Answer on Question 57898, Physics, Electric Circuits

Question:

Which of the following type of fuse should be used in a plug to connect an electrical appliance with power rating of 3.4 kW running on a 240 V - mains?

a) 13 A fuse

b) 16 A fuse

c) 6 A fuse

d) 14.2 A fuse

Solution:

By the definition of the electric power we have:

$$P = VI,$$

here, V is the voltage, I is the current flowing through an electrical appliance.

From this formula, we can find the current flowing through an electrical appliance:

$$I = \frac{P}{V} = \frac{3.4 \cdot 10^3\ W}{240\ V} = 14.16\ A.$$

We can see from the calculation above that we should use a 14.2 A fuse.

Answer:

d) 14.2 A fuse