.

In this circuit we can see how the power supply is given to different components. The switches to be tested are connected in series. You can see them in column 10. After every switch a lamp is connect this is to indicate which switch is working which is not. When buttons are released this lamps glows and when switch is pressed it does not glow. Due to this lamps it is easy to know the working status of the switches.

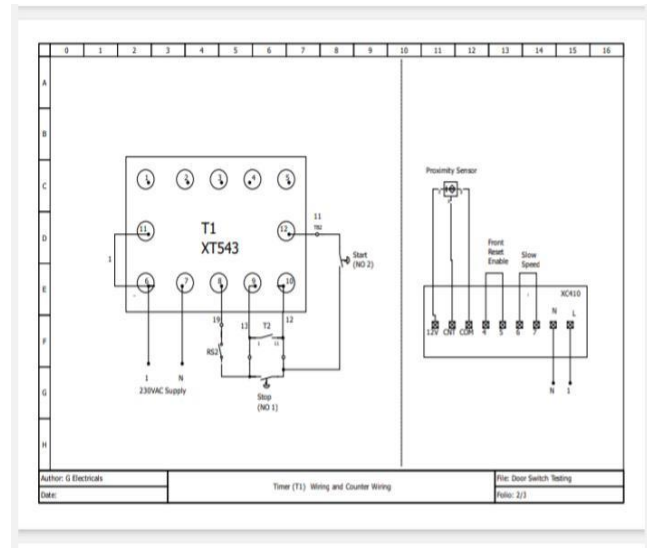


Fig (3): Timer1 and counter connection diagram.

In this circuit the Timer (T1) is the main timer which will activate the Linear Actuator time to time as per seted timing. The start pulse to the timer is given through a push button. To reset timer user can reset It manually with a push Button and when an error occurs timer gets reset pulse through Timer2 (T2).In Case of counter a sensor is place in front if the actuator with testing switches. When the actuator press the switches the actuator plate touches the sensor and the timer takes a count.

V. CONCLUSION

The switch and plug socket life testing equipment uses cylinder to provide power, which is then used to propel a slide assembly with a plug fixture through a reciprocating line motion to simulate switching on and off. RLC (Relay Logic Circuit) and touch screen are used to manage its action frequency and on/off time, and they are both simple to use and dependable to control.

REFERENCE

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