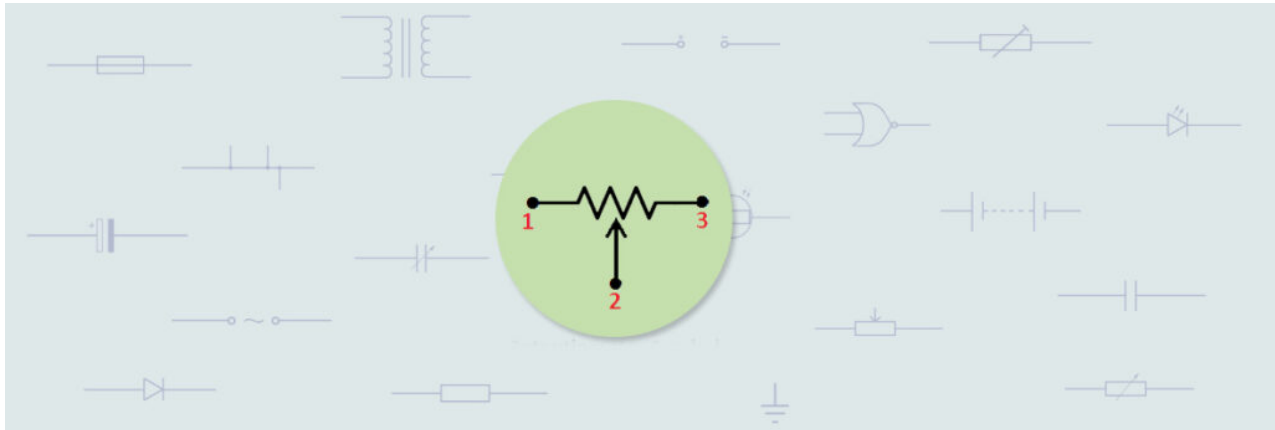


Variable Resistor Symbol: Everything You Need to Know



An electronic symbol is a pictogram used to represent various electrical and electronic devices or functions, such as wires, batteries, resistors, and transistors, in a schematic diagram of an electrical or electronic circuit. Today these symbols are largely standardized internationally but may vary from country to country, or may have different engineering discipline, based on traditional conventions. In this article, Linquip will review the variable resistor symbol. Read on to find out more.

All the information you need to know about variable resistor equipment and devices can be found on the Linquip platform. The experts at Great Ripples are on stand-by to answer any questions you might have regarding variable resistors. We recommend starting by reading Linquip's article entitled "**What is a Variable Resistor?**". To see all the Linquip features, you need to register as a **Linquip Expert**. Creating an account will help you do this.

Did you know that the Linquip platform has a tool for **Guest Posting**? This makes it possible for users to submit posts for access rights from other users.

Standards for symbols

The graphic symbols used for electrical components in circuit diagrams are covered by national and international standards, in particular:

- IEC 60617 (also known as British Standard BS 3939)
- There is also IEC 61131-3 – for ladder-logic symbols
- JIC (Joint Industrial Council) symbols as approved and adopted by the NMTBA (National Machine Tool Builders Association). They have been extracted from the Appendix of the NMTBA Specification EGPl-1967
- ANSI Y32.2-1975 (also known as IEEE Std 315-1975 or CSA Z99-1975).

- IEEE Std 91/91a: graphic symbols for logic functions (used in digital electronics). It is referenced in ANSI Y32.2/IEEE Std 315.
- Australian Standard AS 1102 (based on a slightly modified version of IEC 60617; withdrawn without replacement with a recommendation to use IEC 60617).

The number of standards leads to confusion and errors. Symbols usage is sometimes unique to engineering disciplines, and national or local variations to international standards exist. For example, lighting and power symbols used as part of architectural drawings may be different from symbols for devices used in electronics.

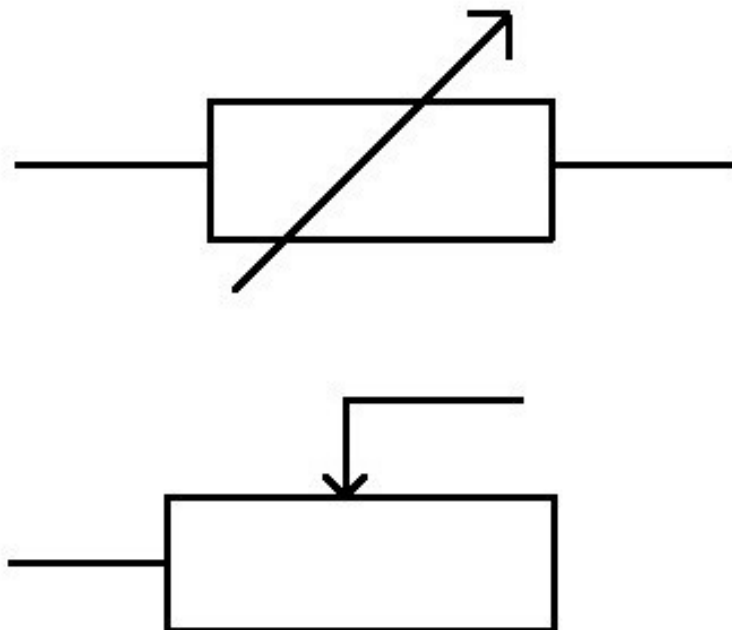
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Everything You Need to Know About Variable Resistor Function

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What is a Variable Resistor symbol?

