What is the Relay and how it's Works

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Have you ever asked yourself what if you press an electrical control switch with high electrical capacity, what will happen? Let me tell you that you will be electrocuted, so some special electrical elements are used to control the operation of high-voltage electrical circuits, for example, the contactor, the "Relay", which is our topic in this article. We will know what a relay is? And how does it work? And what is its exact mechanism of action?

Definition of Relay :

The relay is an electrical component that allows controlling electrical circuits that operate on high voltages by using a lower voltage that does not exceed 12 volts in order to avoid electrocution. The relay contains a coil of copper that generates a magnetic field when the electric current passes inside it, which leads to To separate or connect the external electrical circuit that operates on a high voltage of more than 220 volts, which makes the relay element one of the most important electronic elements that are widespread and widely used in the field of electronics and electricity alike.

Relay Components and terminals :

The relay element consists of five basic terminals, two of which are fed to the coil inside it, which is responsible for magnetic field units to connect the load circuit or the external circuit. This explains the most important names and functions of the terminals of the relay element:

Open end NO: It is the open end of the relay compound in the normal state.

Closed end NC: It is the closed end of the relay element in its normal state.

The common party: it is the party that participates with the open and closed party NO/NC.

The two ends of the magnetic coil: They are the two parties responsible for feeding the electric coil to create a magnetic field inside the relay, and it is considered the basis for the work of the electric relay.

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Relay working principle :

In the normal state of the relay element, the closed end NC is connected to the common end, and thus no electric current passes in the external circuit or the load circuit, but in the case of feeding the magnetic coil, which generates a magnetic field that attracts the common end to the open end NO to become a closed circuit and allow the passage of electric current to the load, this is simply the working principle of a relay.

features of Relay :

The relay component is cheap and available in all electronic markets and stores that sell electronic components.

Ease of use in simple and complex electrical circuits, where any beginner in the field of electronics can use it.

It can be easily maintained.

The importance of the relay element is evident in that it controls electrical circuits that depend on high voltage and power without being subjected to electrocution during the operation of electrical current switches. It is also widely used in many projects and electronic devices, but its main role is to control electrical circuits with High voltage through an electronic circuit whose voltage does not exceed 12 volts.

Relay element defects :

One of the most common problems and defects of the relay is that it emits an annoying sound while operating it.

The magnetic coil is often damaged during the operation of the relay frequently.

Relay uses :

The relay element is used to control and operate electric motors and pumps.

It is also used in some microelectronic control circuits.

Any load of any type, such as a lamp or an electrical device that works with electricity, can be connected to it and operate it.

Conclusion :

And in the end, this was a comprehensive topic about the relay element, which is considered the most important semi-automatic electrical switches in the field of electricity and electronics. Do not forget to share the article with your friends for the benefit to spread .