

Unit III

Sensing and

End-of-Arm

Tooling



Chapter 7

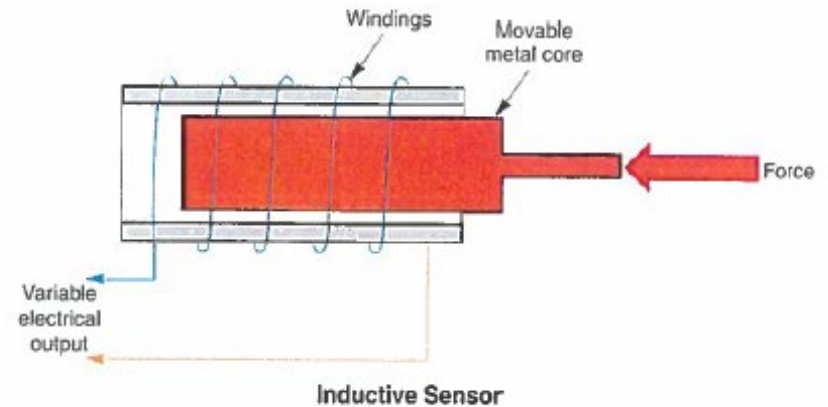
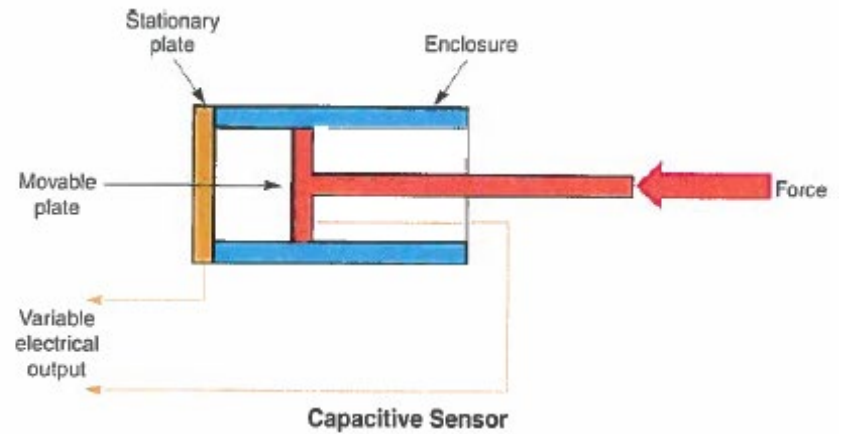
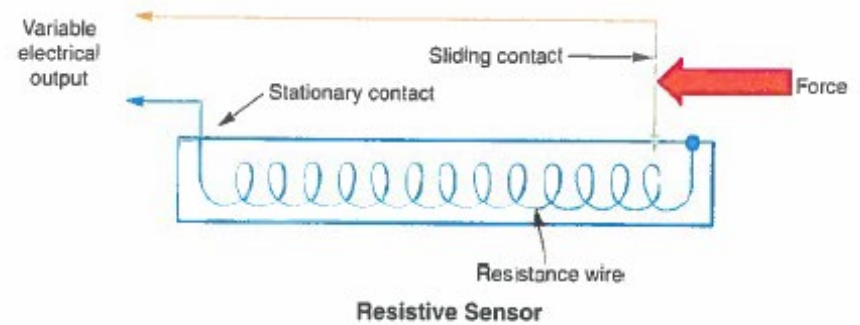
Sensors

Objectives

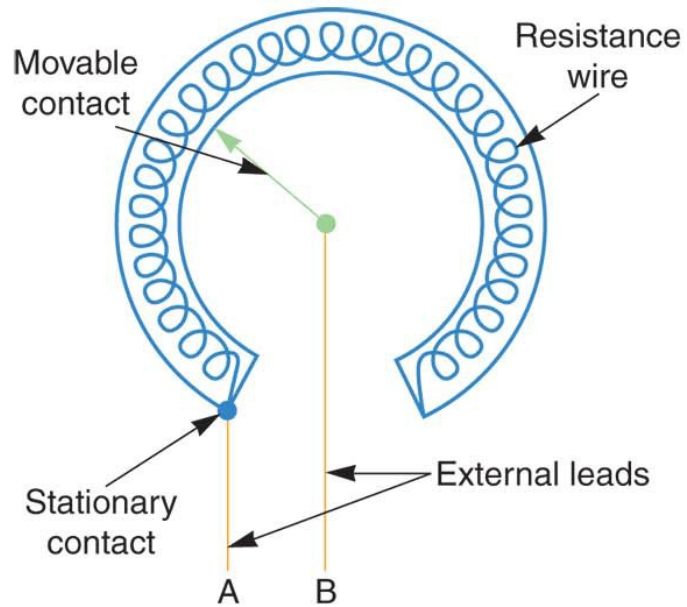
By the end of this lesson the learner should be able to:

- Explain the function of transducers in the operation of sensors
- Identify the various sensors used in an automated systems
- Describe how sensors might be integrated into an automated system

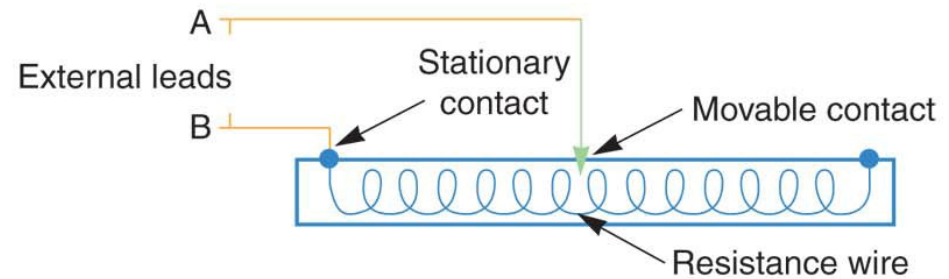
Resistive, Capacitive, & Inductive Sensors



