

Aim: Familiarisation of the electrical machine laboratory apparatus

Theory:

Resistor: It is the opposition to current. Equal to voltage divided by current. SI unit is Ω

$$R = V/I$$

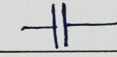
Symbol



Capacitor: Passive, two terminal component that stores energy electrostatically in electric field. Consists of two plates separated by dielectric material, which increases charge capacity. Capacitors are used in various electrical circuits.

$$C = Q/V$$

Symbol

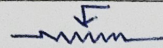


Inductor: An inductor, or choke is a passive component made of wire coil that induces a magnetic field when current flows through it. It has a stronger magnetic field than a simple coil wrapped around a magnetic solid core.

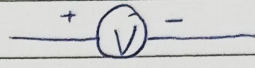
Symbol:

Rheostat: Adjustable resistor used to vary current or resistance in a circuit. It can be generator characteristics, dim lights and control motor speed.

Symbol:



Voltmeter : Potential difference between two points is measured using this. Can be designed for both DC & AC. Typically consists of a galvanometer with a series resistance to avoid drawing too much current.

Symbol 

Ammeter : Measures current in amperes. Has negligible internal resistance. Galvanometer can be converted into ammeter using a shunt resistance.

Symbol :

Relay : Opens

Relay : Opens or closes contacts to control other electrical devices. Operates on electromagnetic attraction, moving an armature to open or close connections.

Circuit Breaker : A circuit breaker interrupts or faults current and functions as a switch. It protects electrical systems from damage by opening or closing circuits.

Auto

Auto transformer : Has single winding on a laminated core, with part of winding shared between primary & secondary sides. It acts as a voltage regulator, supplying part of

Experiment :

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load current directly from the supply and
the rest through transformer action