

Electrical Measurements & Measuring Instruments

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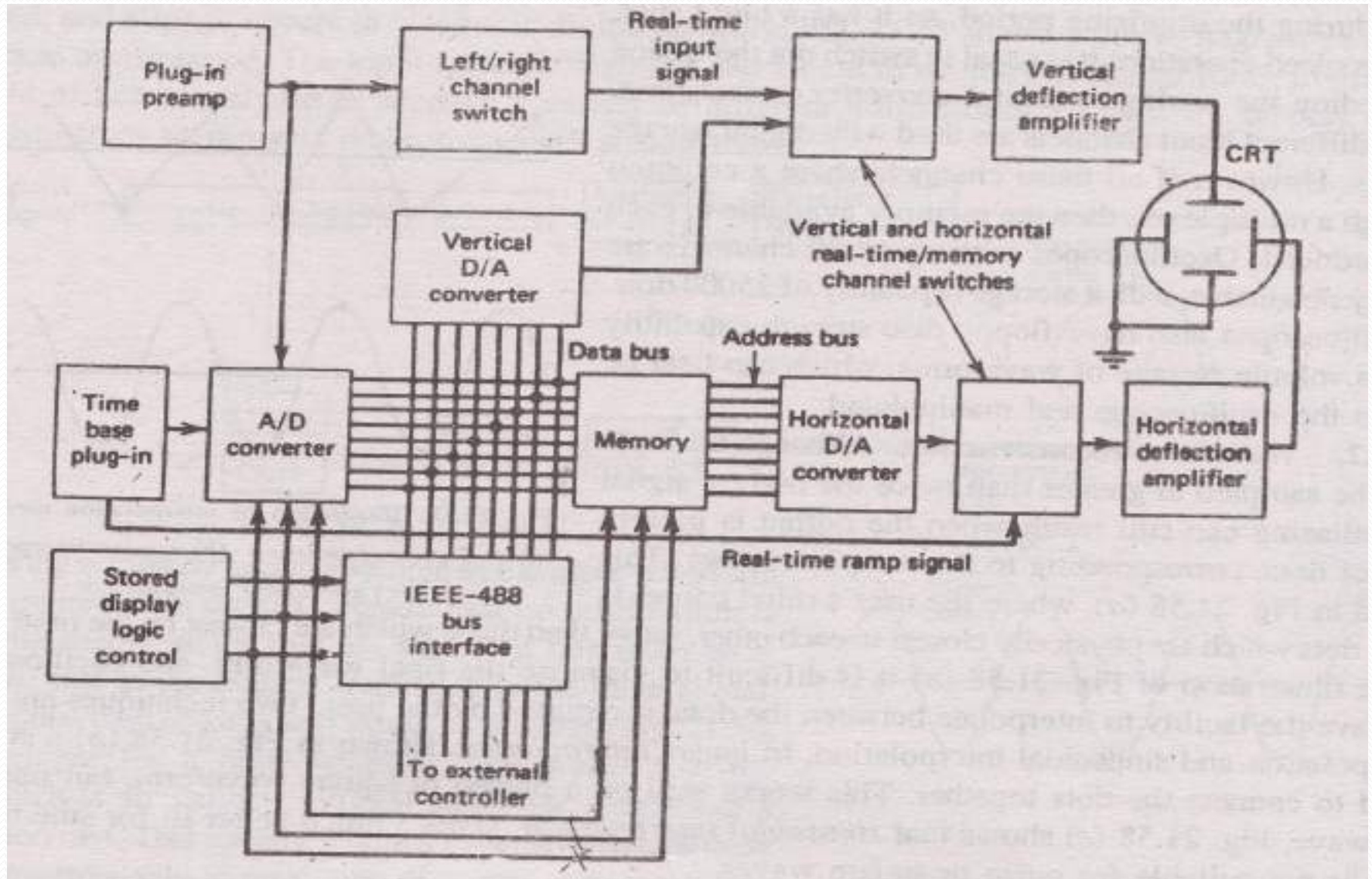
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- Digital Voltmeter (DVM)
- Ramp type
- Integrating type
- Potentiometric type
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Digital Storage Oscilloscope

- A **digital storage oscilloscope (DSO)** is an oscilloscope which stores and analyses the input signal digitally rather than using analog techniques.
- It is now the most common type of oscilloscope in use because of the advanced trigger, storage, display and measurement features which it typically provides.