Resistive Transducers



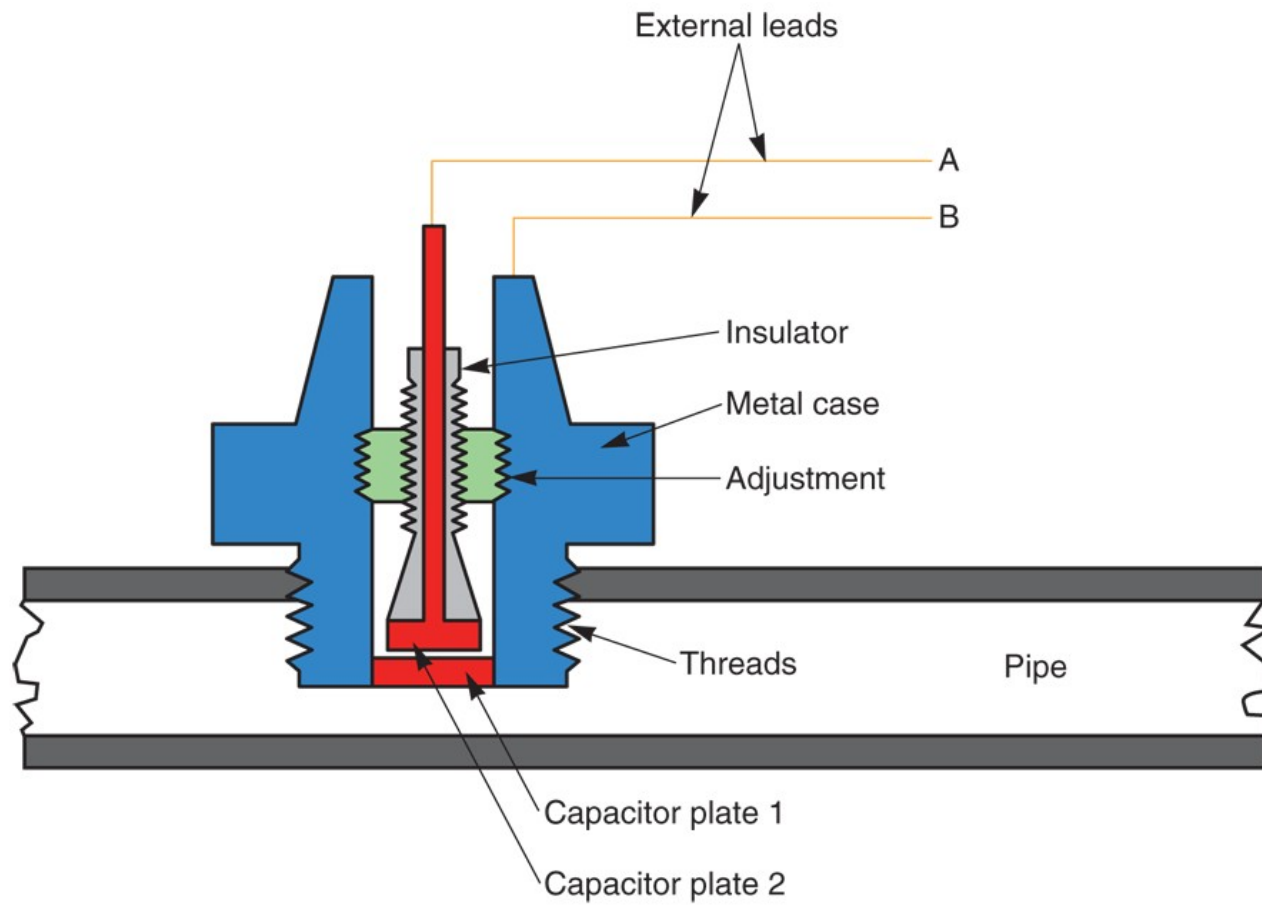
Rotary Potentiometric Transducer



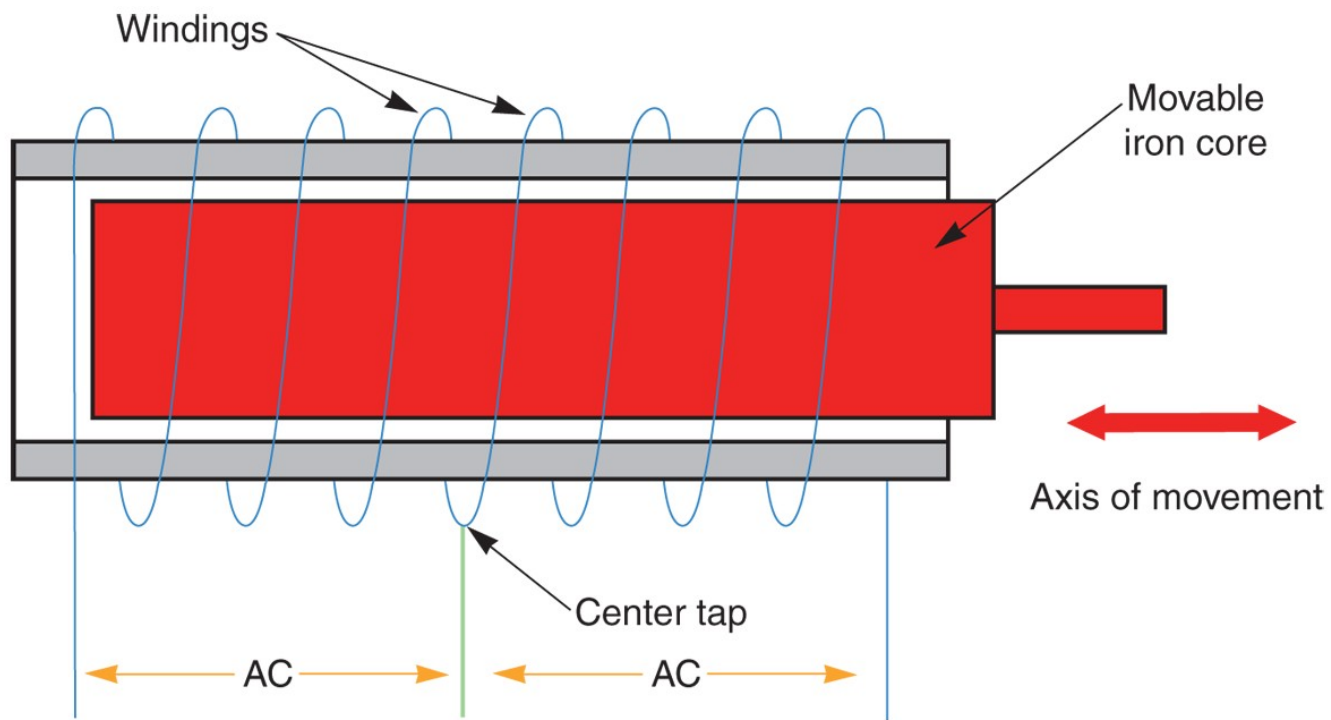
Flat Potentiometric Transducer

LS 7-1

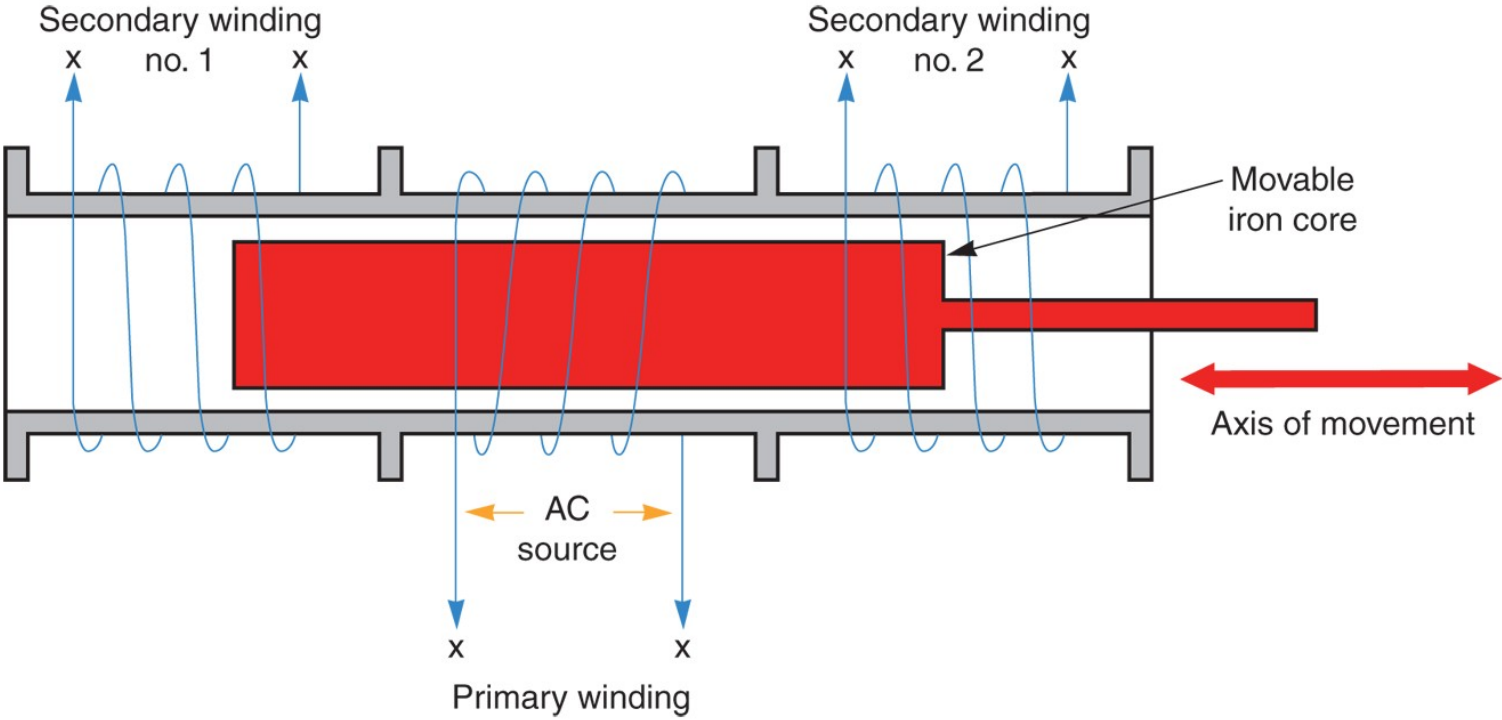
