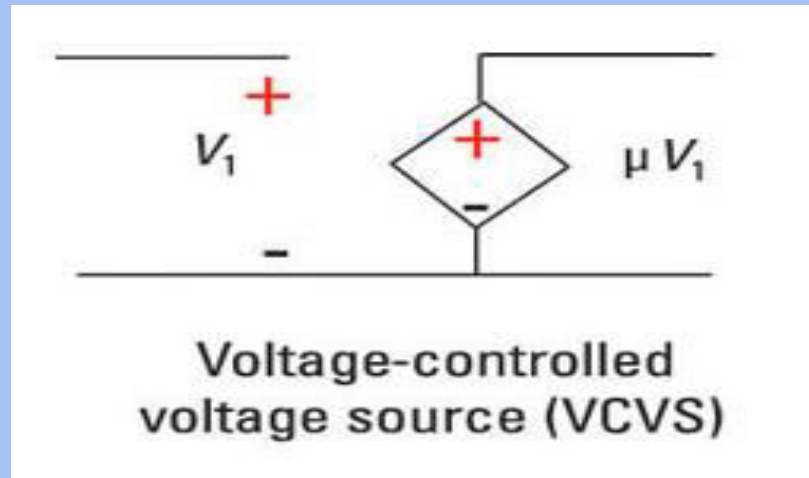


Voltage-Controlled Voltage Source

Elementrix Classes

Voltage-Controlled Voltage Source

A voltage across the input terminals controls a dependent voltage source at the output port.



You can think of μ in the VCVS dependent source as voltage gain because it's the **ratio of the voltage output to the voltage input**.

Example:

Let's assume some values for the components:

Input Voltage (V_{in}): 5 volts

Gain of VCVS (μ): 3

Calculations:

Using the formula for the VCVS:

$$V_{out} = \mu \cdot V_{in}$$

Substitute the given values:

$$V_{\text{out}} = (3) \cdot (5)$$

$$V_{\text{out}} = 15 \text{ volts}$$

Therefore, with an input voltage of 5 volts and a VCVS gain (μ) of 3, the output voltage (V_{out}) would be 15 volts in this example.

This example demonstrates how a Voltage-Controlled Voltage Source with a gain (μ) can amplify the input voltage signal.

पढ़िए और पढ़ाइये

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