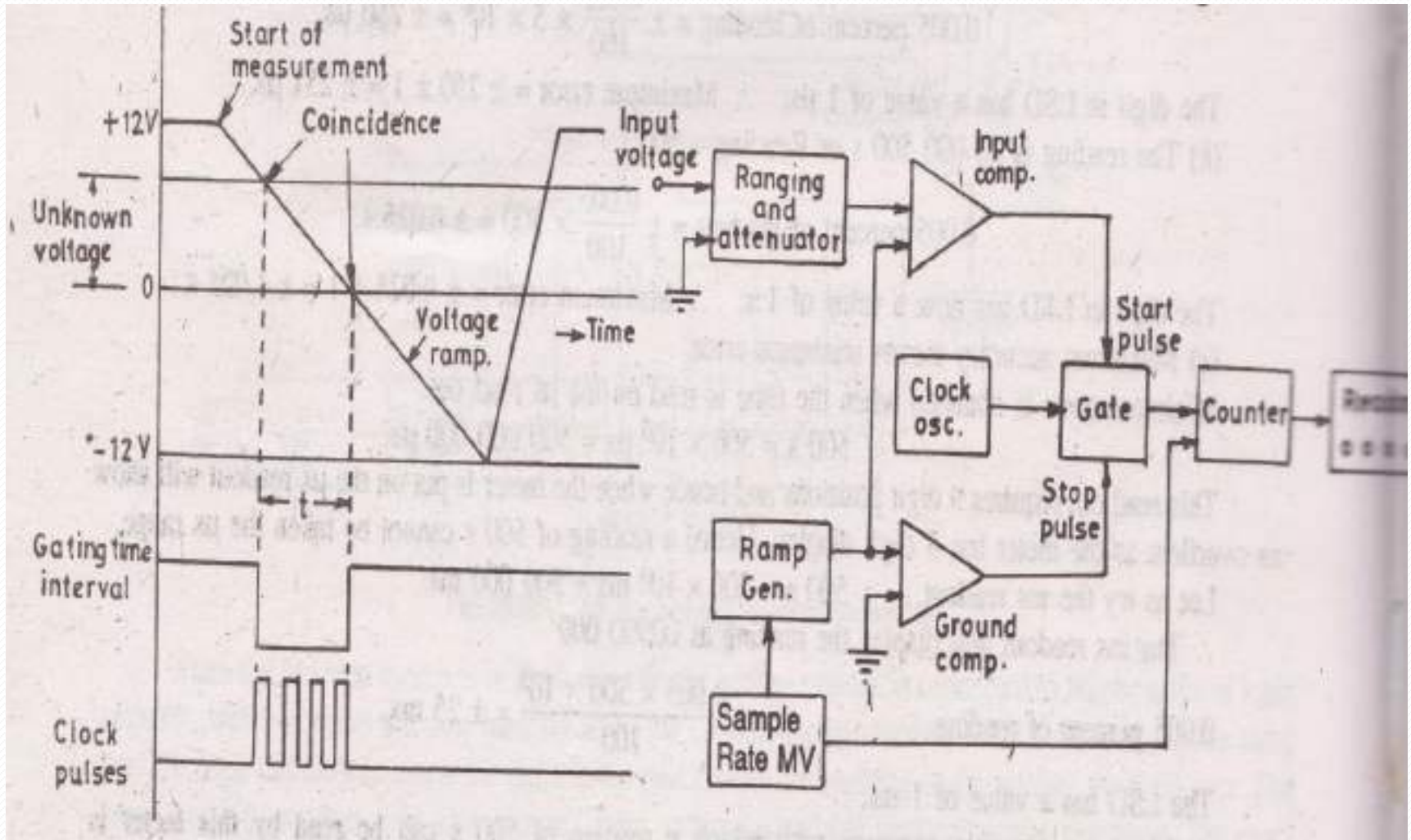
Block Diagram



Digital Voltmeter (DVM)