Capacitive Transducer



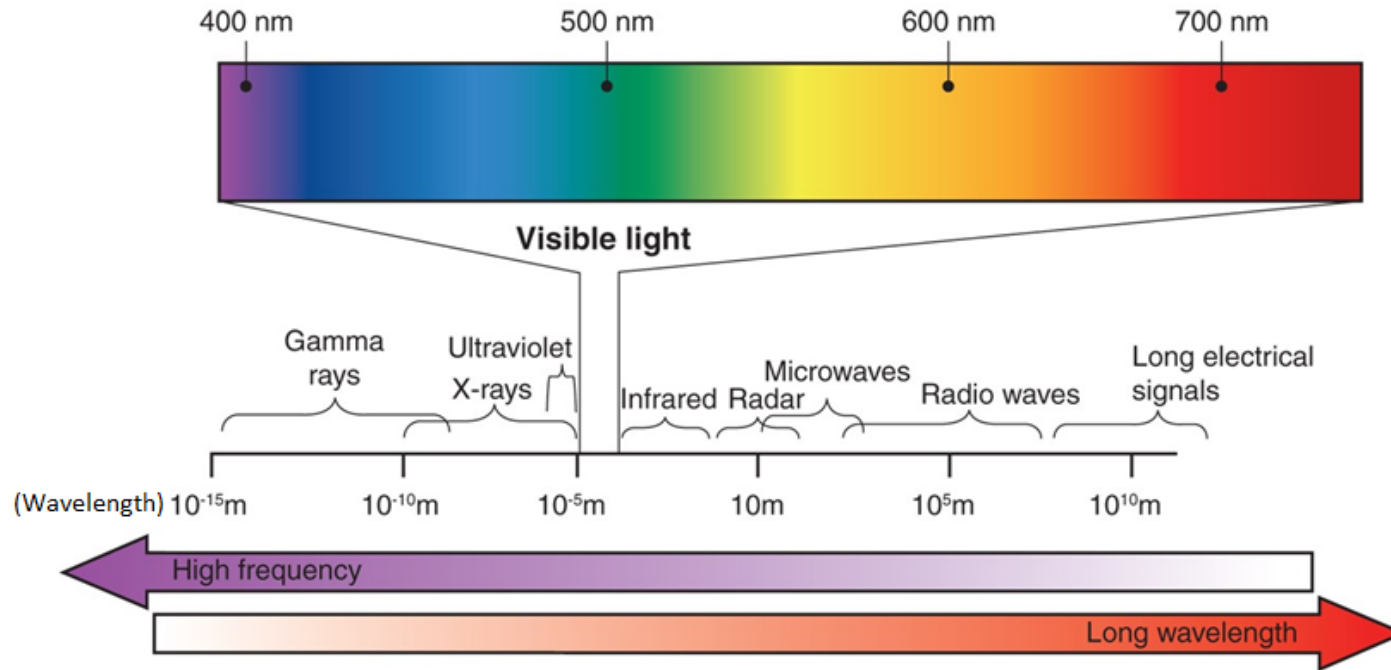
Inductive Transducer



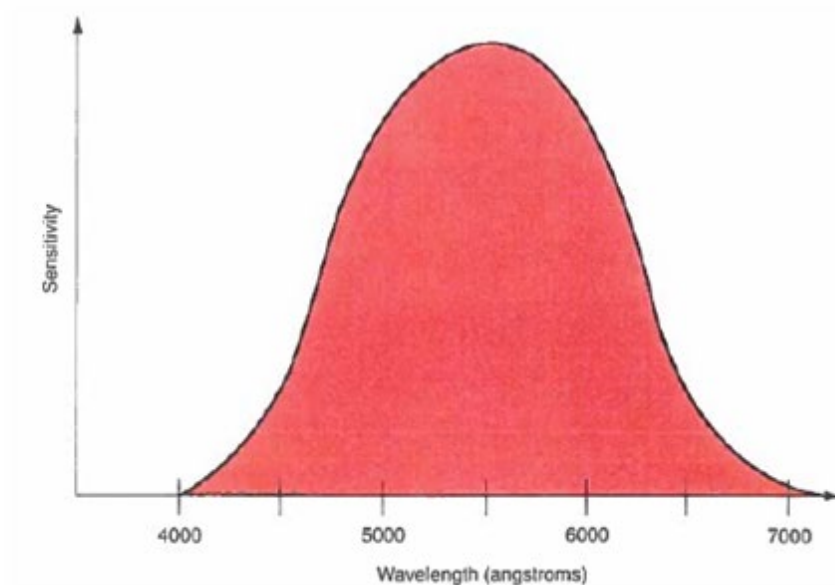
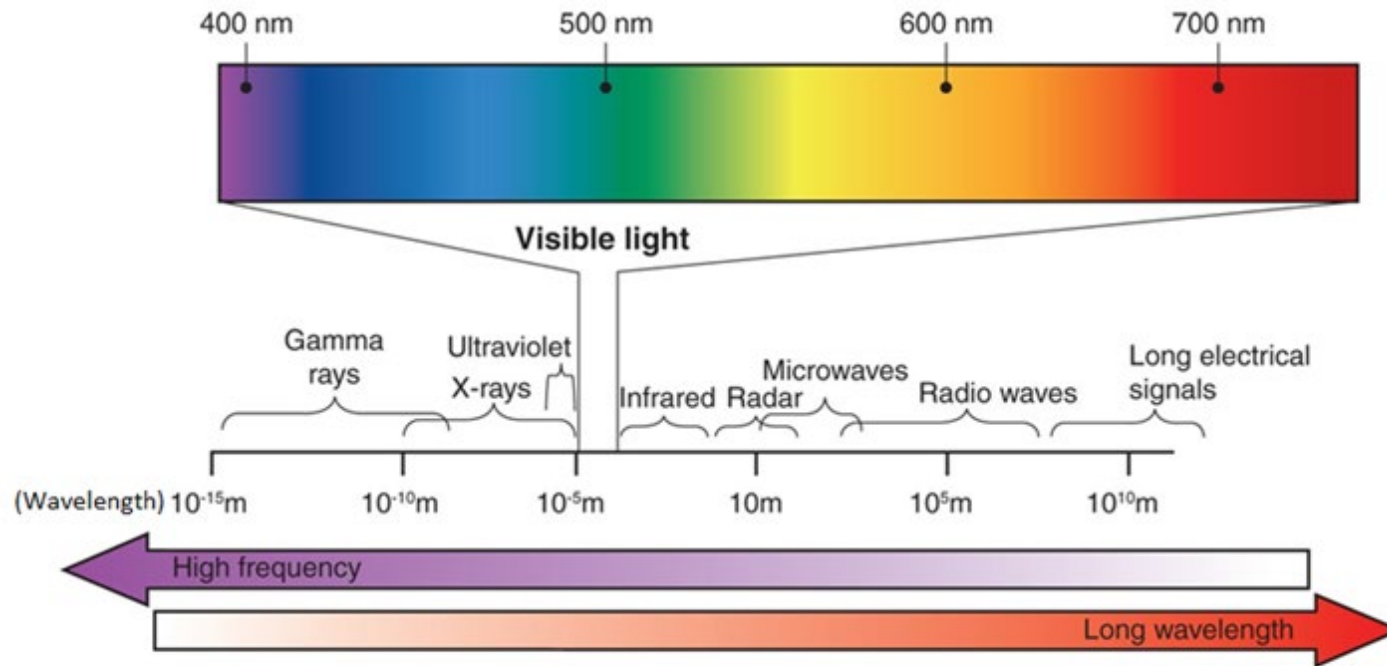
Linear Variable Differential Transformer (LVDT)



