



Sensors for IOT Applications

There are a wide variety of sensors that can be used in IOT (Internet of Things) applications, depending on the specific needs of the application. Here are some common sensors used in IOT applications:

1. Temperature sensors:

These sensors measure the temperature of the surrounding environment and can be used in various applications such as HVAC control, cold chain monitoring, and home automation.

More frequently temperature sensor applications will also incorporate instances where although the temperature is not the forefront of the process, other components may not be able to function at certain temperatures so the temperature must be monitored within the application for this reason. The temperature sensor will indicate when the environment becomes too hot or cold and preventative action can be taken to ensure that the entire device is not compromised.



2. Humidity sensors:

These sensors measure the amount of moisture in the air and can be used in applications such as agriculture, HVAC control, and home automation. The capacitive sensor is used for various applications for measuring humidity in HVAC systems, Printers, Fax machines, Weather stations, automobiles, food processing, refrigerators, etc... Due to their low cost and small size, resistive sensors are used in residential, industrial and domestic applications. Thermal Conductive sensors are commonly used in pharmaceutical plants, food dehydration, drying machines, etc...

3. Pressure sensors:

These sensors measure the pressure of a fluid or gas and can be used in applications such as industrial automation, automotive, and aerospace. Automotive monitoring solution for hydropower plants, used in pressure transmitters in seed generating systems. It comes in handy in electrogenic low meters applied in wastewater and oil fields, used as a pressure sensor and a transmitter for special gas pressure measurement. It helps detect liquid flow in oil and gas drilling wells, used in firework departments, comes in hand with wireless monitoring solutions for firefighting gear.



4. Motion sensors:

These sensors detect motion and can be used in applications such as security systems, smart lighting, and industrial automation. Avoid placing Sensors close to heat vents or drafty places that can easily trip the sensors due to temperature shifts. Place the sensors opposite to doorways or entrances so that the device senses movement at the earliest. Avoid blocking the sensors by placing them above tall furniture. It can restrict the infrared radiation as it doesn't penetrate through hard objects like furniture. Test the motion sensors for the right area and its functioning as per your expectations. Dust particles on the sensors can restrict the functioning of the sensors; hence regular maintenance of the devices is necessary.

5. Light sensors:

These sensors measure the intensity of light and can be used in applications such as smart lighting, building automation, and agriculture. The light sensor circuit can be used to design various practical embedded systems based sensor based projects such as security alarm system by photo electric sensor, Arduino managed high sensitive LDR based power saver for street light control system, a solar highway lighting system with auto turn off in daytime, sunset to sunrise lighting switch, and so on.



6. Proximity sensors:

These sensors detect the presence of nearby objects and can be used in applications such as robotics, industrial automation, and automotive. The proximity sensor is mainly used to notice the existence of any target without touching. It detects as well as calculates any changes within the nearby location. These are utilized in mobile phones. This kind of sensor is mainly used within the automation system of the home to switch on the light automatically once any person there within the room. These are used in machine tools, rolling mills & automation systems.

7. Gas sensors:

These sensors detect the presence of gases and can be used in applications such as air quality monitoring, industrial safety, and environmental monitoring. They are commonly used to detect toxic or explosive gasses and measure gas concentration. Gas sensors are employed in factories and manufacturing facilities to identify gas leaks, and to detect smoke and carbon monoxide in homes. Gas sensors vary widely in size (portable and fixed), range, and sensing ability.