- Ramp type
- Integrating type
- Potentiometric type
- Successive Approximation type

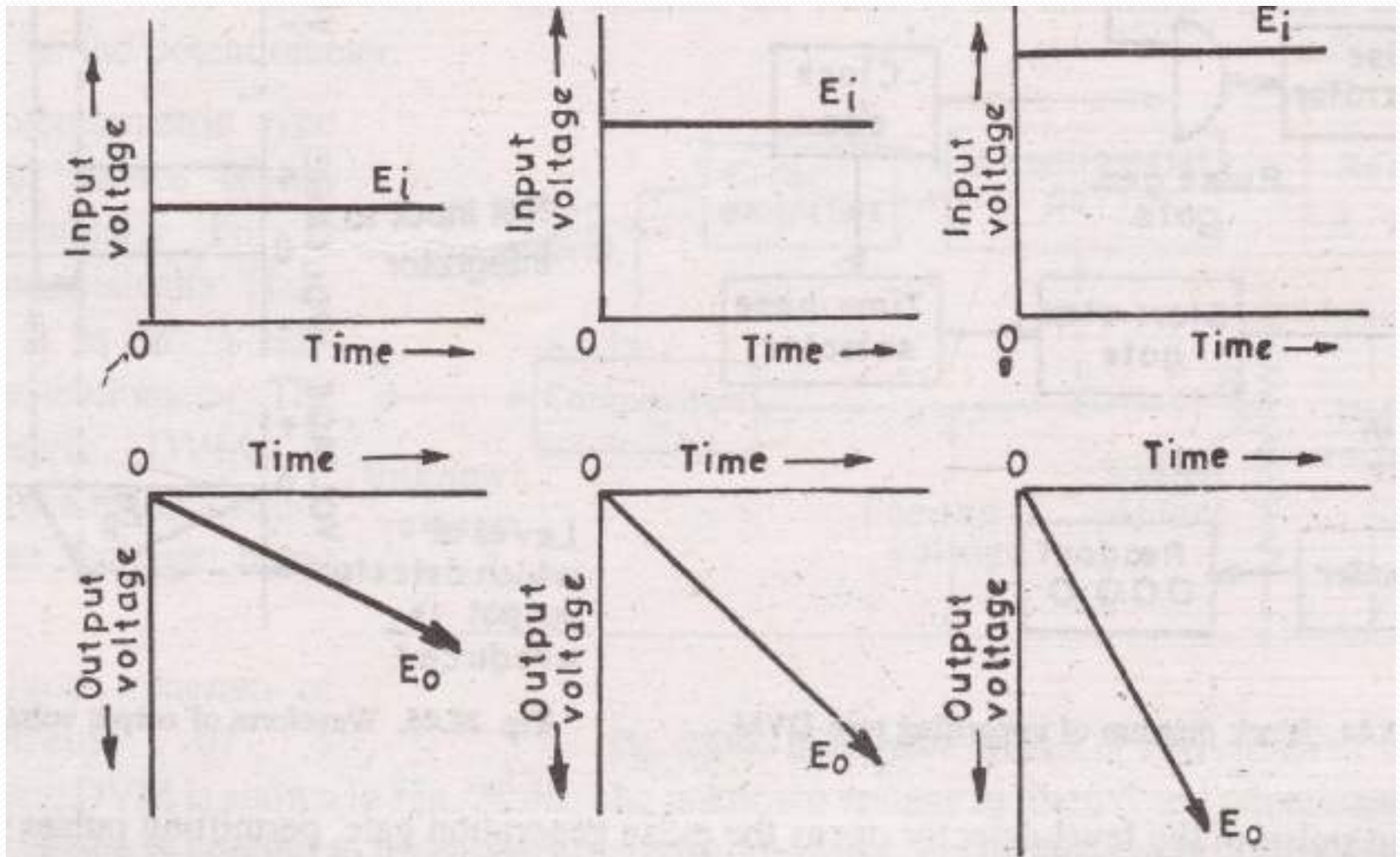
Ramp type DVM



