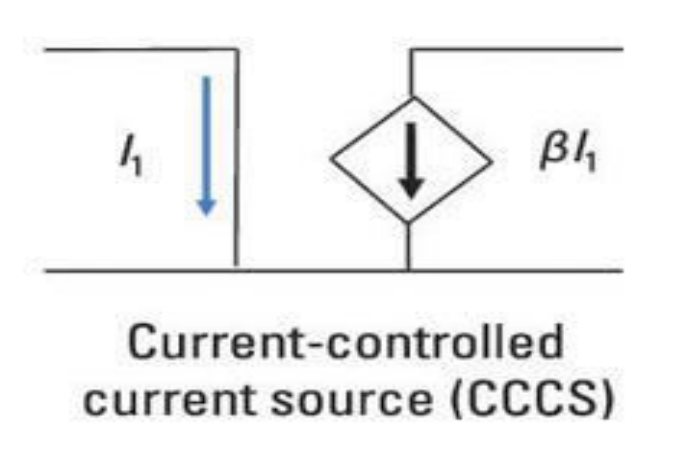
SUBJECT: BASIC ELECTRONICS

Current-Controlled Current Source

Elementrix Classes

Current-Controlled Current Source

With a current flowing through the input port, you can control a dependent current source at the output port.



For the CCCS dependent source, you can think of the proportionality constant **β** as the current gain because it's the **ratio of current output to current input**.

Example:

Let's assume some values for the components:

Controlling Current (Iin): 2 milliamperes (2 mA)

Current Gain (β): 3 (unitless)

Calculation:

Using the formula for the CCCS:

$$I_{out} = \beta \cdot I_c$$

Substitute the given values:

I_{out} = (3)·(2mA)

I_{out} = 6mA

Therefore, with a controlling current of 2 mA and a CCCS current gain (β) of 3, the output current (I_{out}) would be 6 mA in this example.

This example illustrates how a Current-Controlled Current Source can generate an output current that is proportional to a controlling current. The current gain (β) represents the proportionality constant in this context.

पढ़िए और पढ़ाइये

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