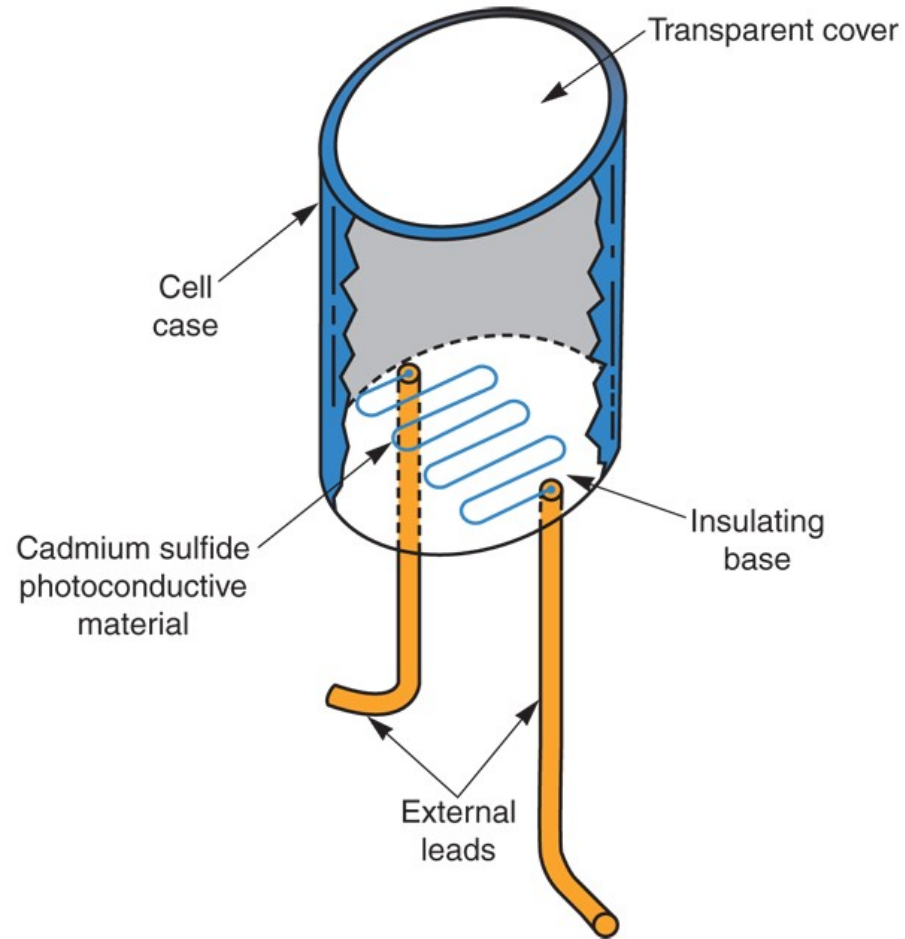
Electromagnetic Spectrum



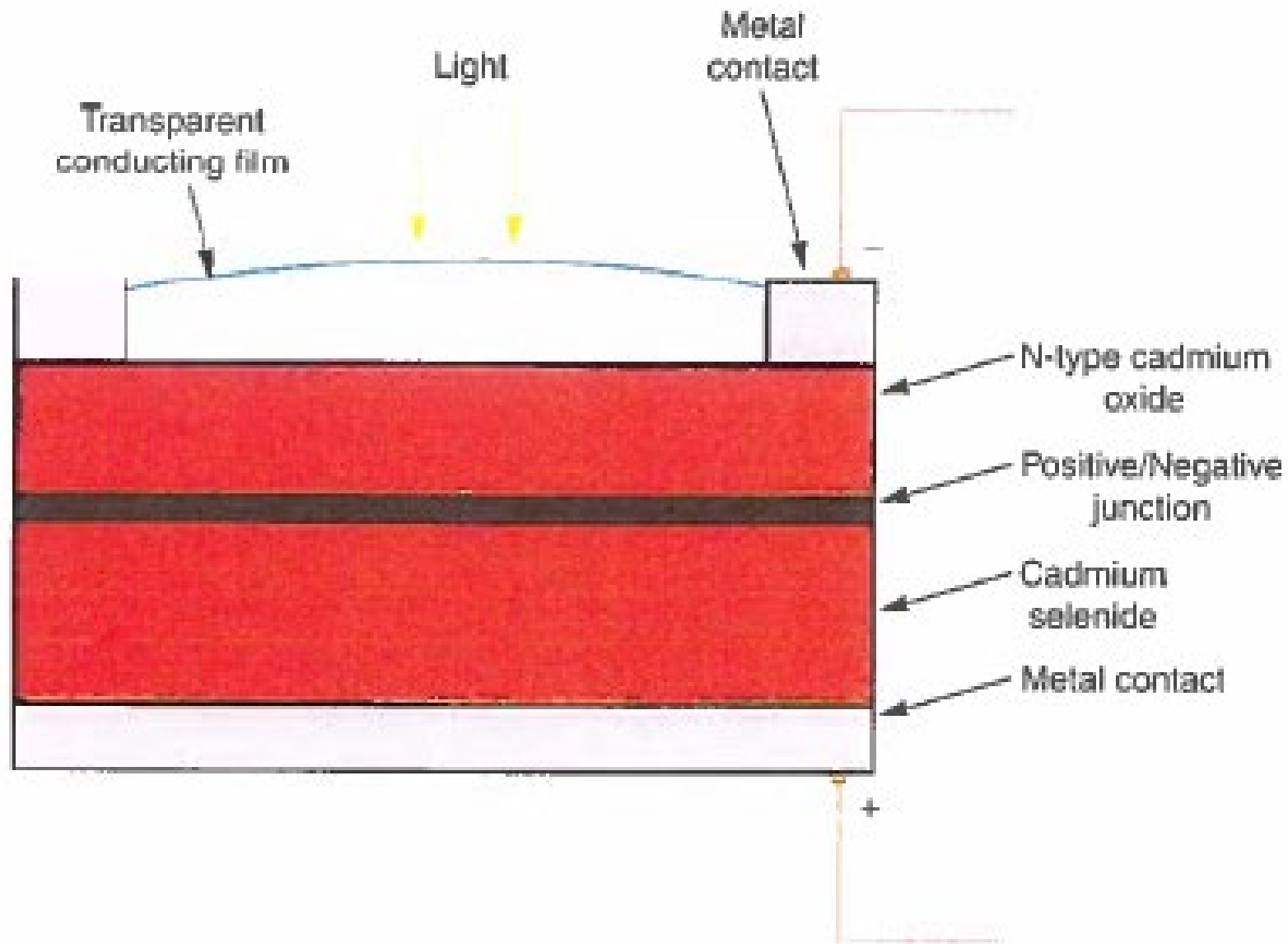
Visible Light Bands



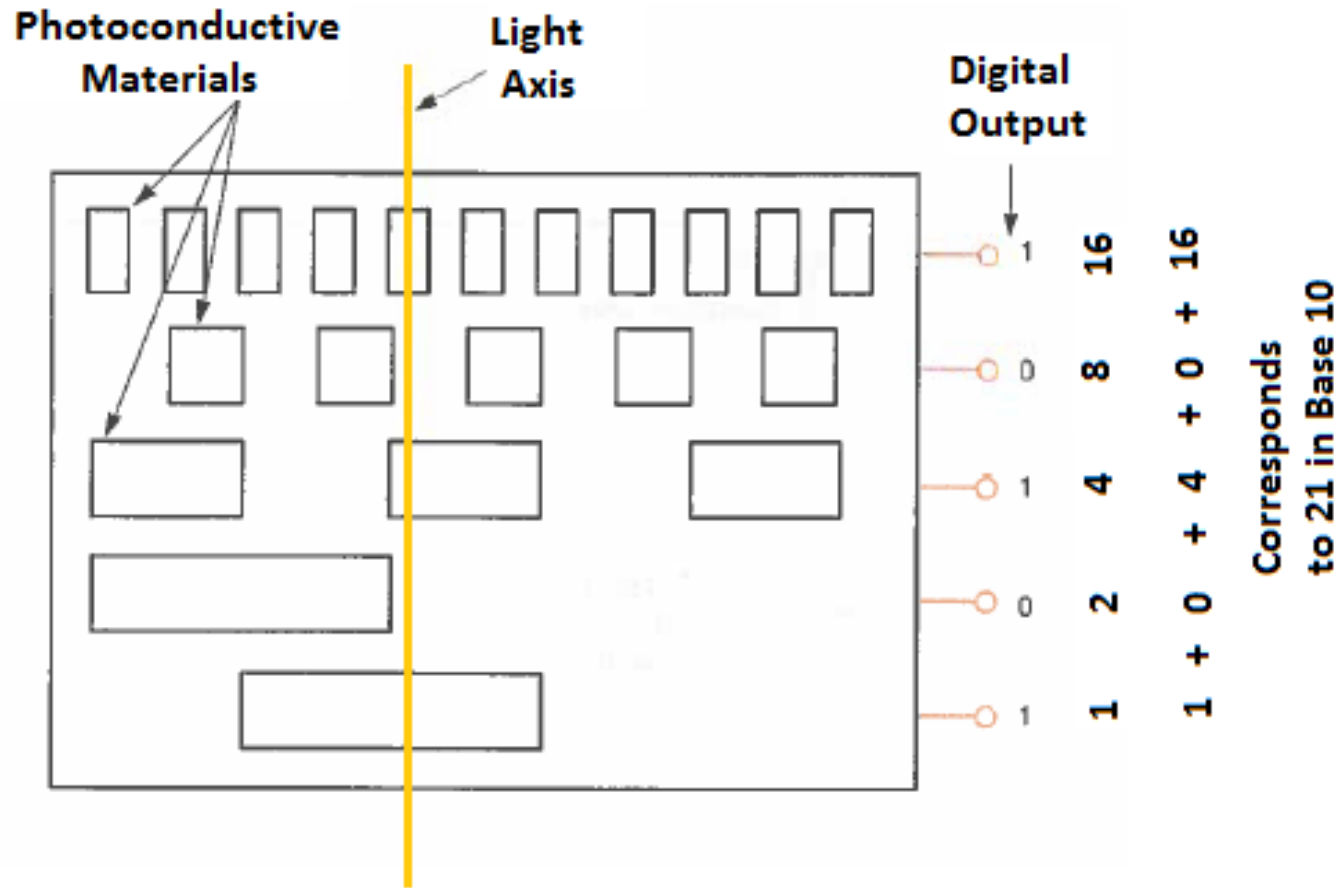
Cadmium Sulfide Cell



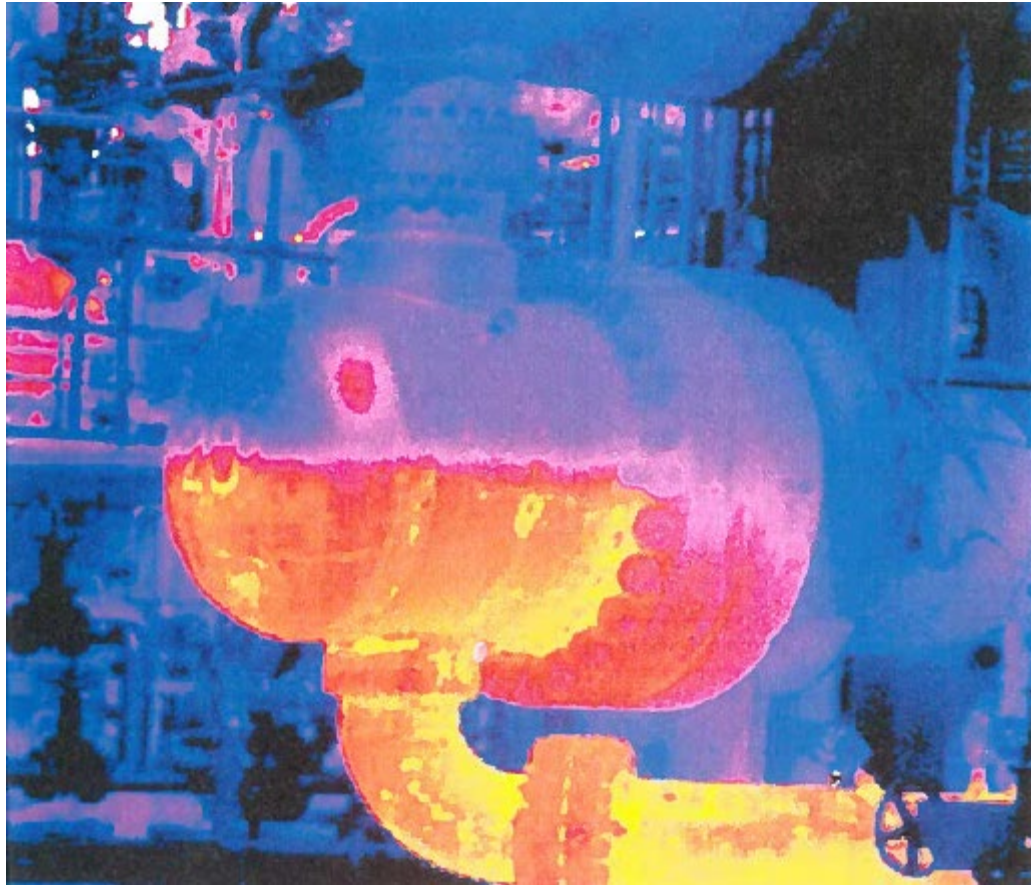
Selenium Photovoltaic Cell



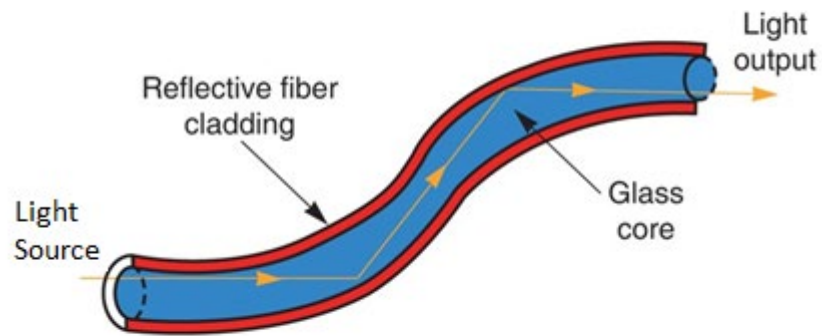
Example for use of Photoconductive Materials



