Bab 9. Displacement, velocity Transmitter

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Mechanical Displacement Meters

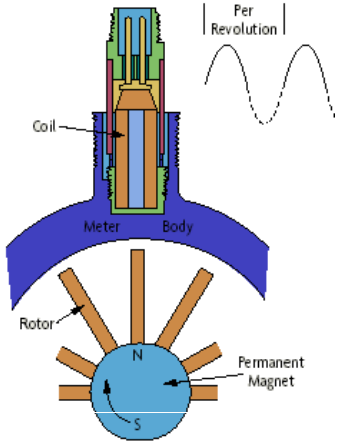


Fig. Turbine meter

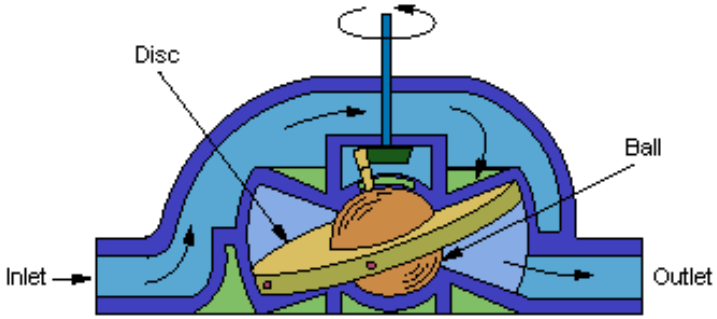


Fig. Nutating disc

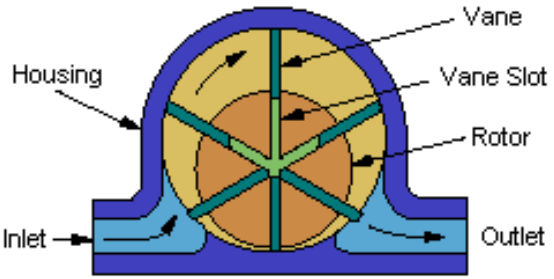


Fig. Rotating vane

Velocity Meters

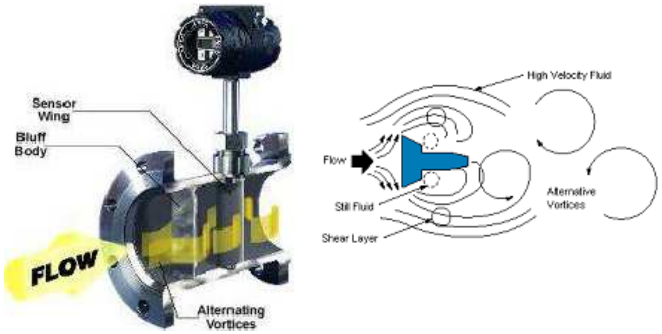


Fig. Vortex flow meter & shedding

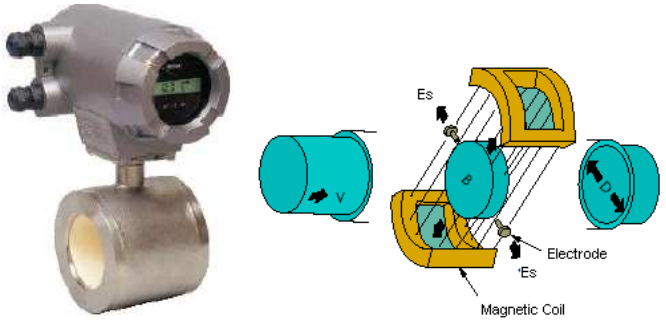


Fig. Magnetic flowmeter

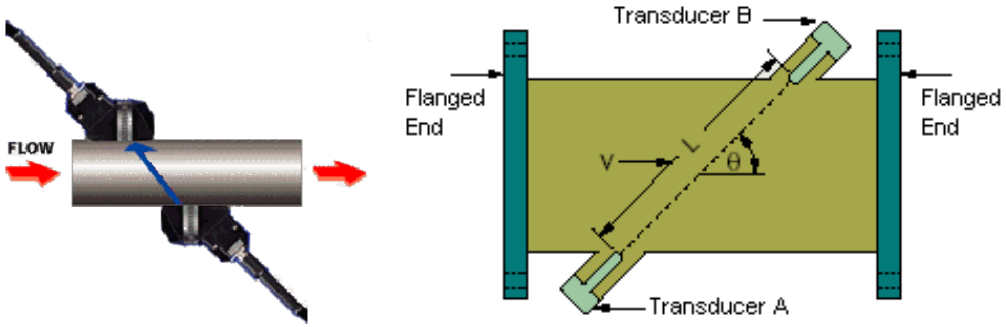


Fig. Ultrasonic flowmeter

Mass Meters (1)

