

## Sensors

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Sensors: These are input devices, which record data about physical environment around it.

Sensors send data to the microprocessor. They do not make any judgment or decision.

There are many types of sensors, which are used in a variety of household, commercial and industrial applications.

Advantages:

- Reliable
- Accurate
- Don't get tired
- Work well in places where humans can't work.

Different Sensors and their use:

Magnetic Field Sensor:

- Detects changes in magnetic field
- Can measure the strength & direction of magnetic field.

Used in:

- Mobile devices/phones
- Anti-lock braking (ABS) in cars
- Detection of cars at traffic signals.
- Reading magnetic ink characters on cheques.

Motion (infra-red) Sensor:

- Detects movement of the objects.

Used in:

- Automatic doors
- Burglar alarm systems
- Gaming systems
- Counting cars in parking lots.

Temperature Sensor:

- Measures heat generated by objects. By measuring the change in heat, the sensor can detect changes in temperature.

Used in:

- Ovens, refrigerators & freezers etc.
- Chemical processes
- Central heating or air conditioning
- Greenhouses



Sound (Acoustic) Sensor:

- It measures the presence of sound.

Used in:

- Burglar alarms
- Leak detection

Moisture (Humidity) Sensor:

- They sense/measure the amount of moisture in air or certain material like cloths



Clothes Dryer:

- It measures pressure.

Used in:

- Weighing scales

Balances:

- Burglar alarm system

Traffic light controls:

- Chemical processing

Braking test machine:

Gas Sensor:

- Detect the presence of gas in certain area.

Used in:

- Pollution monitoring

Greenhouse:

- Rooms (confined areas)

Fish tanks:

Light Sensor:

- Measures light presence.

- Can detect ambient light; how bright or dark it is.

Used in:

- Water treatment plants.

Pollution monitoring:

- Aquariums.

Chemical factories:

Greenhouses:

pH Sensor:

- Measures how acidic or alkaline a material is.

Used in:

- Water treatment plants.

Pollution monitoring:

- Aquariums.

Chemical factories:

Greenhouses: