

Abstract

Electricity is one of the prime necessities of modern human life. In the era of power crises, one has to think for the rational use of electrical energy. The rational use of electrical energy calls for economic generation, transmission & distribution with little loss. This can be achieved by restricting all the parameters, which causes loss. One of the factors, which cause loss in electrical power network, is lagging reactive power. The purpose of system for power factor correction in network is to compensate the generated lagging reactive power by leading reactive power at defined nodes. Automatic power factor corrector reduces the lagging reactive power component transmitted over the network by switching capacitor connected parallel to supply network. The automatic power factor corrector (APFC) can be realized by electromechanical contactor or by static power switch (thyristor). The APFC system using electromechanical contactors cannot give fast response under randomly varying load condition. Under such condition, thyristor switched automatic power factor corrector can give fast response compared to electromechanical contactor switching system. The response time of thyristor switched APFC system is about 20 to 200 millisecond compared to 60 to 90 sec in case of switching by electromagnetic contactors.