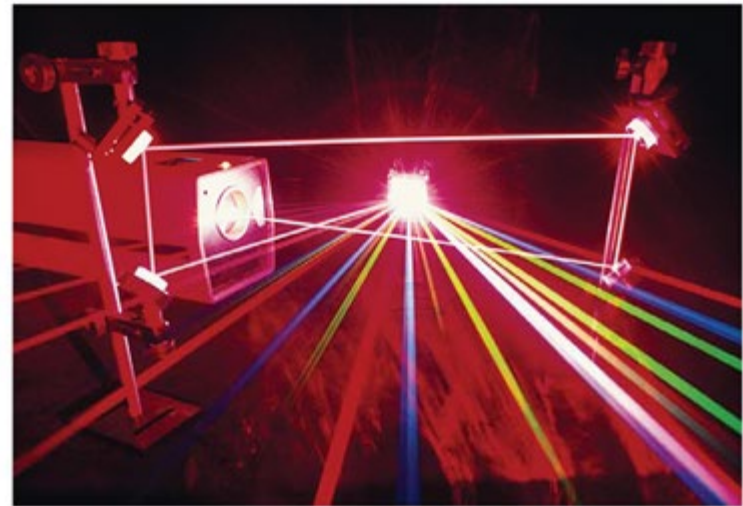
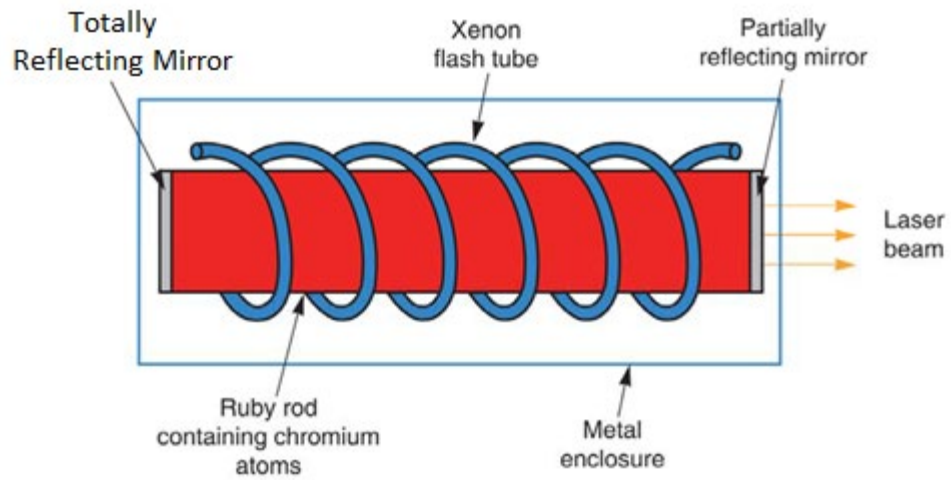
Infrared Applications



