# 3. Biased beam relay or percentage differential relay

- The biased beam relay also called percentage differential relay is designed to respond to the differential current in terms of its fractional relation to the current flowing through the protected section.
- It's called percentage differential relay because the ratio of differential operating current to average restraining current is a fixed percentage.
- It's called bias relay because restraining known as biased coil produces the bias force. Fig 17 a, shows the schematic arrangements of biased beam relay. It is essentially an over curren ıining coil. T posite directi

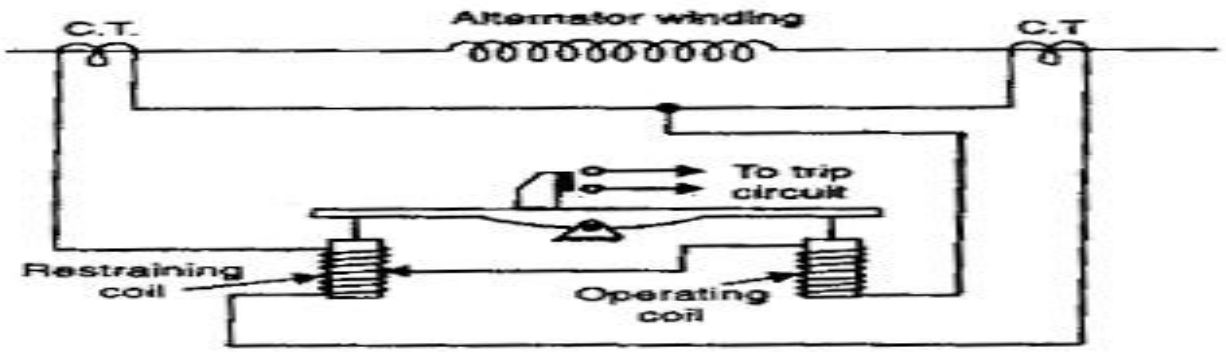


fig 17 a

# 3. Biased beam relay or percentage differential relay

- Under normal and through load conditions, the bias force due to restraining coil is greater than operating force. Therefore, the relay remains inoperative.

UNDER NORNAL OPERATION

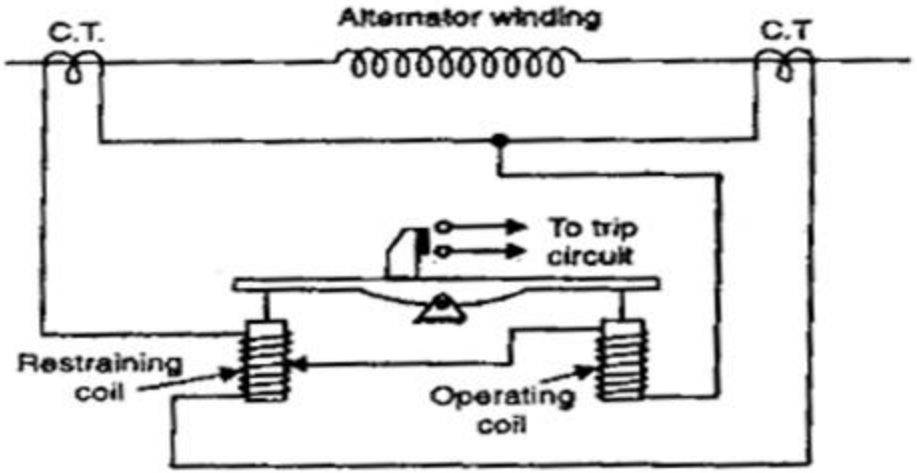


fig 17 a

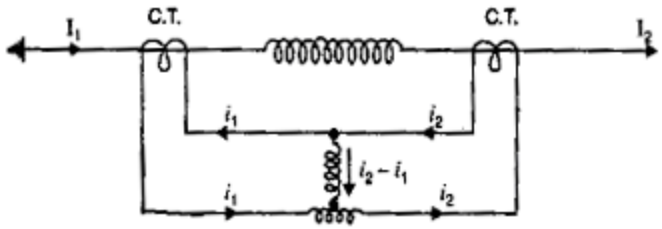


fig 17 b

# 3. Biased beam relay or percentage differential relay

- When an internal fault occurs, the operating force exceeds the bias force. Consequently the trip contacts are closed to open the circuit breaker.
- The bias force can be adjusted by varying the number of turns on the restraining coil.