Principle of moving coil galvanometer

Current carrying rectangular coil in uniform magnetic field experiences torque

List of materials at construction of moving coil galvanometer

- Rectangular coil
- Insulate copper wire
- Non magnetic metallic frame
- Torsion head
- Permanent magnetic poles
- Spiral spring
- Needle

Arrangement of rectangular coils in moving coil galvanometer

Wounded on non magnetic metallic frame

Structure of connection of torsion head and coils in moving coil galvanometer

Phosphor bronze wire

Role of needle in moving coil galvanometer

Measure deflection of coil

Number of forces in in action in the coil in moving coil galvanometer

2

List of forces in action in the coil in moving coil galvanometer

- Deforming torque by magnetic field
- Restoring torque by spring

Structure providing deforming torque in moving coil galvanometer

Magnetic field

Structure providing restoring torque in moving coil galvanometer

Sprint

Expression for maximum deforming in moving coil galvanometer

$$\text{Deforming torque} = BINA$$

Expression for restoring torque in moving coil galvanometer

$$\text{Restoring torque} = k\theta$$

Derivation for expression of current in moving coil galvanometer

- $$BINA = k\theta$$
- $$I = \frac{k\theta}{BNA}$$
- $$I = G\theta$$

Notation for galvanometer constant in moving coil galvanometer

G

Expression for galvanometer constant in moving coil galvanometer

$$G = \frac{k}{BNA}$$

Expression for current in moving coil galvanometer

$$I = G\theta$$

Current sensitivity in moving coil galvanometer

Deflection per unit current

Voltage sensitivity in moving coil galvanometer

Deflection per unit potential difference

Expression for current sensitivity in moving coil galvanometer

- $$\text{Current sensitivity} = \frac{\theta}{I}$$

Expression for current sensitivity in moving coil galvanometer in terms of magnetic field

- $$= \frac{BNA}{k}$$

Expression for voltage sensitivity in moving coil galvanometer

- $$\text{Voltage Sensitivity} = \frac{\theta}{V}$$

Expression for voltage sensitivity in moving coil galvanometer in terms of resistance

- $$\text{Voltage sensitivity} = \frac{BNA}{kR}$$