

Answer on Question #50959-Physics-Electromagnetism

A galvanometer with coil resistance $G = 12.0 \text{ ohms}$ show full scale deflection for a current of $I_g = 2.5 \text{ mA}$. How would you convert it into a voltmeter of range 0 to 10.0 V?

- a) 3988 ohms in series
- b) 0.4 ohms in parallel
- c) 2000 ohms in parallel
- d) 1.62 ohms in series

Solution

$$V = 10.0V, R = ?$$

$$R = \frac{V}{I_g} - G = \frac{10.0}{2.5 \cdot 10^{-3}} - 12.0 = 3998 \text{ ohms.}$$

Answer: a) 3988 ohms in series.

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