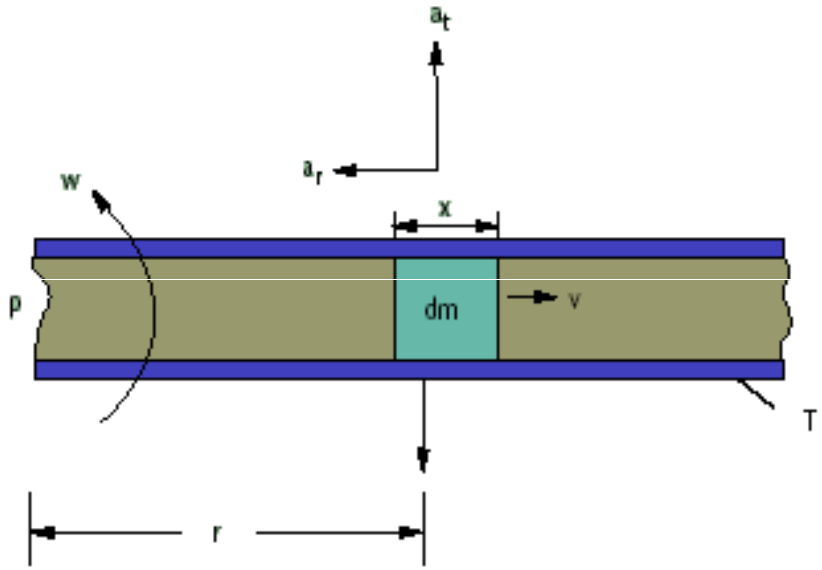


Fig. Coriolis meter principles

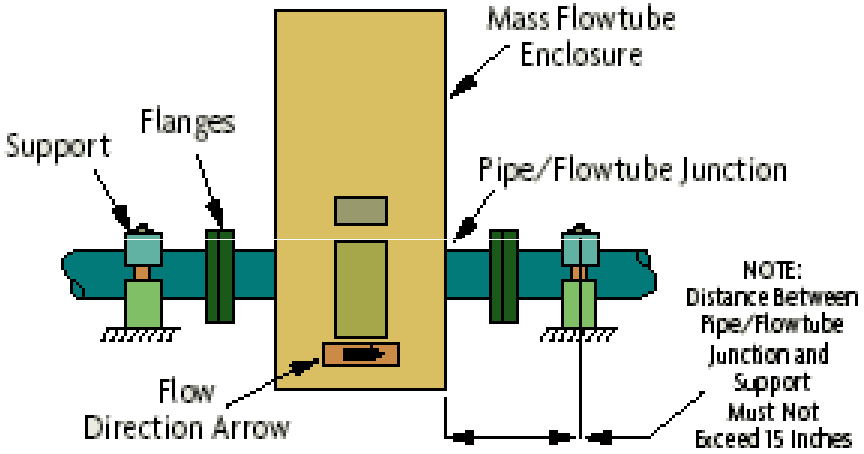


Fig. Installation of coriolis meter

Mass Meters (2)