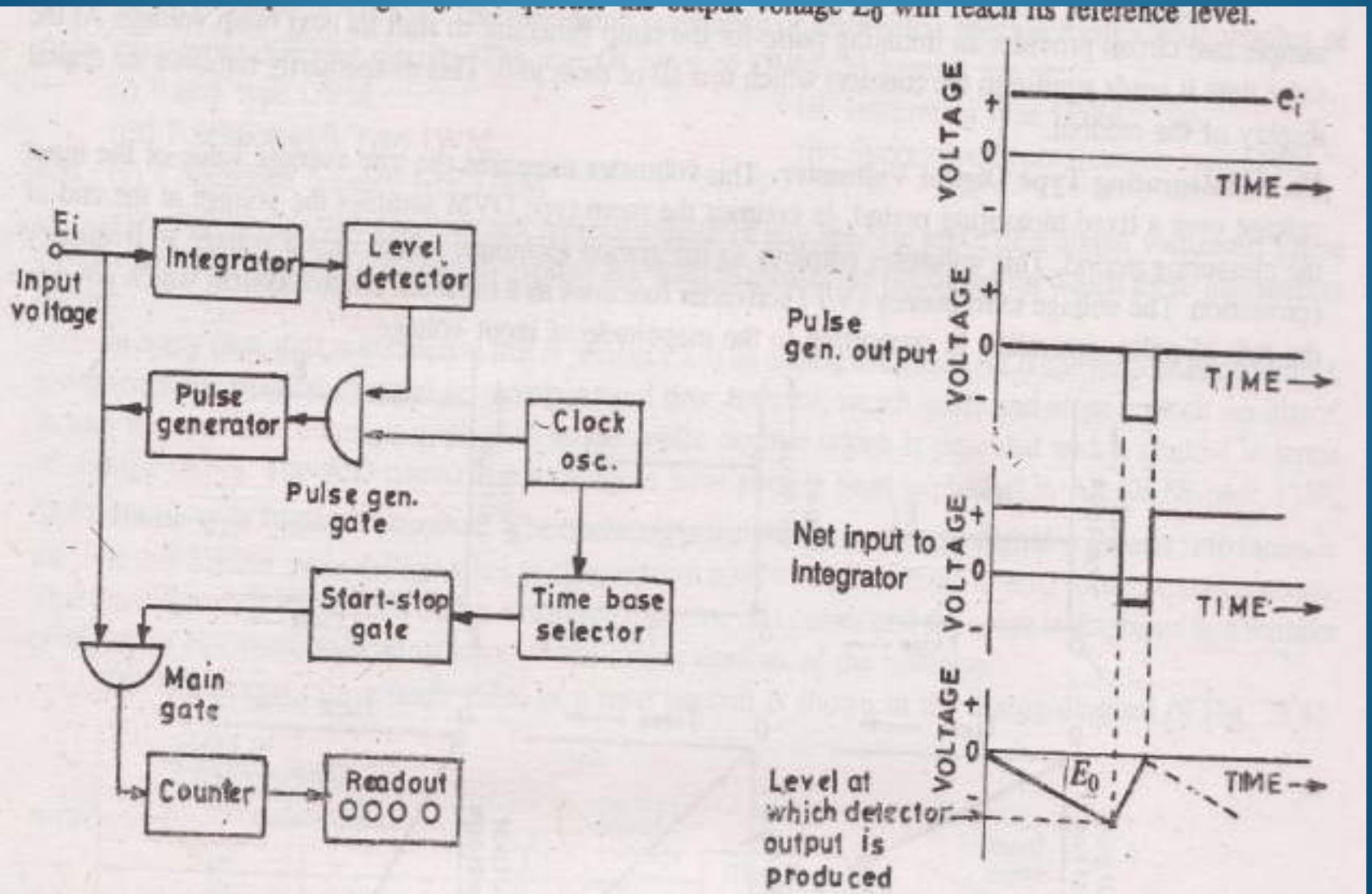
Integrating type DVM

- A constant input voltage is integrated and the slope of the output ramp is proportional to the input voltage.

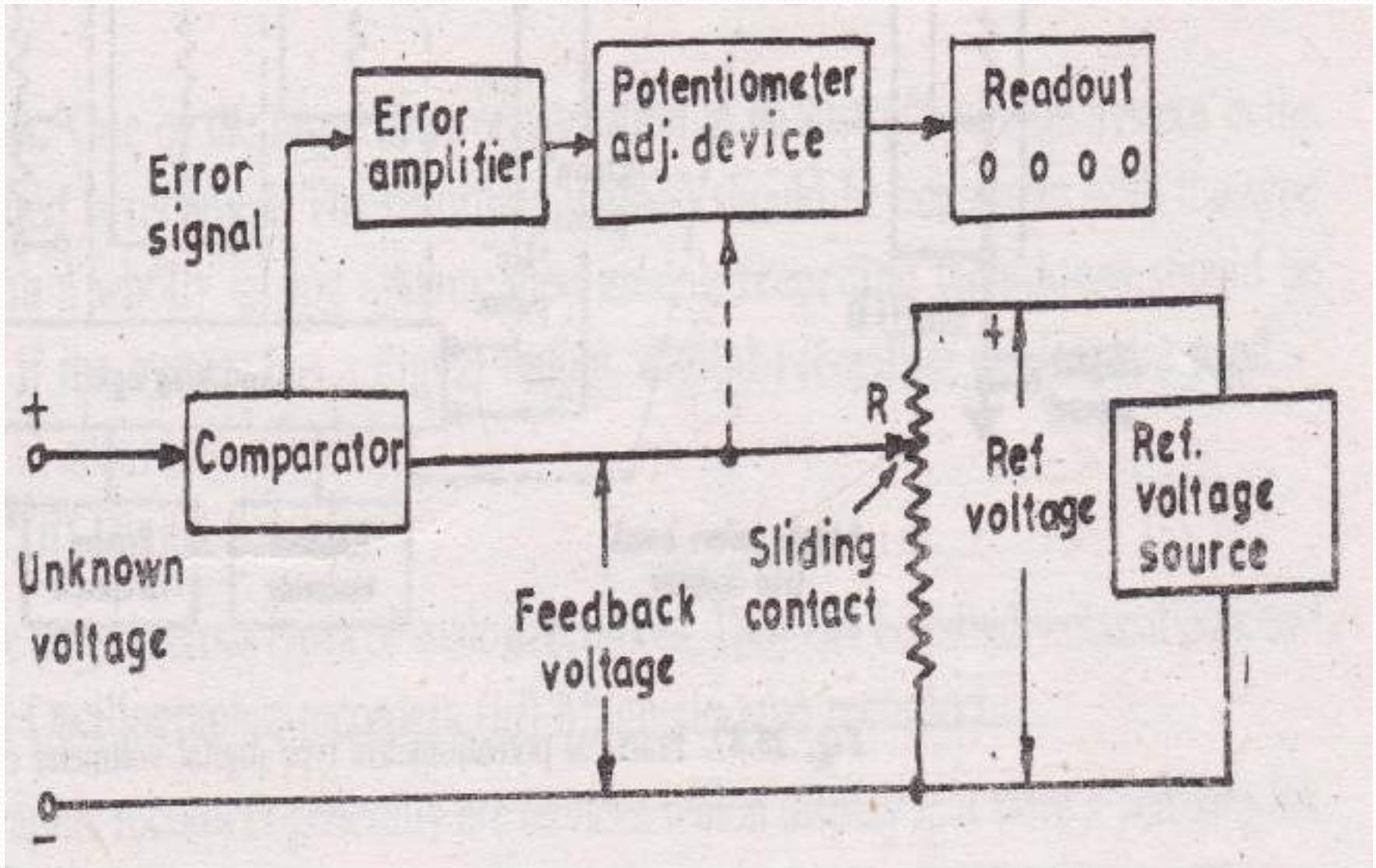
Slope Changes according to Input Voltage



