

Answer on Question #48185-Physics-Electric Circuits

You are required to specify the power rating of a resistor, R1, to be used in a car engine management system, so that an order can be placed for the component (resistor).

The resistance required is $R = 2\Omega$. The maximum current that will be flowing in the resistor will be $I = 10A$.

You only have four ratings to choose from. Select the most appropriate power rating for this resistor.

Solution

Given that we know the maximum current and resistance, we can now substitute the values into the power equation of:

$$P = I^2R = 10^2 \cdot 2 = 200 W.$$

Answer: 200 W.