

Understanding Basic Concept of Electrical and Electronic Systems

Asadullah Shah



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UNDERSTANDING BASIC CONCEPT OF ELECTRICAL AND ELECTRONIC SYSTEMS

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Asadullah Shah



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12. OHM'S LAW

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12.0 Abstract:

The Ohm's law is comes into three different laws, Ohm's voltage, current and resistance laws. All three laws are used to calculate third quantity knowing any two already. The resistance of a resistor may be calculated knowing current and voltage. Similarly, voltage and current may be calculated knowing resistance and voltage or resistance and current in a circuit respectively.

12.1 Basic concepts:

The three fundamental properties of every electrical circuit are current measured in amperes and represented by symbol (I). The voltage measured in volts and represented by (V), and resistance represented by (R) and the unit of resistance is Ohm's. George Simon Ohm discovered, while experimenting with electrical circuits, that precisely definable - relationship exists between current, voltage and resistance and came up with law. The Ohm's Law states that current (I) is directly proportional to the voltage (V), and is inversely proportional to the resistance (R).

Ohm's Law can also be shown as $I = V/R$, which states that current (I) equals voltage (V) divided by resistance (R). Two useful variations of Ohm's Law are; $R = V/I$ which states that resistance (R) equals voltage (V) divided by current (I), and $V = I \times R$ which states that voltage (V) equals current (I) times resistance (R).