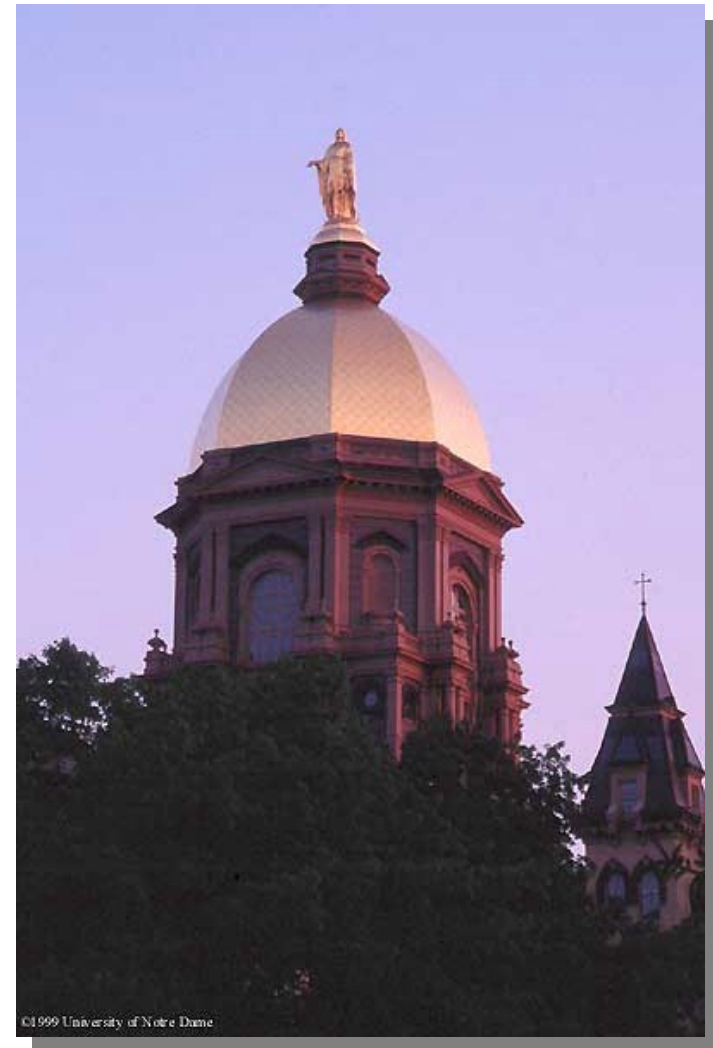


Sensors and Actuators

Types of Sensors:

- Motion detection
- Pressure sensing – pressure transducer
- Accelerometer
- Light detection - photoelectric
- Voice recognition/sound recognition
- Proximity – distance recognition



Sensors and Actuators

Piezoelectric Actuators:

- Directly converts electrical energy into motion
- Very high resolution
- Fast response
- Low and high voltage versions
- Solid state, ceramic actuators
- Used in cruise control systems



Sensors and Actuators

Pressure Sensors:

- Small, low cost
- Excellent repeatability, high accuracy
- High consistency
- Interchangeability without recalibration
- Three pressure measurement types – absolute, differential, and gage
- Typical applications include pumps, robotics, and process controls



Water Level Sensors:

- Solid state sensor using an optoschmitt trigger that provides a digital output as to whether or not liquid is present
- Total internal reflection
- Typical applications include home appliances, compressors, machine tools, process and packaging equipment



Sensors and Actuators

Pneumatic Piston Pumping System:

- Piston driven from torque off wheel rotation
- One way valve to let air into the system
- Pressure valve to release water cavity pressure if it grows too high

