Instrumentos de Medida

- Osciloscópio analógico
- Analisador de espectro
- Frequencímetro

Condicionamento de Sinais

- OPAMP
- Multiplexação analógica
- Demodulador Síncrono
- Filtros

Instrumentos de Medida

Dispositivos analógicos de medição de corrente elétrica

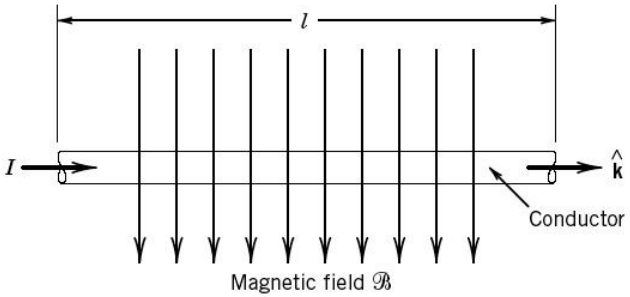


Figure 6.1 Current-carrying conductor in a magnetic field.

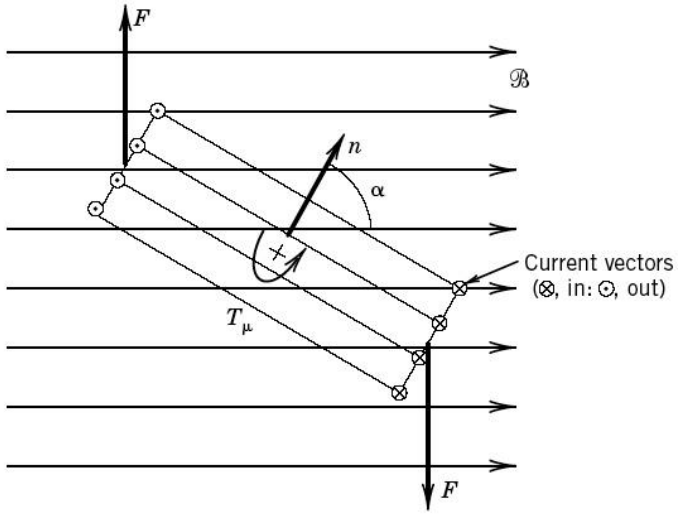


Figure 6.2 Forces and resulting torque on a current loop in a magnetic field.

Instrumentos de Medida

Dispositivos analógicos de medição de corrente elétrica

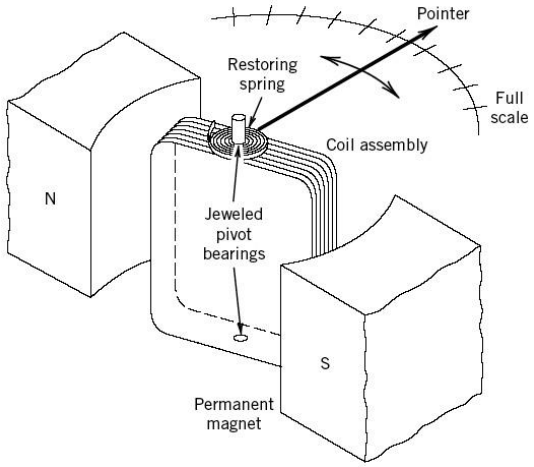


Figure 6.3 Basic D'Arsonval meter movement.

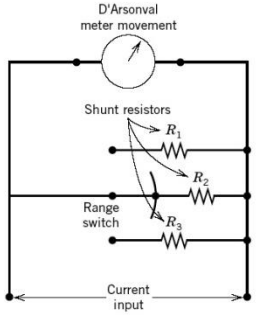


Figure 6.4 Simple multirange ammeter (with make-before-break selector switch). Shunt resistors determine meter range.

Dispositivos analógicos de medição de tensão elétrica

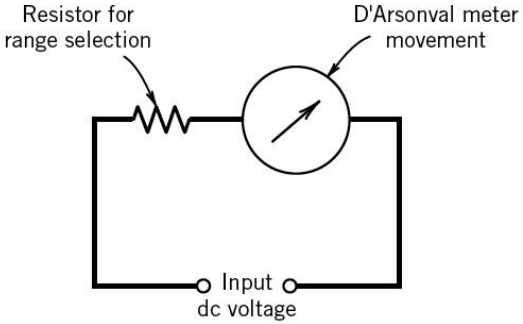


Figure 6.6 A dc voltmeter circuit.