Block Diagram



Potentiometric type DVM



Successive Approximation type DVM

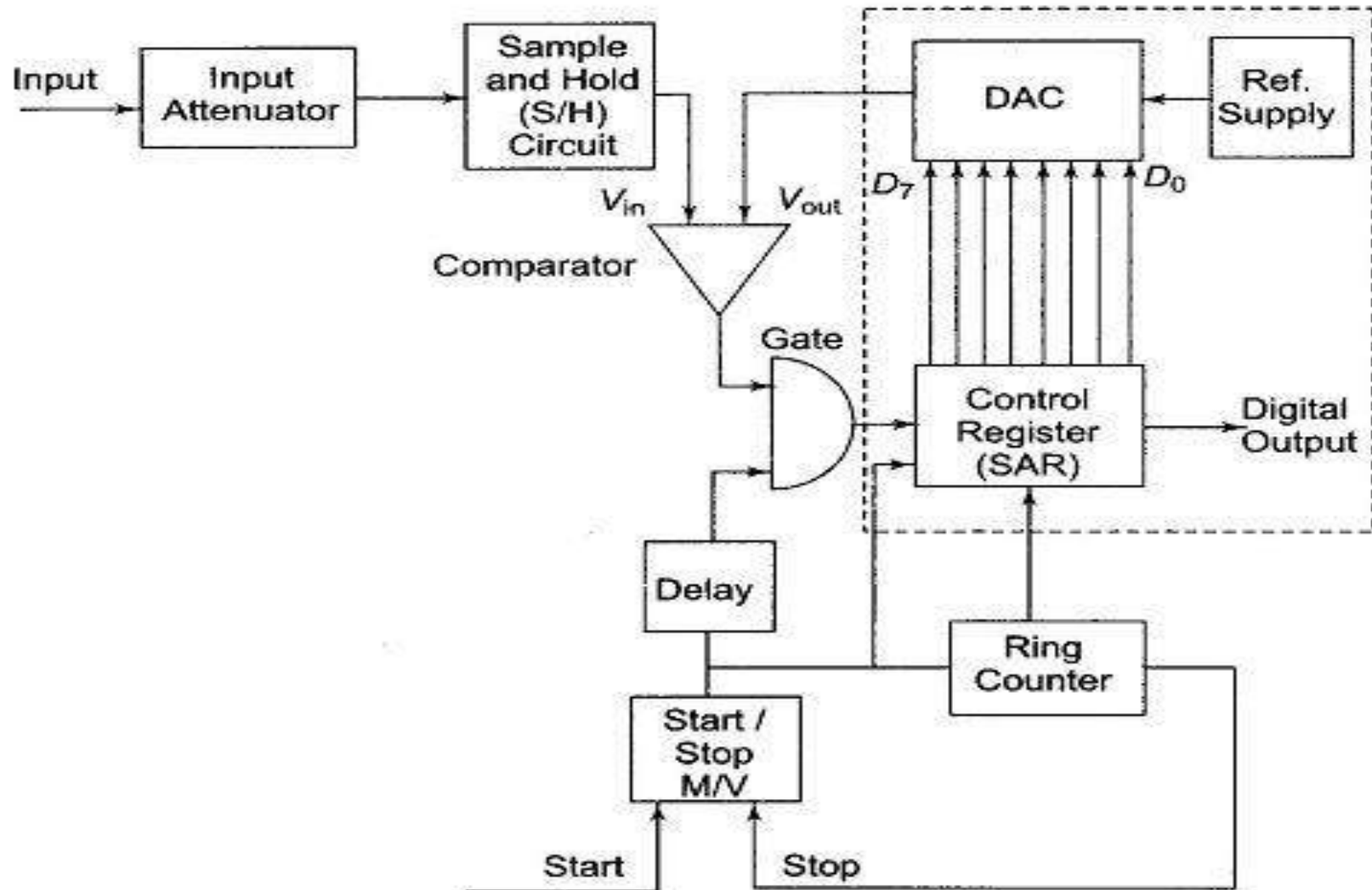


Fig. 5.10 Successive Approximation DVM

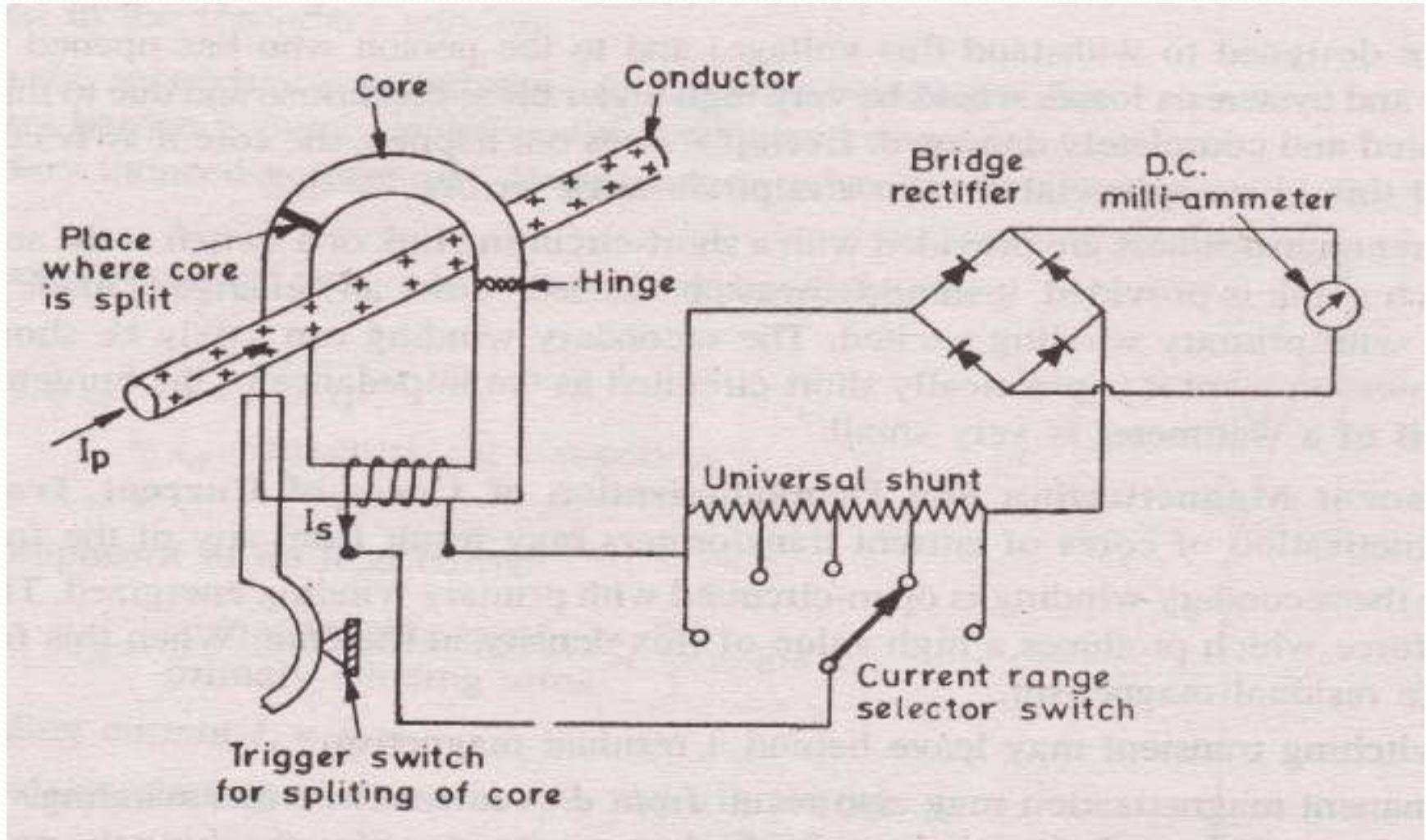
Clamp on Meter

- A clamp meter is an electrical test tool that combines a basic digital multimeter with a current sensor.
- Clamps measure current. Probes measure voltage. Having a hinged jaw integrated into an electrical meter allows technicians to clamp the jaws around a wire, cable or other conductor at any point in an electrical system, then measure current in that circuit without disconnecting/ de-energizing it.