A variable resistor also called an adjustable resistor, consists of two terminals, where one of the terminals is a sliding or moving contact often known as a wiper. The variable resistor IEC symbol is represented by a rectangular box and an arrow across (or above) it, like that shown in the figure below.



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Variable Resistor: Learn The Basics, Get The Most out of It!

Types of Resistor: classification, application, and finally clarification

Important Detailed Information About The Types of Transducers

Symbols of different variable resistor types

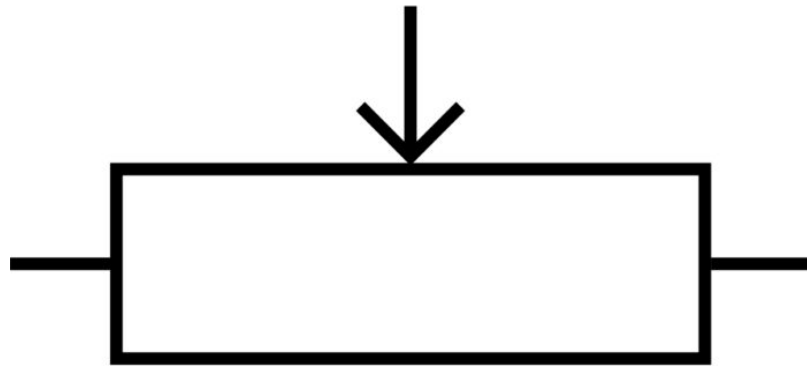
Here are the symbols of different types of variable resistors for electronic design.

Potentiometer

The potentiometer symbol is very similar to the variable resistor symbol; however, it is a three-terminal device. When all three terminals are used in a circuit, and the output voltage is taken from the moving terminal, the variable resistor is known as a potentiometer.

Here, the two fixed terminals are connected across a voltage source. This means the voltage drop across the whole resistive track, is nothing but equal to the voltage source. The output circuit is connected across the moving terminal. This way, by controlling/ changing the position of the moving terminal, we can change the resistance and hence the voltage across the load.

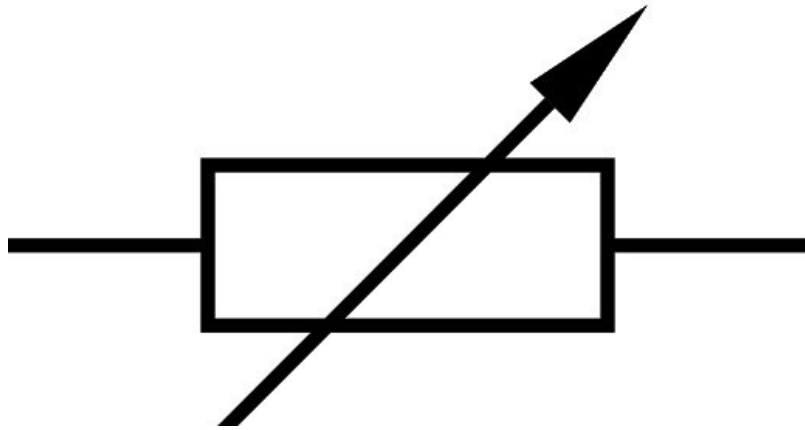
This variable resistor symbol in a circuit diagram is represented as shown in the figure below.



Rheostat

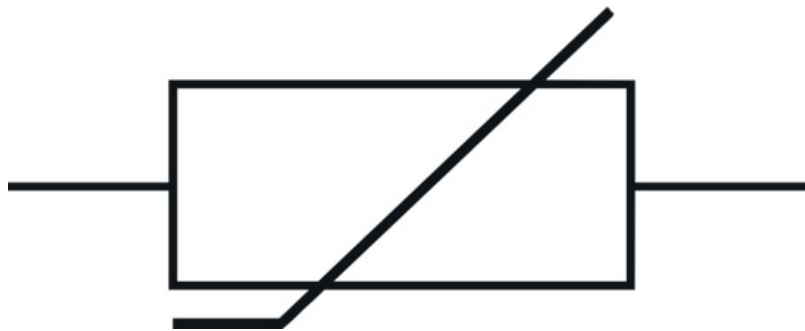
The construction of the rheostat is almost similar to the potentiometer. Like the potentiometer, the rheostat also consists of three terminals. However, in this type of variable resistor, one of the fixed terminals and the moving terminal is used while the third fixed terminal is left unused. Connecting in this way helps to reduce or increase the current through the circuit by just changing the position of the moving wiper. As the resistance changes, the current changes inversely. That is if there is an increase in resistance, the current through the circuit will decrease.

A rectangular box with three terminals and an arrow across it represents the rheostat symbol.