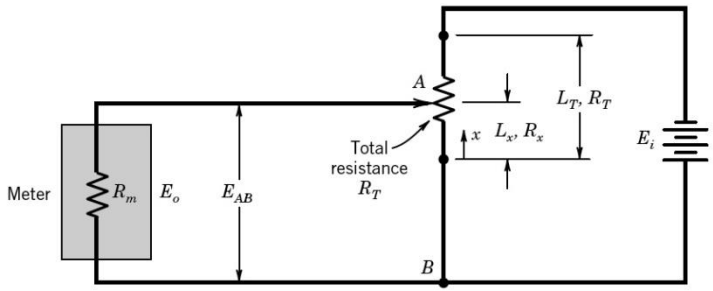
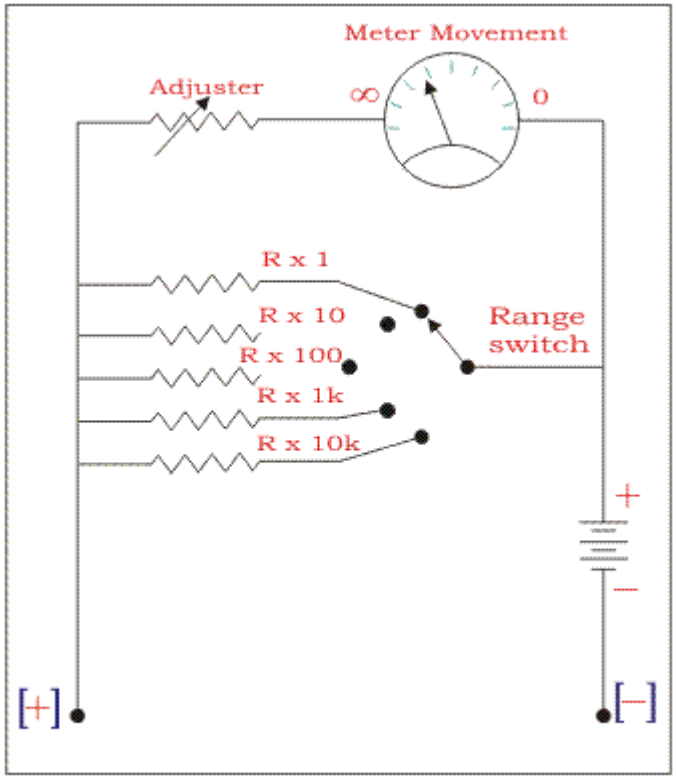


Figure 6.9 Voltage divider circuit.

Instrumentos de Medida

Medição de Resistência



Multirange ohmmeter

Manuseio do instrumento
Ligação a jusante e a montante
Método de quatro fios

Instrumentos de Medida

Dispositivos analógicos de medição de resistência elétrica

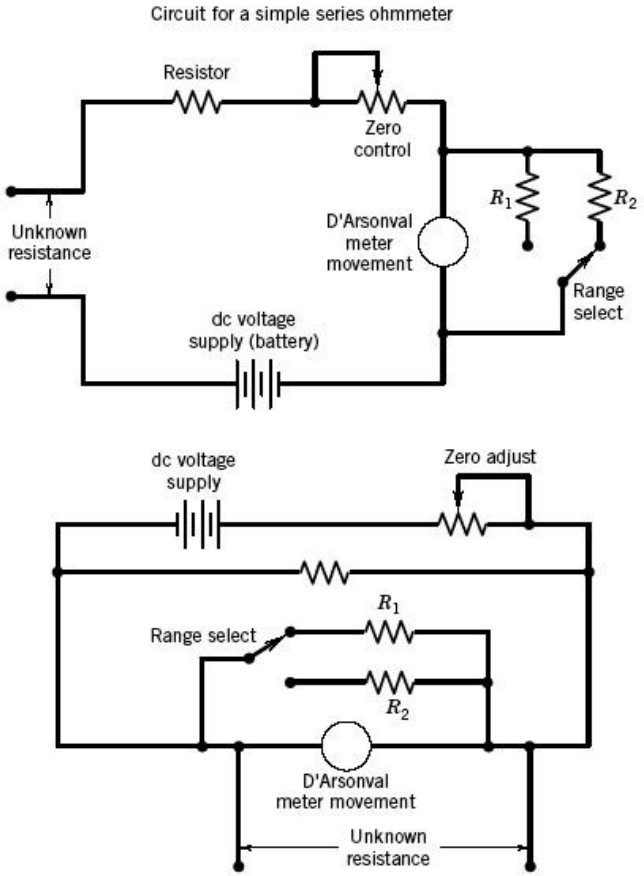


Figure 6.12 Multirange ohmmeter circuits.

