

# Different Types of IR Sensors and their Application.

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IR sensors are classified into different types depending upon the applications.

Radiation Thermometers  
IR sensors are used in radiation thermometers to measure the temperature directly upon the temperature and the material of the object. These thermometers have the following features.

- i) measurement without direct contact with the
- ii) fast response
- iii) Easy pattern measurement.

Flame Monitors These types of sensors are used for detecting the light emitted from the flames and to monitor how the flames are burning.

PbS, PbSe, Two-colour detector, photoelectric detector are some of the commonly employed detectors used in flame monitors.

Moisture Analyzers Moisture analyzers use wavelengths which are absorbed by the moisture in the IR region. Objects are irradiated with light having these wavelengths 1.0  $\mu\text{m}$ , 1.9  $\mu\text{m}$ , 1.9  $\mu\text{m}$  and 2.7  $\mu\text{m}$  and with reference wavelengths.

The light reflected from the objects depend upon the moisture content and is detected by the analyzer to moisture (Ratio of reflected light at these wavelengths to the reflected light at reference wavelengths.)

In CO<sub>2</sub>, PIR photo diode, Pb photo cell detector detectors are employed in





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moisture analyzer circuits.

Gas Analysis:

IR sensors are used for gas analysis, where we absorption characteristics of molecules are used to measure the density of gas such as dispersive and non dispersive.

Dispersive: An emitted light spectroscopy is used and the absorption characteristics are used to analyze the gas concentration and the sample quantity.

Non dispersive: It is most commonly used method and it uses absorption characteristics without dividing the emitted light. Non dispersive types are discrete optical band pass filters. Similar to sunglasses that are used for eye protection to filter out unwanted UV radiation.

IR imaging devices:

IR imaging device is one of the major applications of IR waves, primarily by the use of its property that is not visible.

It is used for thermal imaging, night vision devices.