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Question: 1. Describe how a Permanent Magnet Moving Coil Ammeter W...

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1. Describe how a Permanent Magnet Moving Coil Ammeter Works.
2. Derive an expression relating the measured current and the control torque (assuming spring control).
3. A PMMC Ammeter with a $20\ \Omega$ coil resistance has a full-scale deflection of 10mA . A $0.02\ \Omega$ resistor is placed across the meter to increase its rating capacity. What is the new full-scale current in Amperes of the meter?

Expert Answer



Anonymous answered this
432 answers

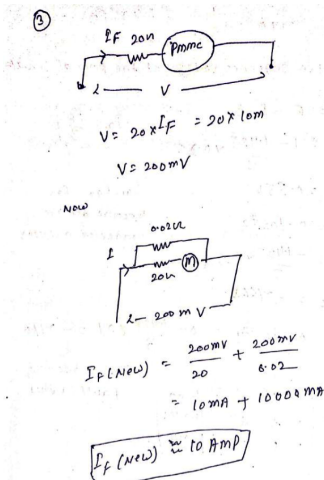
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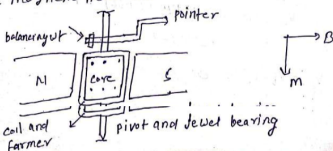
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0



② When a current carrying conductor placed in the magnetic field experiences a force. It



The basic construction of PMMC is shown above

a light rectangular coil wound on a aluminum frame is pivoted within the air gaps b/w the two poles of a permanent magnet. this light rectangular coil carries the current to be measured soft iron core provide formation of uniform magnetic field. the Al frame supports the coil as well as provides eddy current damping. here spring is used for dual purpose

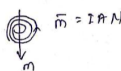
① provide controlling torque

② lead wire to flow current

if spring break down then pointer moves to zero position.

③ when two field are interacted torque is produced.

$$\begin{aligned} T_d &= \vec{M} \times \vec{B} \\ &= MB \sin 90^\circ \\ &= B I A N \end{aligned}$$



$I = \text{current}$
 $N = \text{No of turns}$
 $A = \text{area of rectangular coil}$



so scale is linear.

Comment

Up next for you in Electrical Engineering

Design a circuit that will add wither 1 or 2 to a 4-bit binary number N. Let the inputs N3, N2, N1, N0 represent N. Th...



See answer

Design a circuit that will add either 1 or 2 to a 4-bit binary number N. Let the inputs N3, N2, N1, N0 represent N. The input K is a control signal. The circuit should have outputs M3, M2, M1, M0, which represent the 4-bit

See answer

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