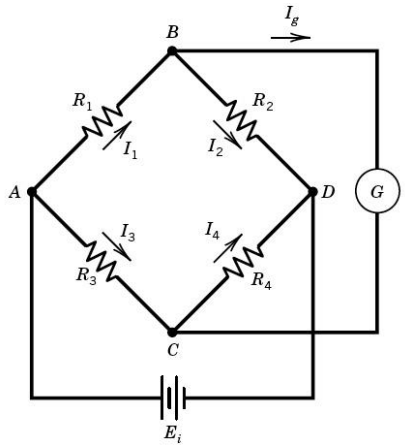
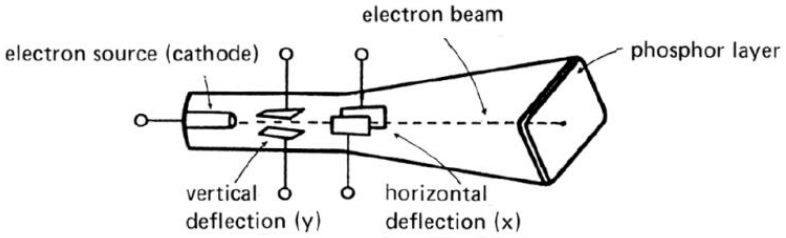


Figure 6.13 Basic Wheatstone bridge circuit (G, galvanometer).

Instrumentos de Medida

Dispositivos analógicos de medição de tensão elétrica

Osciloscópio



(a)

Entrada de disparo - trigger

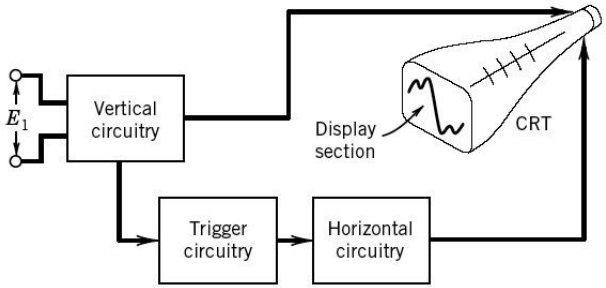
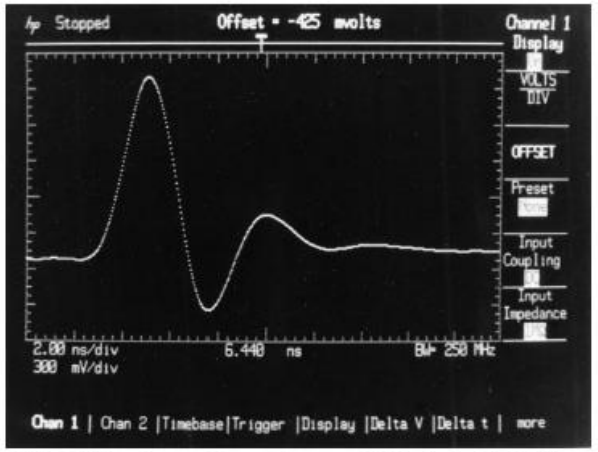


Figure 6.7 Schematic of basic cathod-ray tube oscilloscope.

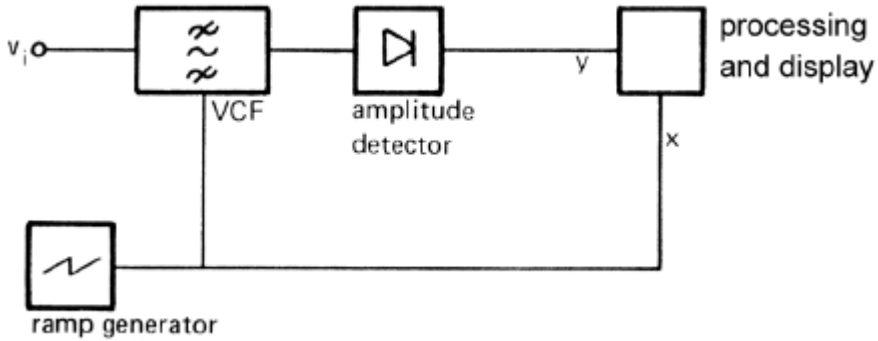


(b)

Figure 6.8 (*a*) Digital oscilloscope. (Photograph courtesy of Tektronix, Inc.) (*b*) Oscilloscope output. (Photograph courtesy of Hewlett-Packard Company.)

Instrumentos de Medida

Analisador de espectro



Medida de V, Vrms, P
Casamento de impedância
Linha de transmissão
Espectro de potência
Densidade espectral de potência

Contador, frequencímetro, cronômetro