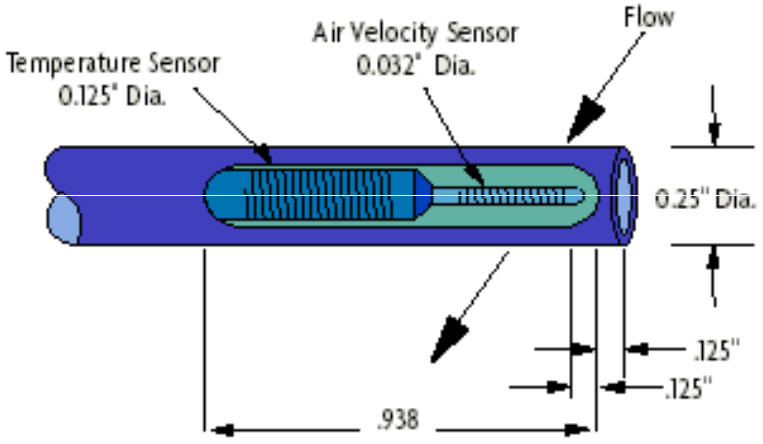


Fig. Probe configuration of thermal meter

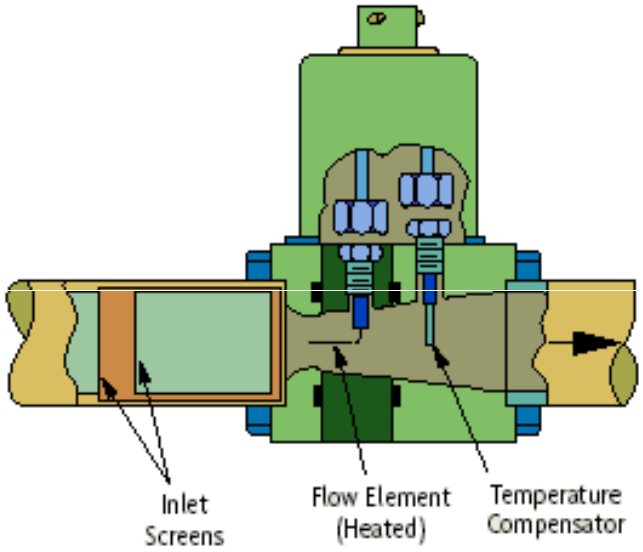
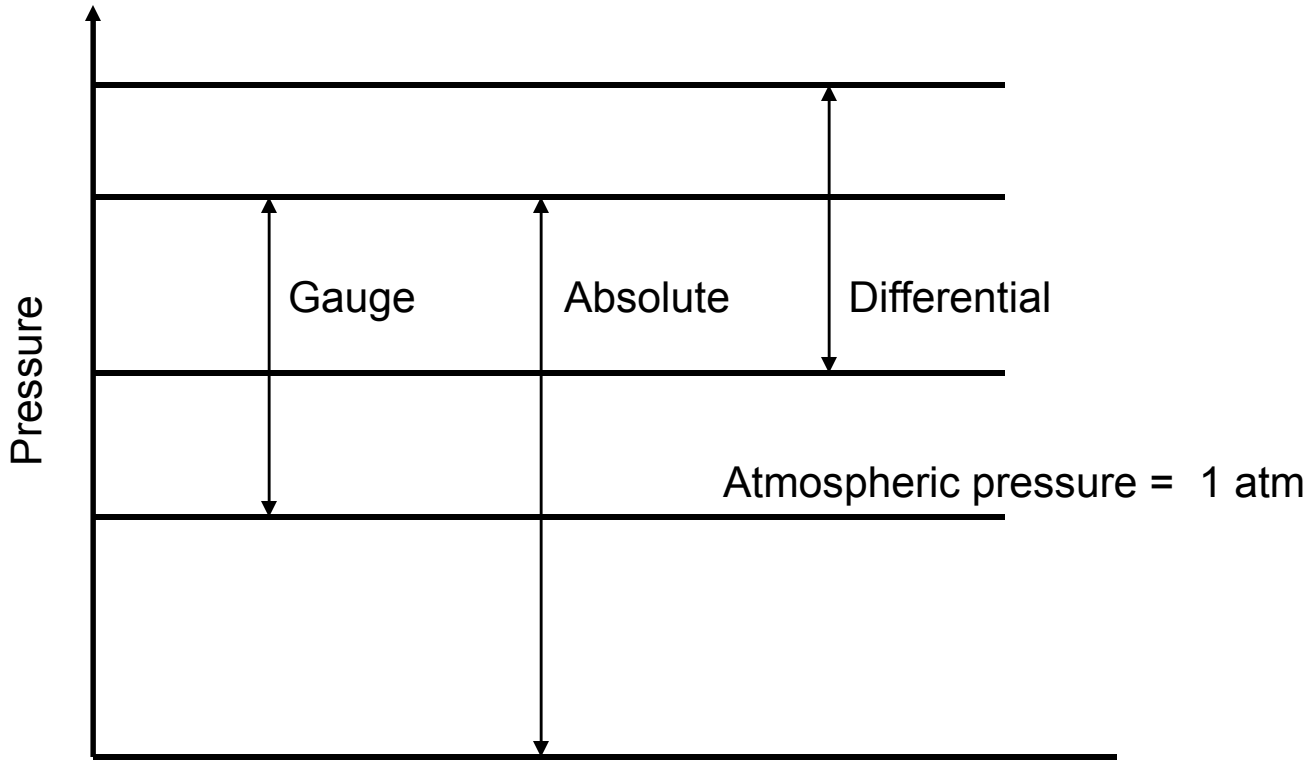


Fig. Venturi insertion of thermal meter

Pressure Measurements

- Depending on the reference pressure used, they could indicate:
  1. Absolute
  2. Gauge, and
  3. Differential pressure
- Based on mechanical principles, i.e. deformation based on force:
  1. Bourdon
  2. Bellow
  3. Diaphragm
- Based on electrical principles; some convert a deformation to a change in electrical property, others a force to an electrical property
  1. Capacitive
  2. Strain gauge
  3. Piezoelectric