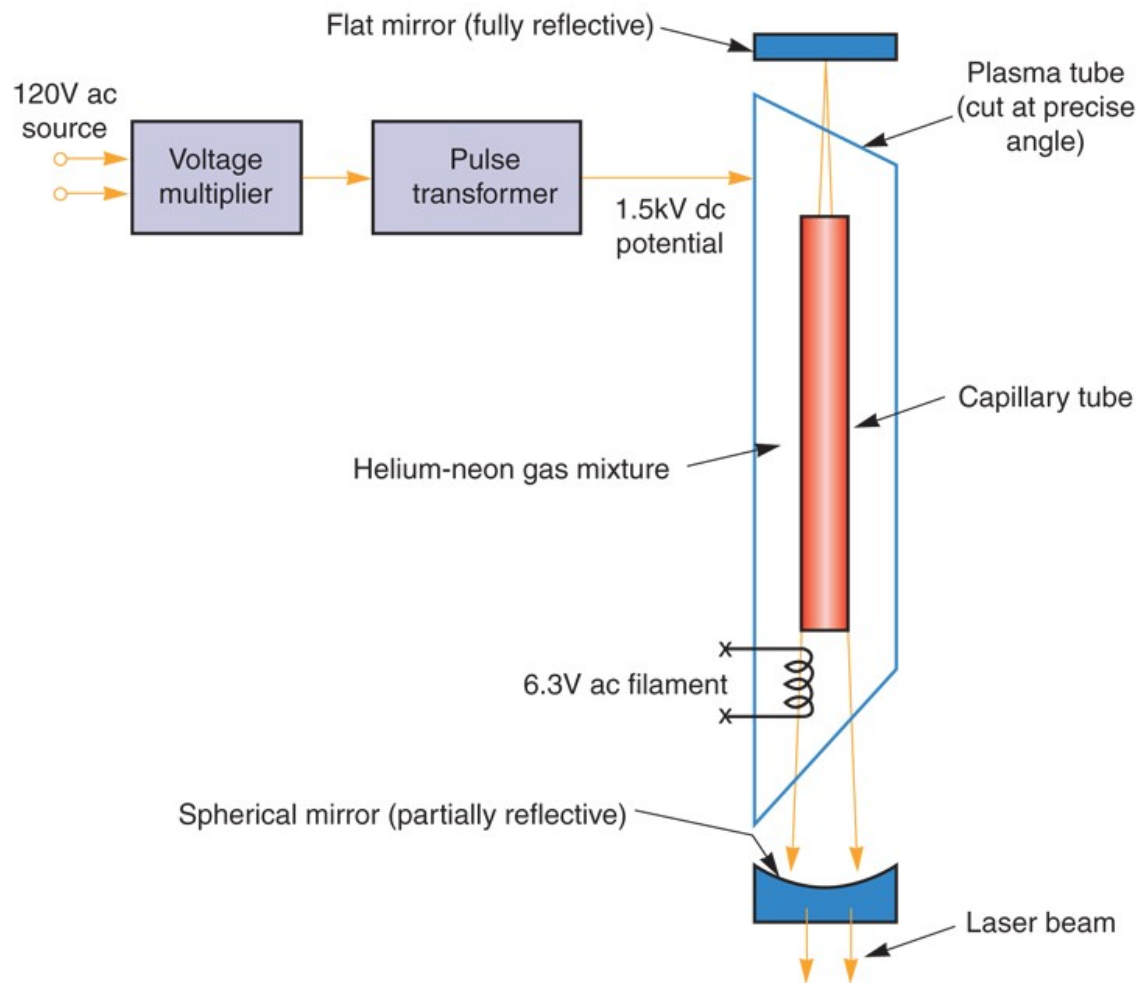
Fiber Optics



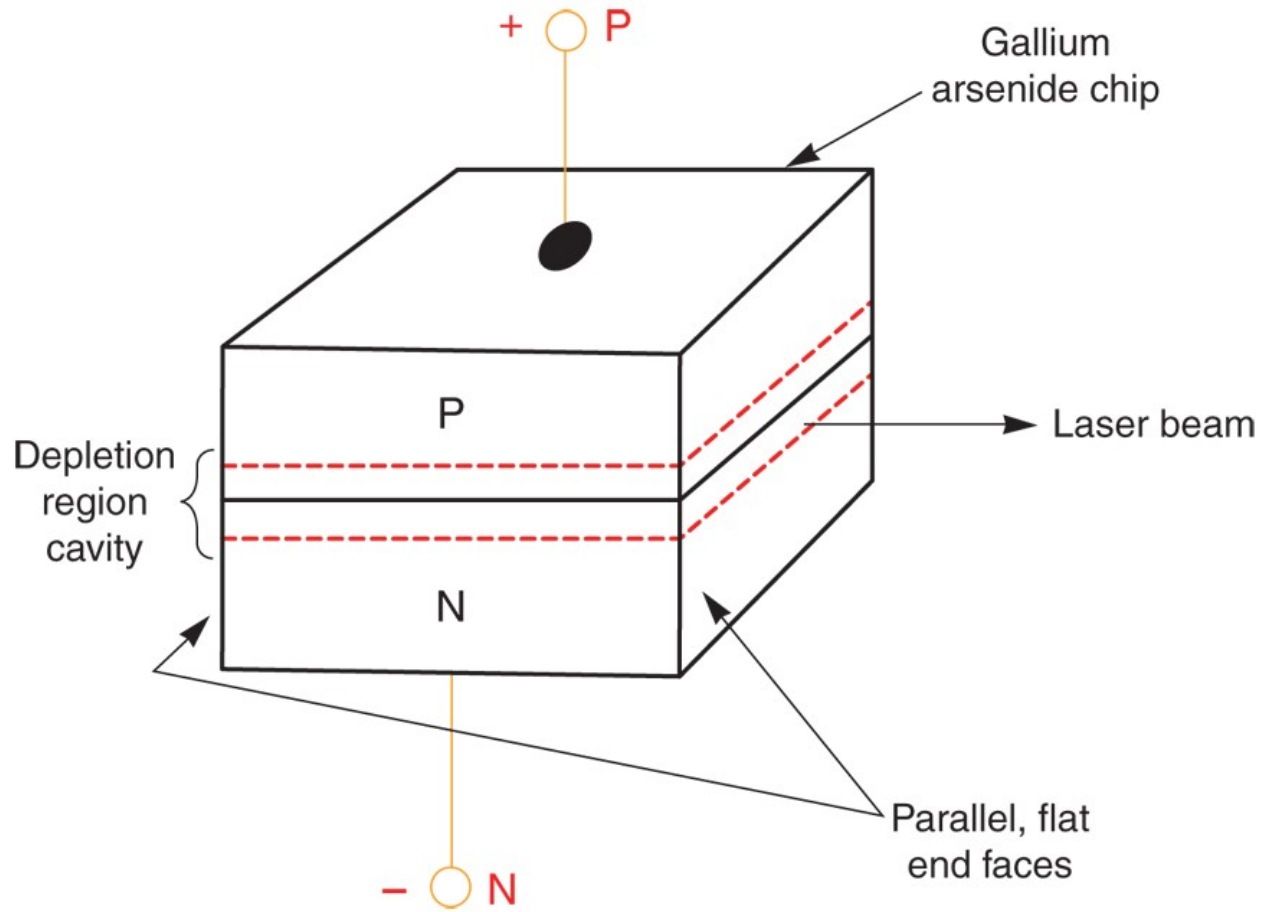
Ruby Laser



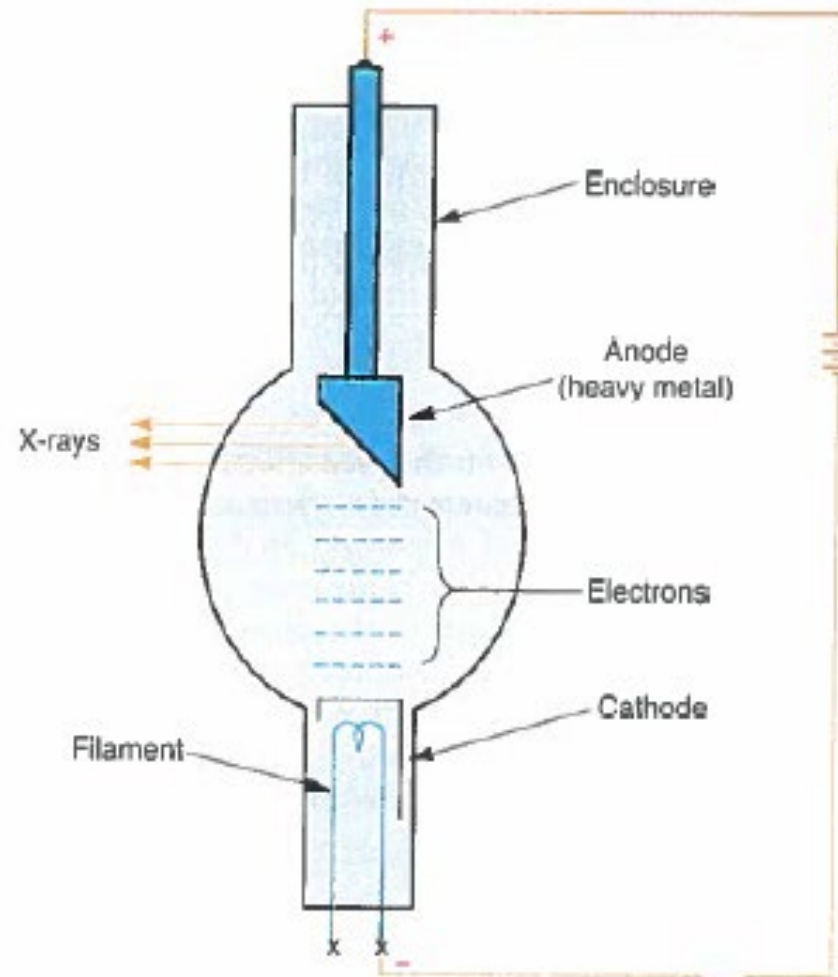
Gas Laser



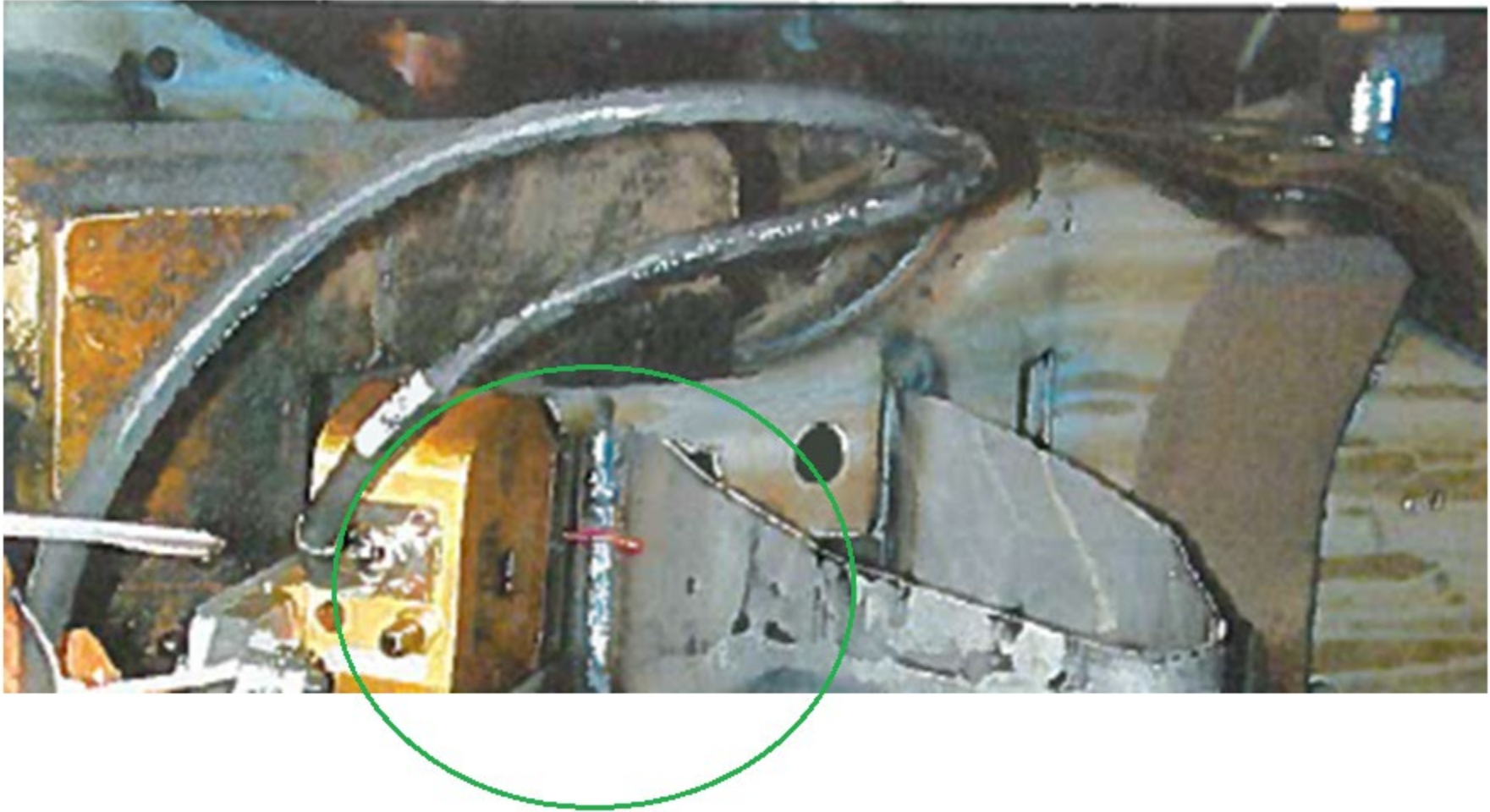
Semiconductor Laser



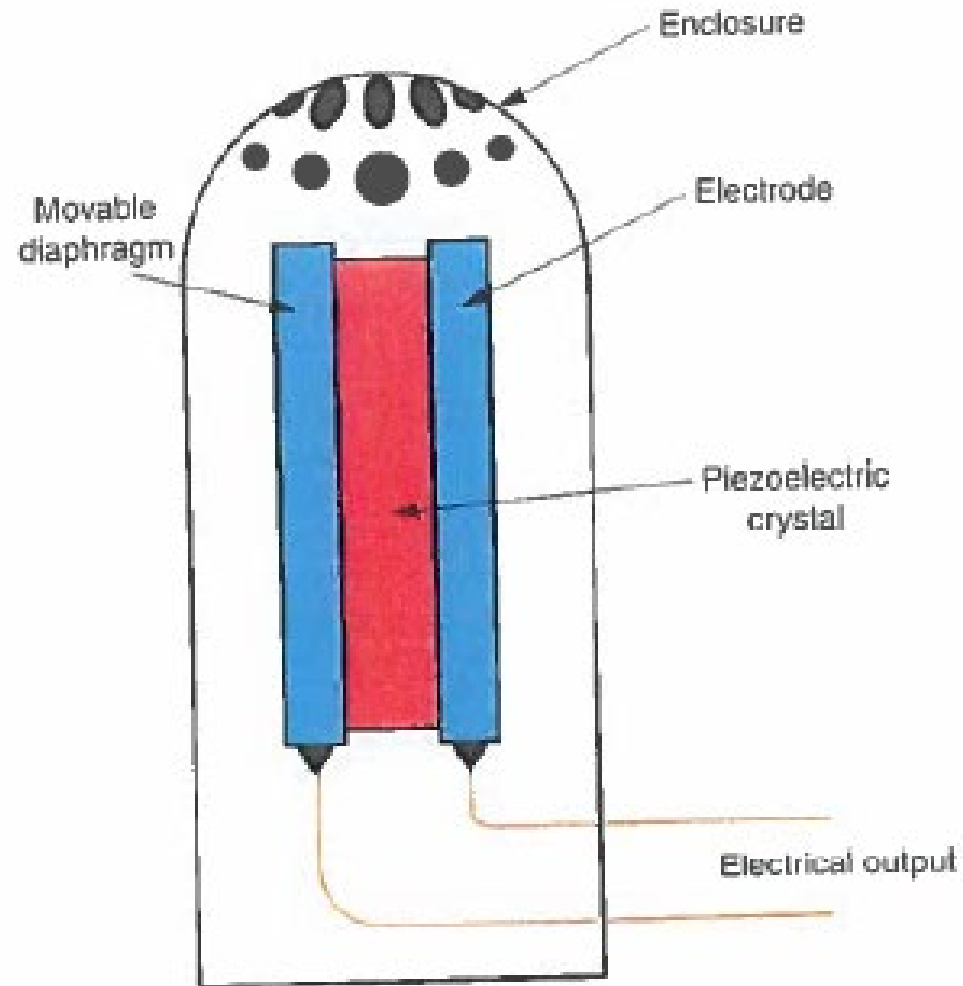
X-Ray Tube



