

FLEXIBLE AC TRANSMISSION SYSTEM USING TSR

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Abstract

The project aims at achieving FACTS by using TSR (Thyristor Switch Reactance). It is done when there is very low or minor load at receiving end while charging the transmission line. Since the presence of low load, small current flows through transmission line therefore the shunt capacitance becomes more prominent. Due to this voltage amplification or Ferranti Effect occurs and the voltage at receiving end increases two times than the voltage at sending end. For this reason to compensate, shunt inductors are automatically connected across the transmission line. The project requires an operational amplifier that generates lead time between zero voltage pulse and zero current pulse. This lead time is given to two interrupt pins of microcontroller of 8051 family. The programmed microcontroller then initiates shunt reactors for compensating the voltage. SCRs arranged in series interfaced with microcontroller through optical isolation are used for switching reactor. Flexible AC Transmitter System (FACTS) consists of static equipment that is used for AC transmission of electrical signals. It is used to increase controllability and to increase the power transfer capability of an AC transmission system. This project can be enhanced by using firing angle control methodology for smooth control of voltage . Flexible AC Transmitter System increases the reliability of AC grids and reduces power delivery costs. They also increase the quality of transmission and efficiency of power transmission. The Flexible AC Transmission System Using TSR is shown in Figure 1.

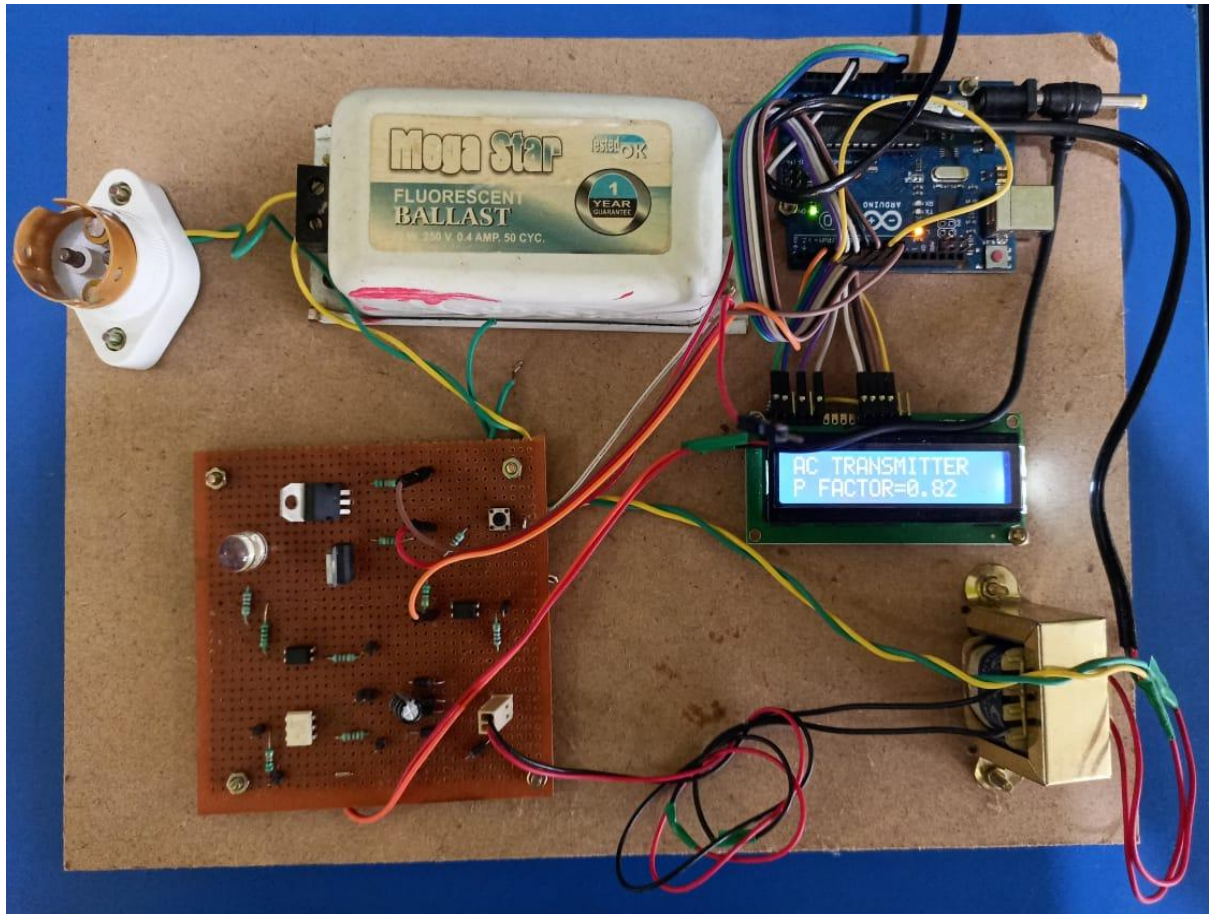


Figure 1. FLEXIBLE AC TRNSMISSION SYSTEM USING TSR