Chapter-10

(Understand the construction & working principle of

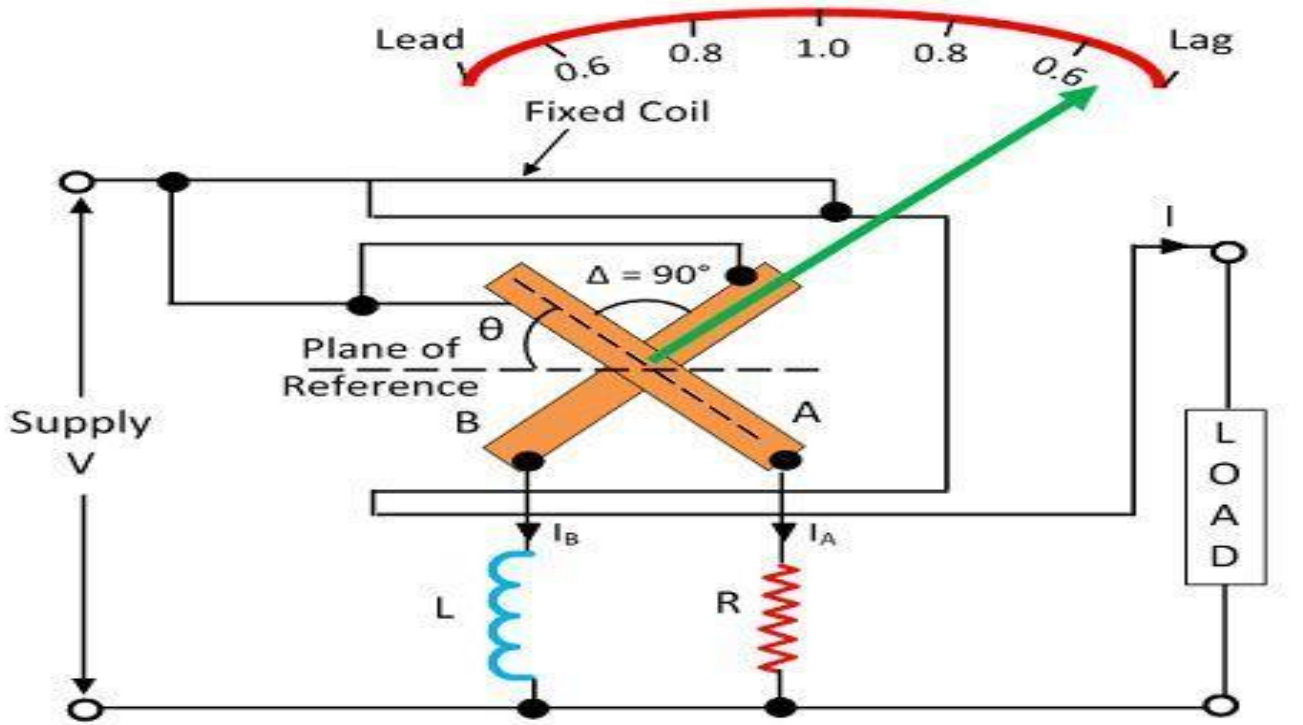
Power Factor Meter)

Lecture-2

Construction of a Power Factor Meter?

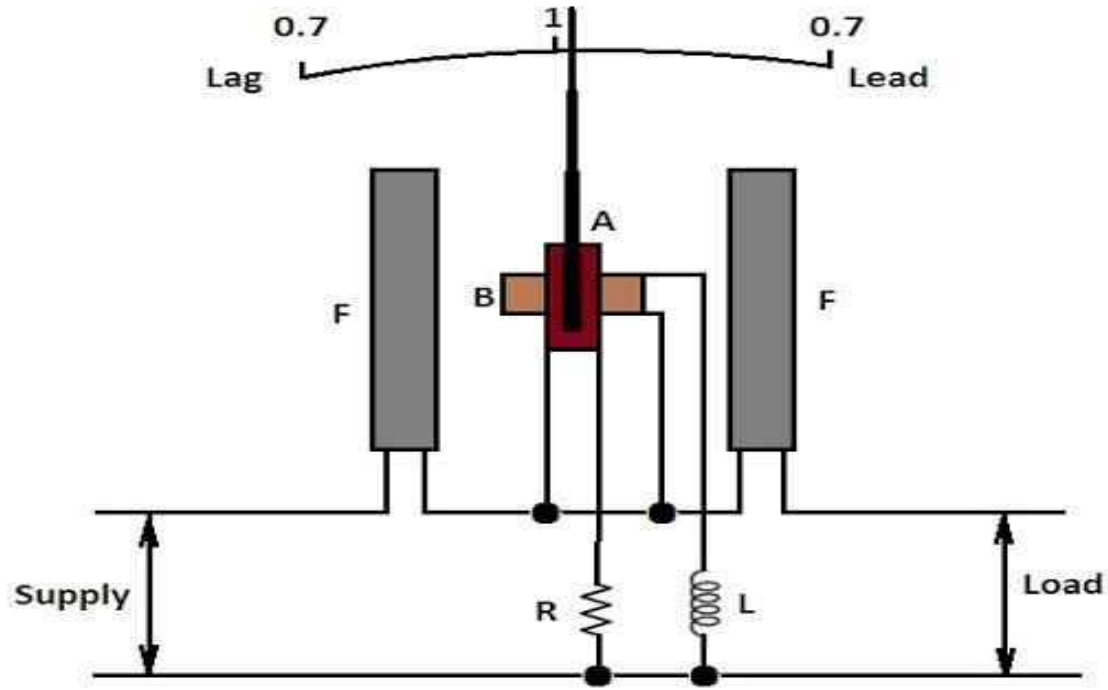
- The current coils FF are wound with thick wire whereas pressure coils A and B are wound with fine wire. The pressure coils fixed on the same spindle, to which a pointer is attached, constitutes the moving system. The pressure coil A is connected across the supply through a non-inductive resistant and pressure coil B is connected across the supply through highly inductive choke coil of inductance L. The value of resistance R and inductance L are so chosen that for the main supply frequency, the current in the two pressure coils A and B is the same.Thus the fields produced by the two coils are of the same strength. The field produced by the coil B lags behind the field produced by the coil A slightly less than 90° because of resistance of the coil. Accordingly while fixing the coil B the plane of this coil is displaced from the plane of the coil A by the electrical angle which is slightly less than 90°.
- However while discussing the action (working) of the instrument it will be assumed that the phase difference between the two currents flowing through the coils A and B is 90° and same is the angle between the planes of the coils.
- Though power factor meter is an indicating instrument but no controlling torque is provided in this instrument. The currents are being led into the moving coils A and B by fine ligaments which exert no control.

Dynamo-type P.F Meter:



Single Phase Electrodynamometer
Type Power Factor Meter

Circuit Globe



Single phase power factor meter

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