

## Sensors in Everyday Life



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We use sensors everywhere in our routine life. Sensors are all around us and knowingly or unknowingly, the sensors are involved in our so many routine tasks. From writing a message to someone from our mobile phone to getting a cup of coffee from a coffee vending machine and from opening the automatic doors in a shopping mall to parking a car in designated parking areas, sensors play a vital role in helping us directly or indirectly.

So, what is a sensor basically? A sensor is a device, module, machine, or subsystem whose purpose is to detect events or changes in its environment and send the information to other electronics, frequently a computer processor. Thus, in sensors

one form of energy is converted into another form of energy. A sensor is always used with other electronics devices like signal conditioning devices, analog to digital converters (ADC) etc. The events detected by the sensor or the changes in environment are known as input to the sensor and the information sent by the sensor is known as output of sensor. e.g., For a thermocouple sensor temperature or change in temperature is input while emf induced by thermocouple is the output.

In our everyday life, we use sensors every time, we come across any advanced instrument/gadget. When we are writing something on the screen of a smartphone, basically we are using a tactile sensor. Similarly, a capacitive sensor can be used to lock or unlock the smartphone. A capacitive or resistive sensor can be used in the touch pad of a laptop. In refrigerators we use temperature sensors to start/stop the compressor. In automobiles we use Tachometers to measure the speed of the vehicle. For car parking systems we can use ultrasonic sensors. In public places and offices there are numerous applications of sensors. We can use a variety of proximity sensors to detect the presence of human beings when opening or closing an automatic door in supermarkets or shopping malls. Similar kinds of sensors can be used to start/stop the staircases. Sensor taps can be used to control the flow of water in toilets. A coffee vending machine installed in public places uses a position sensor to dispense the exact amount of coffee.

In essence sensors have captured all aspects of human life and the presence of the sensors can be felt everywhere around us. Sensors is a vast field and with the growing demand for automated systems one can try to learn the basics of sensors to develop future AI based systems and IoT based automation technologies.