Clip-on Meter



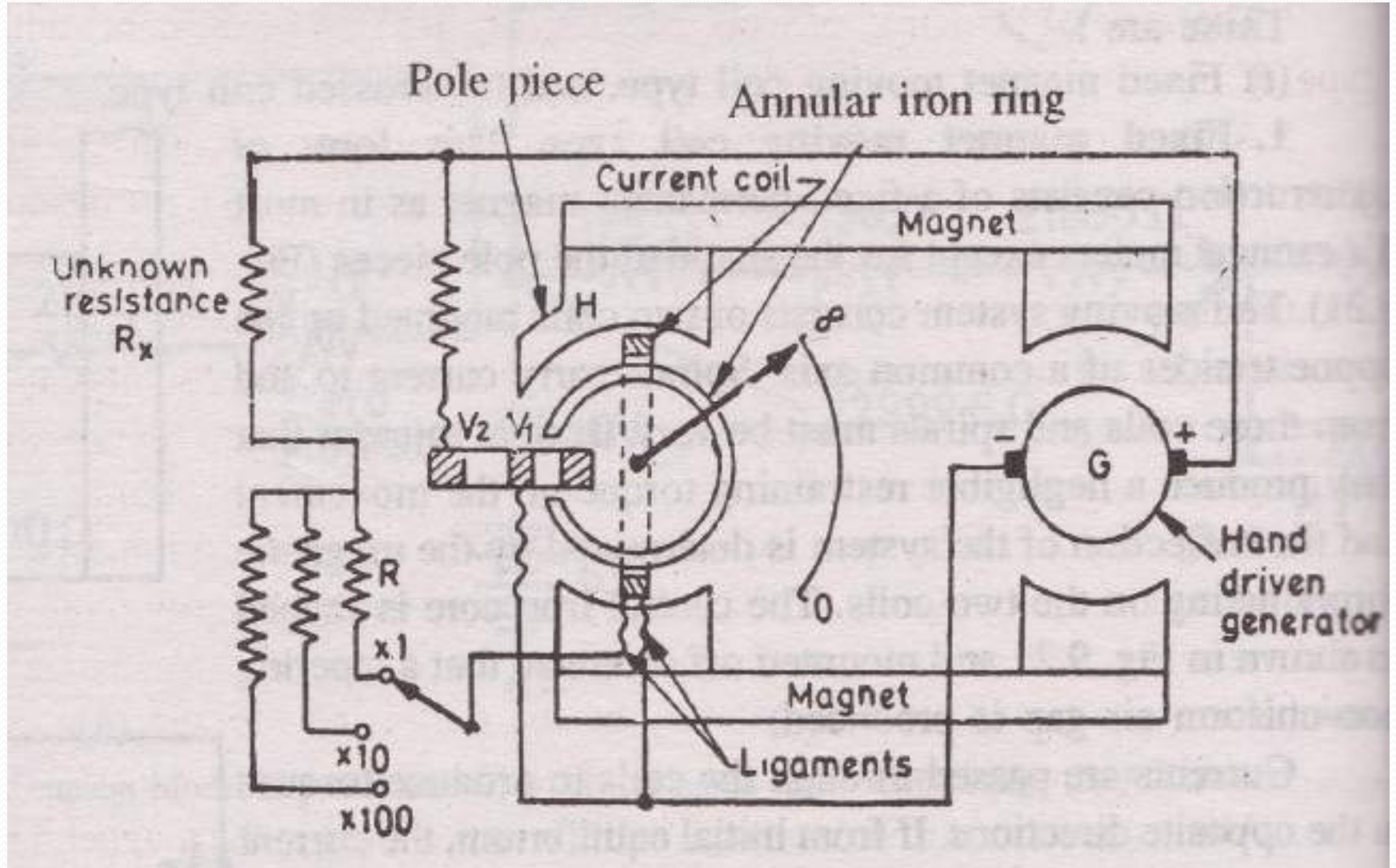
Block Diagram



Megger

- The Megger is the instrument used for measuring the resistance of the insulation.
- It works on the principle of comparison, i.e., the resistance of the insulation is compared with the known value of resistance.
- If the resistance of the insulation is high, the pointer of the moving coil deflects towards the infinity, and if it is low, then the pointer indicates zero resistance.
- The accuracy of the Megger is high as compared to other instruments.

Block Diagram



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- Thank you!