Open-circuit voltage wikipedia

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Open-circuit voltage (abbreviated as OCV or VOC) is the difference of electrical potential between two terminals of an electronic device when disconnected from any circuit.[1] There is no external load connected. No external electric current flows between the terminals. Alternatively, the open-circuit voltage may be thought of as the voltage that must be applied to a solar cell or a battery to stop the current. It is sometimes given the symbol Voc. In network analysis this voltage is also known as the Th?venin voltage.

Find the equivalent resistance in loop 1 to find the current in loop 1. Use Ohm"s law with that current to find the potential drop across the resistance C. Note that since no current is flowing through resistor B, there is no potential drop across it, so it does not affect the open-circuit voltage.

A voltmeter can be used to measure the voltage between two points in a system.[9] Often a common reference potential such as the ground of the system is used as one of the points. In this case, voltage is often mentioned at a point without completely mentioning the other measurement point. A voltage can be associated with either a source of energy or the loss, dissipation, or storage of energy.

The SI unit of work per unit charge is the joule per coulomb, where 1 volt = 1 joule (of work) per 1 coulomb of charge.[citation needed] The old SI definition for volt used power and current; starting in 1990, the quantum Hall and Josephson effect were used,[10] and in 2019 physical constants were given defined values for the definition of all SI units.

The electrochemical potential is the voltage that can be directly measured with a voltmeter.[13][14] The Galvani potential that exists in structures with junctions of dissimilar materials is also work per charge but cannot be measured with a voltmeter in the external circuit (see ? Galvani potential vs. electrochemical potential).

Voltage is defined so that negatively charged objects are pulled towards higher voltages, while positively charged objects are pulled towards lower voltages.[15][16] Therefore, the conventional current in a wire or resistor always flows from higher voltage to lower voltage.

Historically, voltage has been referred to using terms like "tension" and "pressure". Even today, the term "tension" is still used, for example within the phrase "high tension" (HT) which is commonly used in thermionic valve (vacuum tube) based and automotive electronics.

In this case, the voltage increase from point A to point B is equal to the work done per unit charge, against the electric field, to move the charge from A to B without causing any acceleration.[17]: 90-91 Mathematically, this is expressed as the line integral of the electric field along that path. In electrostatics, this line integral is independent of the path

taken.[17]: 91