

EXP. No (3)

Electromagnetic Induction Type over Current Relay

Introduction:

The induction type over current relay has a metal disk, the rotation of which opens or closes the relay contacts. The disk is acted upon by a driving torque between the poles of which the disk turns. The magnet has a winding and a shading coil on the pole the driving torque of such a magnet is proportional to the square of the current in the coil. A permanent magnet is used to provide a braking torque proportional to the angular speed of the disk and rotates at a speed proportional to the driving torque and the operating torque inversely proportional to the driving torque. In slow speed over current relays are mostly of induction type both time and current setting are adjustable.

Object:

The aim of the experiment is to determine the current time characteristics for electromagnetic type over current relay.

Apparatus:

- i) current source
- ii) Ammeter (0-20)A
- iii) Timer
- iv) Induction type relay (BBC1CM2 KO)

Circuit diagram:

Connect the circuit as shown in fig (1).

Procedure:

- 1- Select the time dial setting (for example 100%)
- 2- Set the ammeter reading to 5A and find the time for the relay operation from the timer the current setting in this case is: $\frac{5A \times 0.5}{2.5} = A$
- 3- Change the ammeter reading in steps of 2A till the current setting value is 15A, plot the time current characteristic.
- 4- Repeat the experiment for other time and current setting as desired.

Graph:

Plot all the time current characteristics.

Conclusion:

Note that the induction type over current relay can give inverse time and extremely inverse time characteristic.

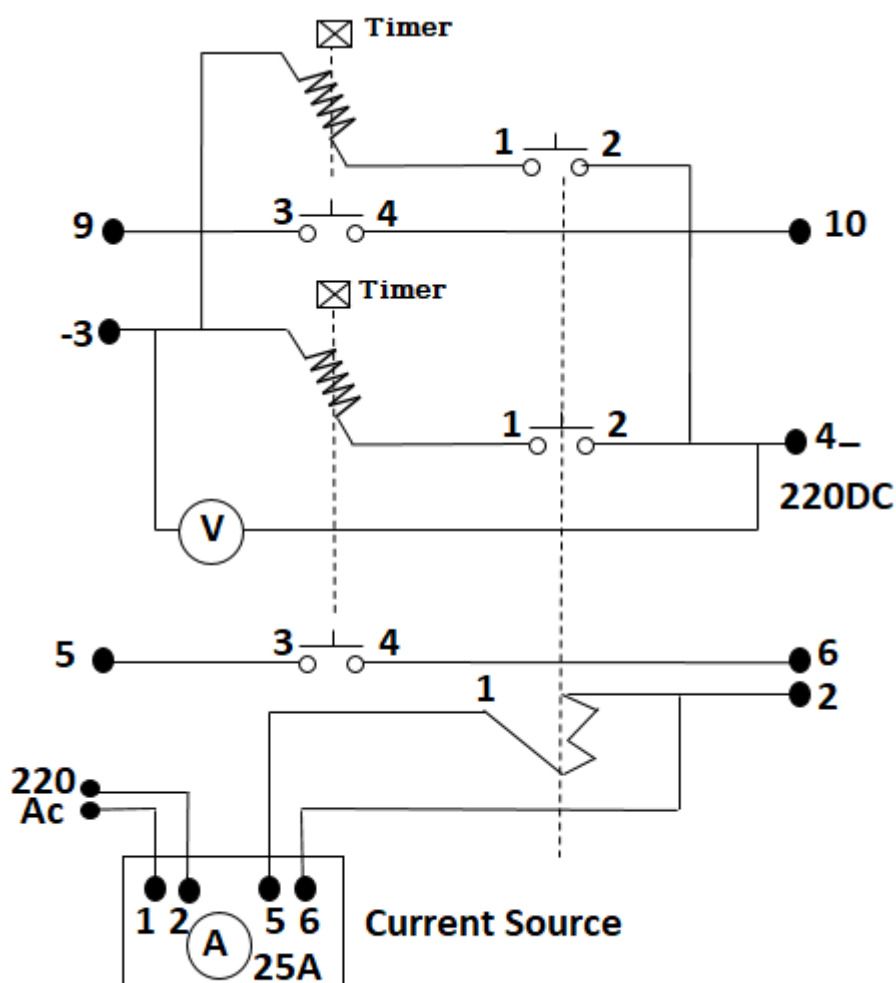


Fig.(1)Electromagnetic Induction Type over Current Relay