

# **Circuit Breaking**

# Properties of arc

During opening of current carrying contacts in a circuit breaker the medium in between opening contacts become highly ionized through which the interrupting current gets low resistive path and continues to flow through this path even the contacts are physically separated. During the flowing of current from one contact to other the path becomes so heated that it glows. This is called **arc**.

Whenever, on load current contacts of circuit breaker open there is an **arc in circuit breaker**, established between the separating contacts. As long as this arc is sustained in between the contacts the current through the circuit breaker will not be interrupted finally as because arc is itself a conductive path of electricity.

For total interruption of current the circuit breaker it is essential to quench the arc as quick as possible. The main designing criteria of a circuit breaker is to provide appropriate technology of **arc quenching** in circuit breaker to fulfill quick and safe current interruption. So before going through different arc quenching techniques employed in circuit breaker, we should try to understand ;what is arc; and basic theory of **arc in circuit breaker**, let's discuss.

There are numbers of free electrons and ions present in a gas at room temperature due to ultraviolet rays, cosmic rays and radioactivity of the earth. These free electrons and ions are so few in number that they are insufficient to sustain conduction of electricity. There are numbers of free electrons and ions present in a gas at room temperature due to ultraviolet rays, cosmic rays and radioactivity of the earth. These free electrons and ions are so few in number that they are insufficient to sustain conduction of electricity. The gas molecules move randomly at room temperature.