Tutorial 8

Automatic blood pressure measurement system

Oscillatory method for detecting blood pressure

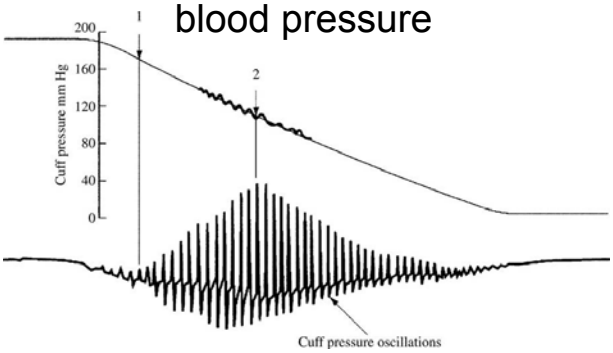
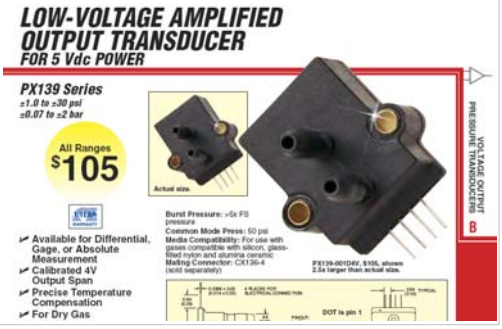


Figure 7.22 The oscillometric method A compression cuff is inflated above systolic pressure and slowly deflated. Systolic pressure is detected (Point 1) where there is a transition from small amplitude oscillations (above systolic pressure) to increasing cuff-pressure amplitude. The cuff-pressure oscillations increase to a maximum (Point 2) at the mean arterial pressure.

Integrated pressure sensors

- They provide an amplified signal 0-5V.
- Easy to integrate in applications.



Case Study

- Design an Automatic Blood Pressure measuring system.
- Use the oscillatory method.

Case Study

- Pressure for maximum oscillation amplitude → mean arterial pressure
- First pulse with amplitude Vs >=0.85 Vmap → pSystolic
- Last pulse with amplitude Vd >= 0.55 Vmap-> pDiastolic

Evaluating the force applied by guidewires and catheters on upper urinary tract