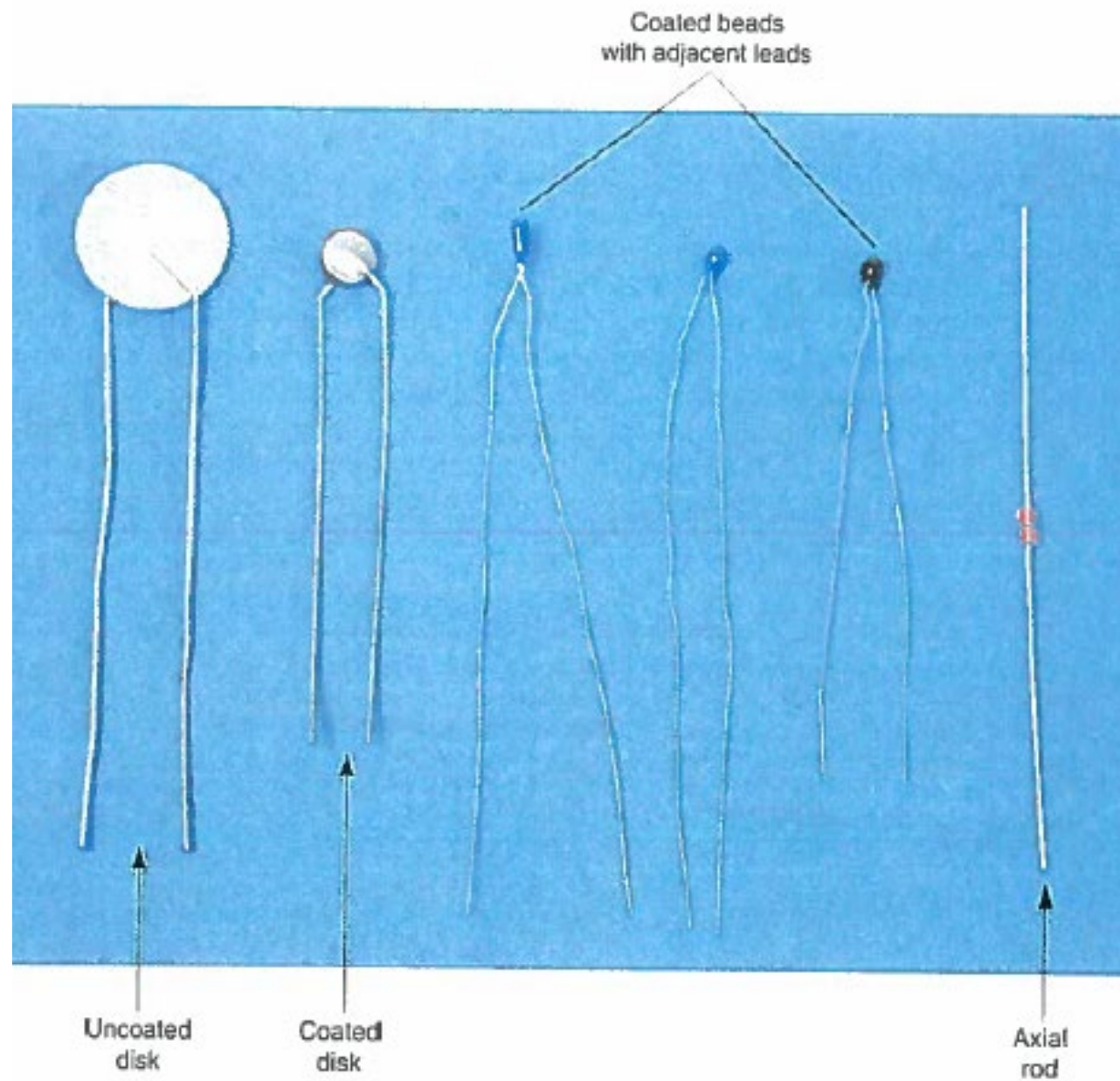
Lasers used to Examine Welds



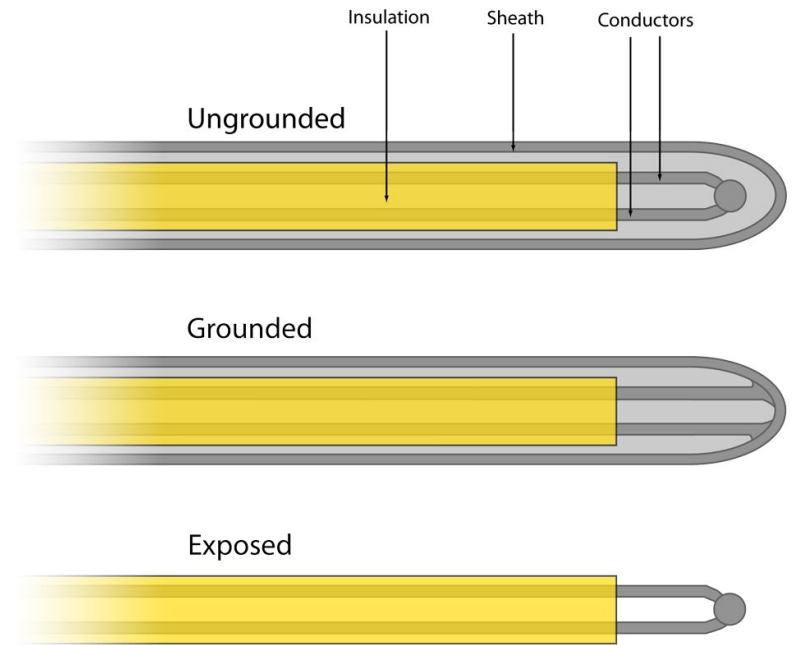
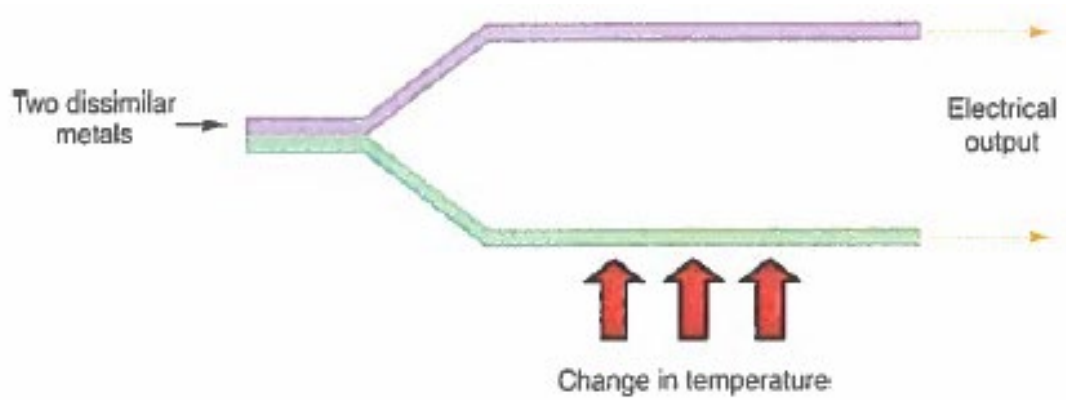
Piezoelectric Crystal Microphone



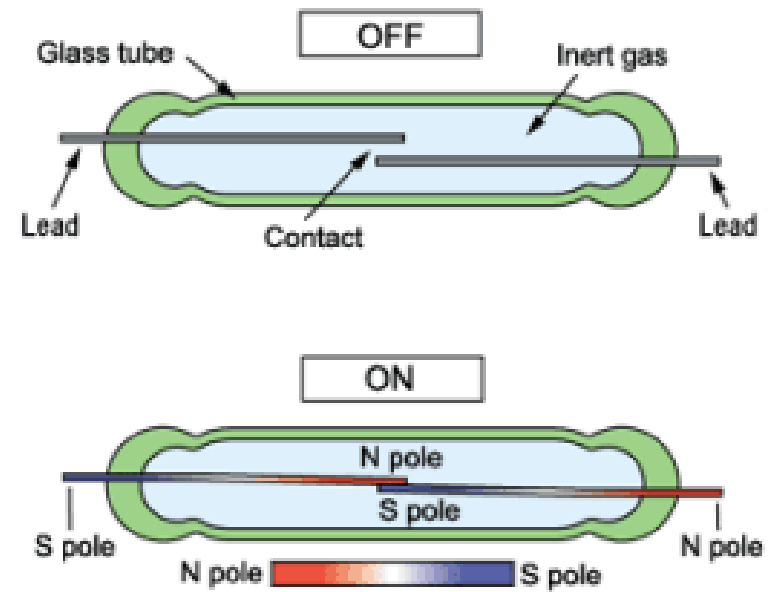
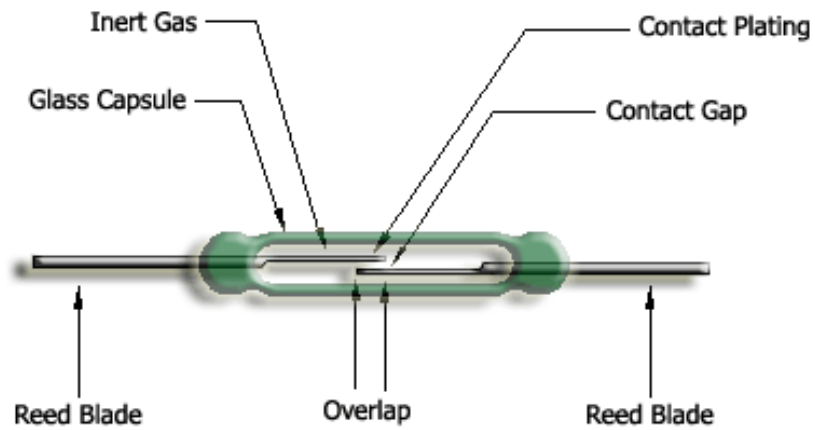
Thermistors