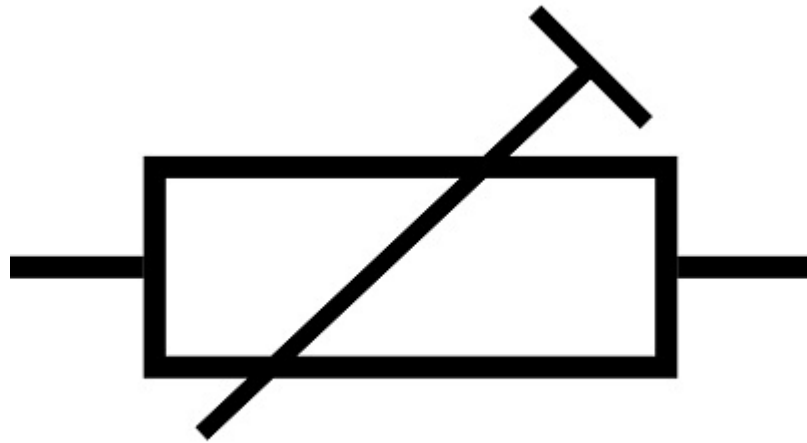
Thermistor

A thermistor is a type of resistor whose resistance changes rapidly with a small temperature change. The international standard symbol of the thermistor is shown in the below figure.



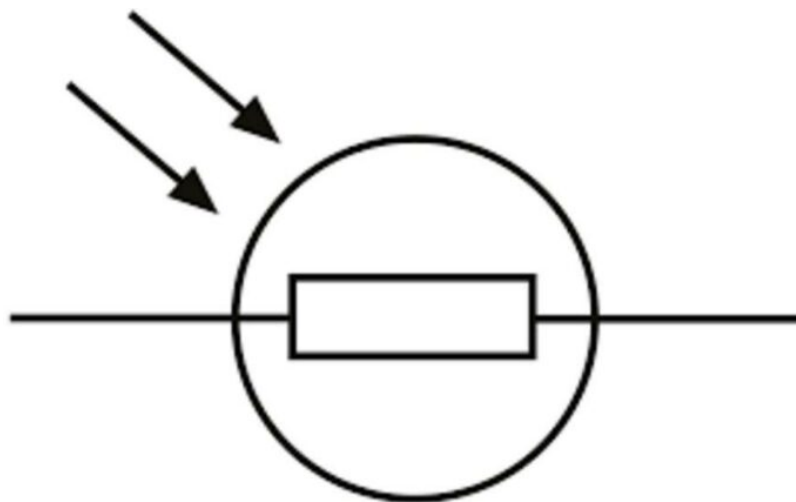
Preset

A preset variable resistor is the micro version of a variable resistor and has three legs or terminals. It can be directly mounted on the circuit. The preset value is adjusted only once during the calibration process of the circuit. It has an adjustable screw attached to the resistor, which is adjusted using a screwdriver, to get the desired resistance. The resistance here varies in a logarithmic manner. This variable resistor symbol is shown in the figure below.



Photoresistor

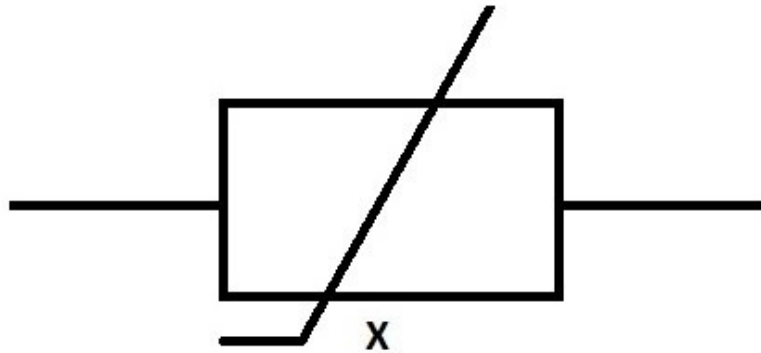
A photoresistor also called a light-dependent resistor (LDR), is a variable resistor whose resistance varies inversely with the intensity of light. To represent a photoresistor in a circuit diagram, the chosen symbol is in a way that would indicate it to be a light-dependent device along with the fact that it is a resistor. The symbol is a resistor with a circle around it. There are also two arrows pointing towards it representing the light.



Magneto Resistor

Magneto Resistor is a special kind of variable resistor, whose electrical resistance depends on the external magnetic force applied to it.

Schematically, in the circuit diagram, the magnetoresistance is represented by the symbol shown below. The arrow through the resistor symbol signifies a variable resistor, while “x” below it denotes that the variable resistor used is a magneto resistor.



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What Does a Variable Resistor Do?

The variable resistor is used in some dimmers and volume controls. A thermistor's resistance varies according to its temperature. When the temperature is low, the resistance is high. On the other hand, when the temperature is raised, the resistance decreases.

What Is the Difference between Fixed and Variable Resistors Symbols?

The following figure illustrates symbols for fixed resistors and variable resistors.



Symbols

Symbols of Fixed resistor and variable resistor (Reference: **rfwireless-world.com**)

So this is everything you need to know about a variable resistor symbol. If you enjoyed this article in Linquip, let us know by leaving a reply in the comment section. Is there any question we can help you with? Feel free to **sign up** on our website to get the most professional advice from our experts.