Understanding Basic Concept of Electrical and Electronic Systems

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25. INTEGRATOR

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25.0 Abstract:

As its name implies, the **Op-amp Integrator** is an operational amplifier circuit that performs the mathematical operation of **Integration**, that is, it can cause the output to respond to changes in the input voltage over time. The integrator amplifier acts like a storage element that "*produces a voltage output which is proportional to the integral of its input voltage with respect to time*". In other words the magnitude of the output signal is determined by the length of time a voltage is present at its input as the current through the feedback loop charges or discharges the capacitor as the required negative feedback occurs through the capacitor.

25.1 INTEGRATOR

An op-amp integrator simulates mathematical integration which is basically a summing process that determines the total area under the curve of a function i.e., the integrator does integration of the input voltage waveform. Here the input element is resistor and the feedback element is capacitor