



BIDIRECTIONAL ROTATION OF AN INDUCTION MOTOR WITH A REMOTE CONTROL DEVICE

ABSTRACT

The project is designed to drive an induction motor for the required application in forward and reverse directions using wireless technology. For an example, an exhaust fan can be used in both the directions to fresh air in and throw hot air out. This can be used in case of conventional exhaust a fan that rotates in one direction only.

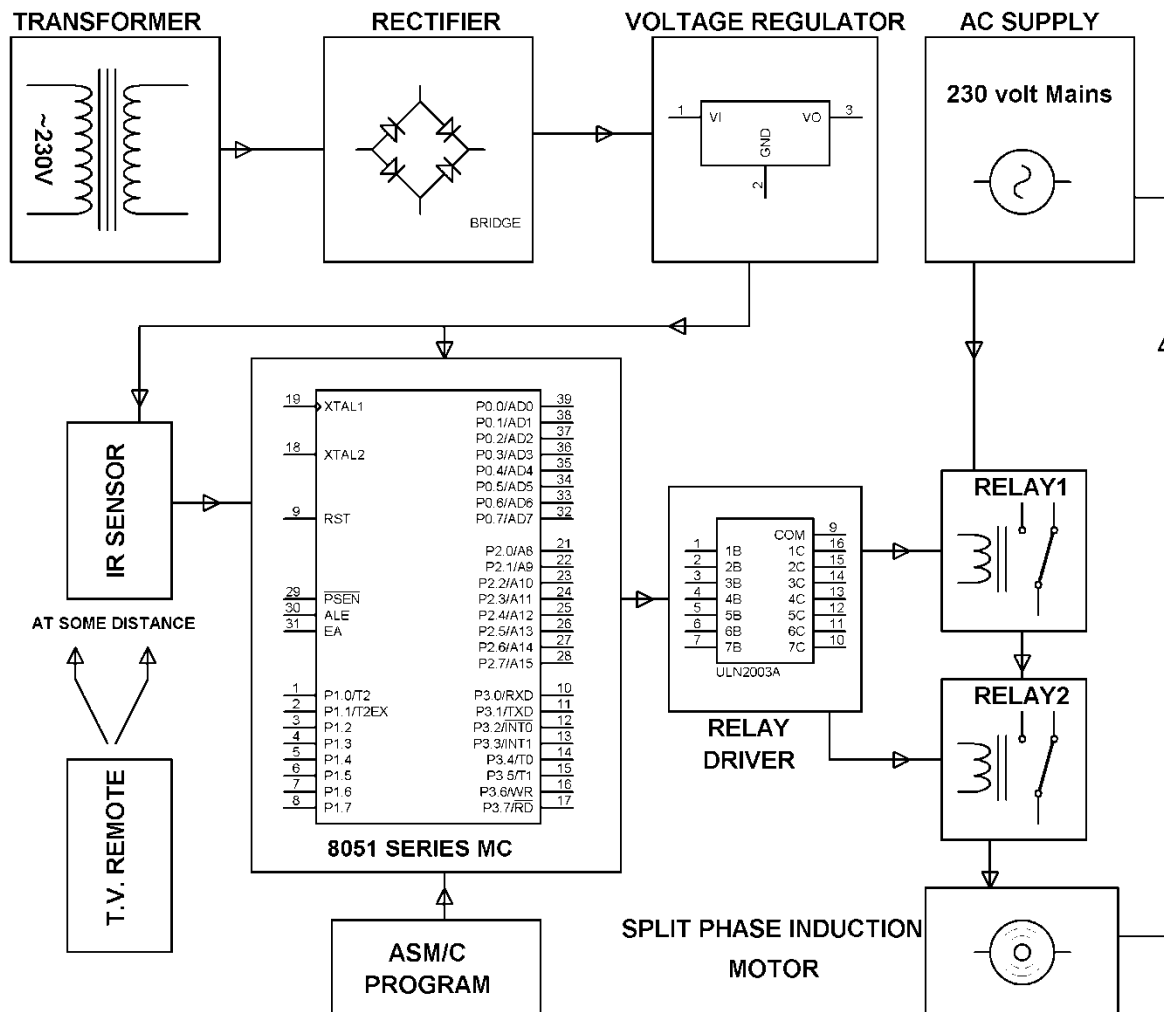
This proposed system demonstrates a technology to rotate a squirrel cage induction motor in both clockwise and counter clockwise direction. It also has the provision to control the direction of the motor using a TV remote. When a TV remote button is pressed, it sends an IR signal in RC5 code which is received by a IR receiver called TSOP-1738. Output from the TSOP is fed to a microcontroller of 8051 family which is interfaced to a relay driver IC. Thereafter, the relay switching is done in by-stable mode for an split-phase induction motor to rotate in forward and reverse directions.

In future, it can further be enhanced by controlling the operation of induction motor using thyristors in place of relays for noise free operation.

Note: An induction motor is used to observe the output of the project. Motor is not supplied along with the kit. However, it can be purchased on extra cost.



BLOCK DIAGRAM



HARDWARE REQUIREMENTS:

- 8051 series Microcontroller, Crystal, IR Sensor, Relay Driver IC, Relays, Transformer, Diodes, Voltage Regulator, Capacitors, LED, Resistors, TV Remote.

SOFTWARE REQUIREMENTS:

- Keil Compiler
- Language: Embedded C or Assembly.