DESIGN AND SIMULATION OF AUTOMATIC POWER FACTOR CORRECTION FOR INDUSTRY APPLICATION

Abstract:

In the present technological revolution power is very precious. So we need to find out the causes of power loss and improve the power system. Due to industrialization the use of inductive load increases and hence power system losses its efficiency. So we need to improve the power factor with a suitable method of automatic power factor correction.

This study undertakes the design and simulation of an automatic power factor correction that is developed using arduino microcontroller ATmega328. Automatic power factor correction device reads power factor from line voltage and line current.

This time values are then calibrated as phase angle and corresponding power factor. The display used was 4X16 liquid crystal display module. The motherboard calculates the compensation requirement and accordingly switches on different capacitor banks will run.

This automatic power factor correction technique can be applied to the industries, power systems and also households to make them stable and due to that the system becomes stable and efficiency of the system as well as the apparatus increases.
The use of microcontroller reduces the costs and the customers become beneficial according to the simulated output because the power factor of the specific selected industry is corrected from 0.66 to 0.92 improved value.

**Block Diagram:-**