

# Measurement systems overview

Measurement systems are usually comprised of four devices.

1. **Sensor** A sensor interacts with its environment in such a way as to indicate a variable of interest from the environment. **Examples:** thermistors, strain gauges, accelerometers. For now, we will be focusing on sensors.

2. **Transducer** A transducer changes the form of the sensor's output such that it becomes more convenient to use. It is sometimes considered to be part of the sensor. Occasionally, the term "transducer" is used to denote an **actuator** that acts on the environment. This is not the sense in which we use the term. **Examples:** Wheatstone bridges, telephone mouth/ear pieces.

3. **Signal conditioner** A signal conditioner changes the form of the transducer's output such that it is ready to be processed. It will usually amplify and filter the signal. **Examples:** filters, amplifiers.

4. **Signal processor** A signal processor takes the analog output of a signal conditioner and digitizes it such that it can be stored in a computer.

**Example:** A/D converter.