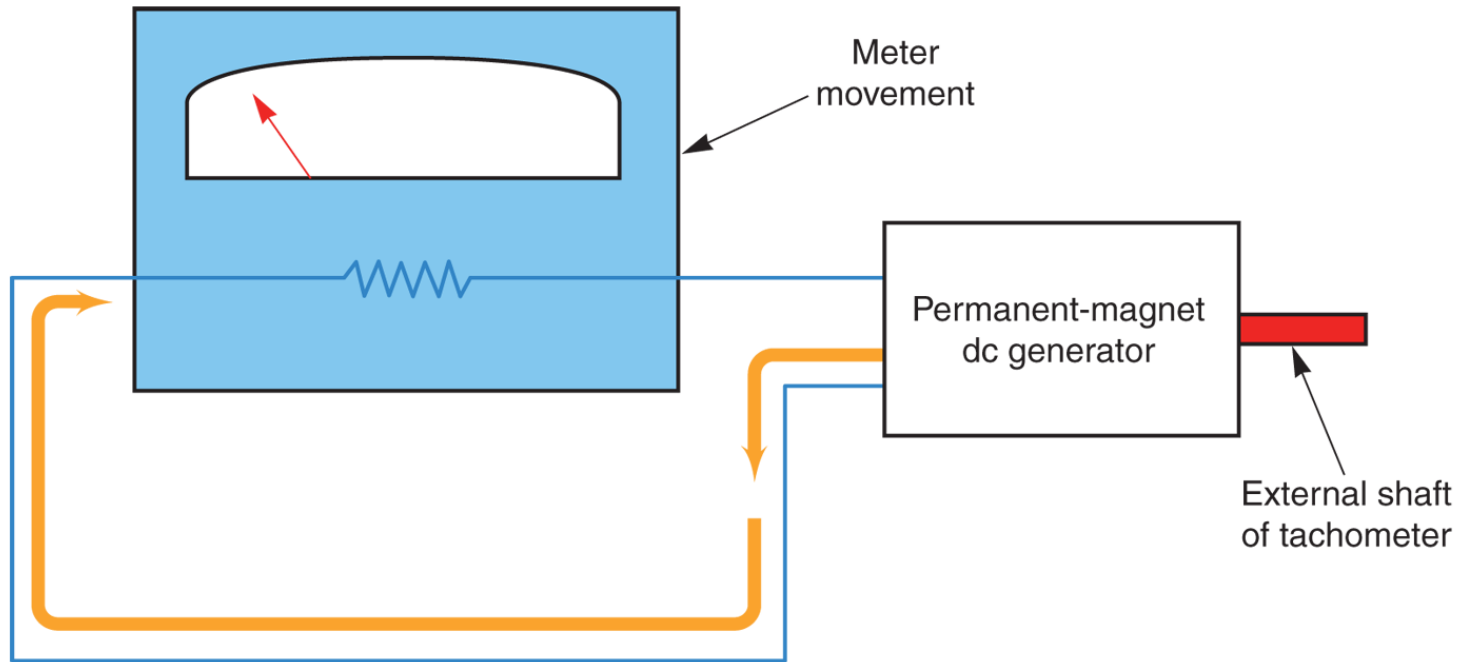
Thermocouples



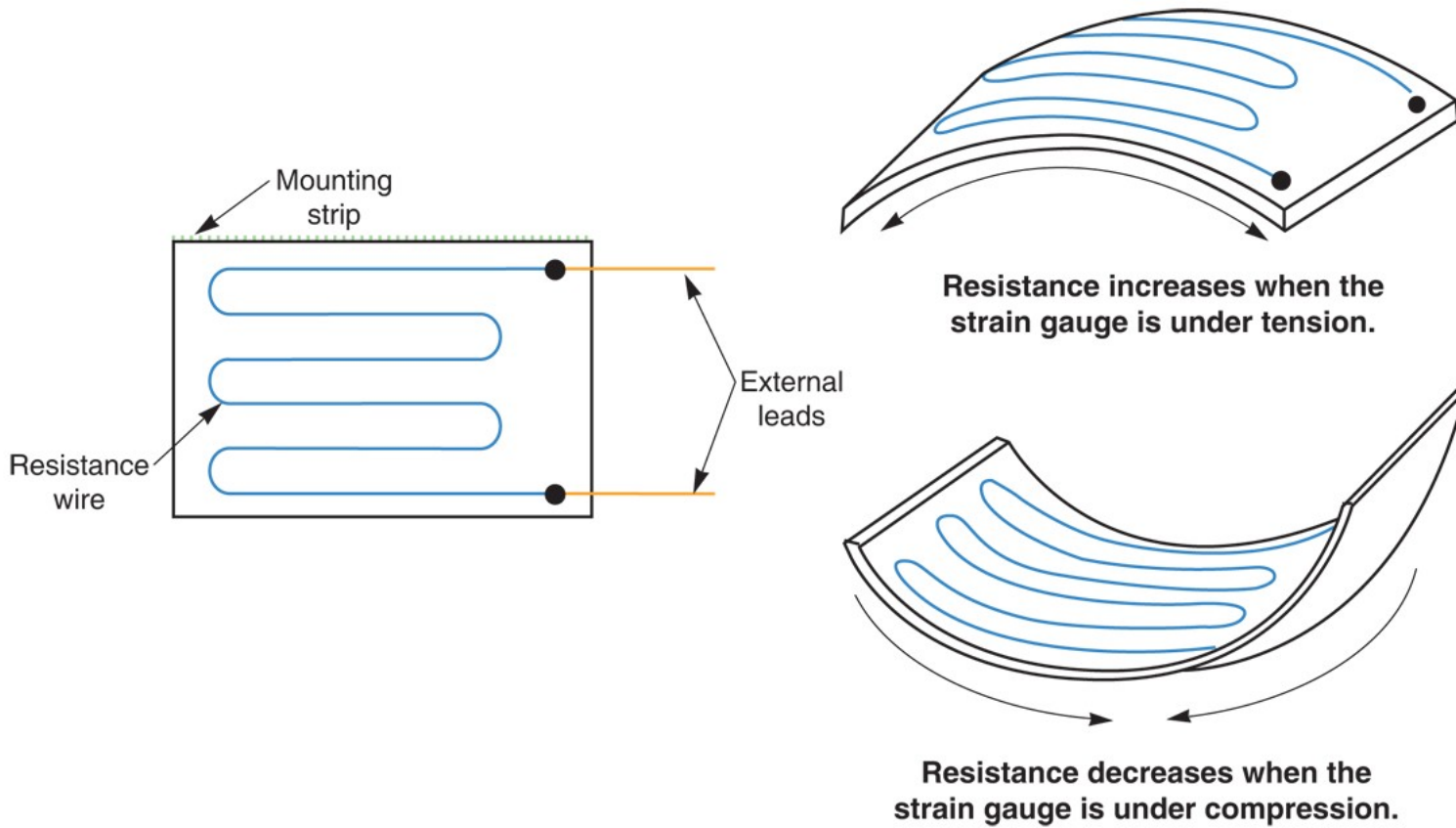
Reed Switches



Speed Sensors

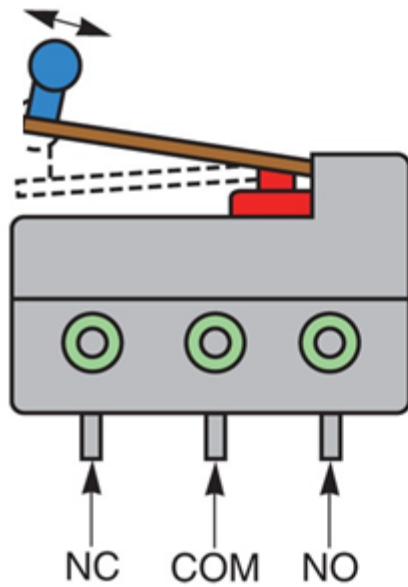


Strain Gauge

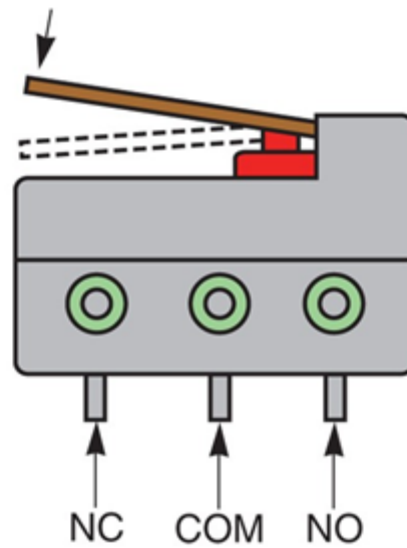


Limit Switches

Roller-type actuator



Paddle actuator



Push-button actuator

