

# Distance relays

There is one type of relay which functions depending upon the distance of fault in the line. More specifically, the relay operates depending upon the impedance between the point of fault and the point where relay is installed. These relays are known as **distance relay** or **impedance relay**.

# **Working Principle of Distance or Impedance Relay**

**The working principle of distance relay or impedance relay is very simple. There is one voltage element from potential transformer and an current element fed from current transformer of the system.**

The deflecting torque is produced by secondary current of CT and restoring torque is produced by voltage of potential transformer. In normal operating condition, restoring torque is more than deflecting torque. Hence relay will not operate. But in faulty condition, the current becomes quite large whereas voltage becomes less.

Consequently, deflecting torque becomes more than restoring torque and dynamic parts of the relay starts moving which ultimately close the No contact of relay. Hence clearly operation or working principle of distance relay, depends upon the ratio of system voltage and current. As the ratio of voltage to current is nothing but impedance a distance relay is also known as impedance relay.