Absolute, Gauge & Differential Pressure



Bourdon, Bellow, & Diaphragm

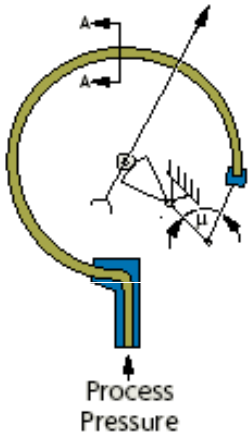


Fig. Bourdon

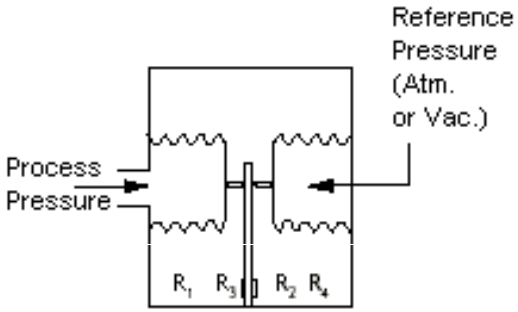


Fig. Bellow

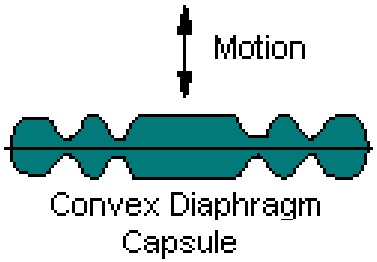


Fig. Diaphragm

Capacitive, Strain Gauge & Piezoelectric

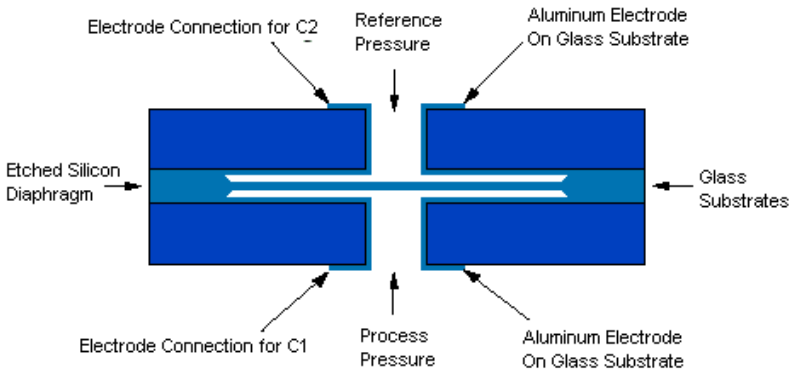


Fig. Capacitance-based pressure cell

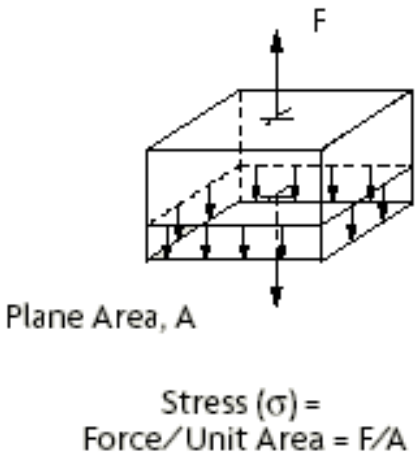


Fig. Strain gauge

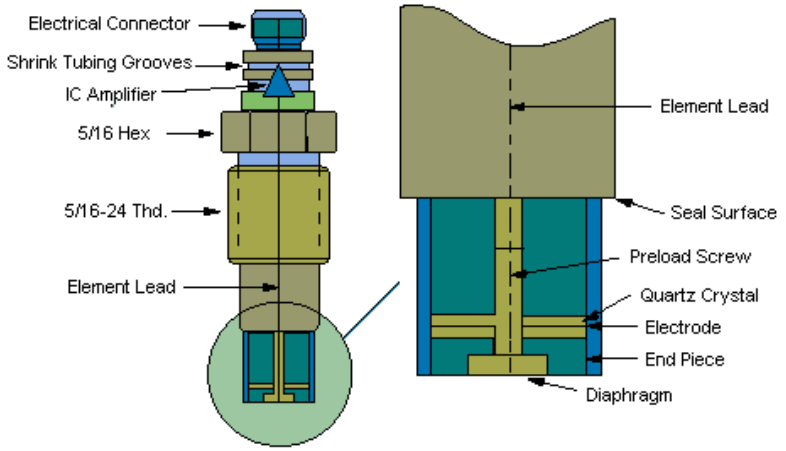


Fig. Piezoelectric