IOT Exp - 2

Title :- Study of different types of sensors, actuators, transducers.

Aim :- To study about types and different applications of sensors, actuators and transducers.

Theory :-

Sensors :-

sensors detect the presence of energy, changes in or the transfer of energy.

Types of sensors.

All types of sensors can be basically classified into analog sensors & digital sensors. But, there are few types of sensors such as temperature sensors, IR sensors, ultrasonic sensors, pressure sensors, & touch sensors are frequently used in most of the electronics applications.

- Temperature sensor.

A temp. sensor plays an important role in many applications. e.g, maintaining a specific temperature is essential for equipment used to fabricate medical drugs, heat liquids, or clean other equipment.

Commonly used temperature sensor types.

a) Negative Temperature Coefficient (NTC) thermistor
b) Resistance Temperature Detector (RTD)
c) Thermocouple
d) Semiconductor - based sensors.

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ii) IR sensor :- An ifrared sensor is an electronic instrument which is used to sense certain characteristics of it's surroundings by either emitting & / or detecting infrared radiation.

iii) Ultrasonic sensor :-

Ultrasonic transducers or ultrasonic sensors are a type of acoustic sensor divided into 3 broad categories :-

↳ transmitters

↳ recivers

↳ Transceivers.

iv) Proximitity sensors

A proximity sensor is a sensor able to detect the presence of nearby objects without any physical contact.

v) Pressure sensor :-

A pressure sensor ~~measure~~ measures pressure, typically of gases or liquids.

vi) Level sensors :-

The level sensors provide measure concerning the content of tanks, silos, boilers, tanks, wells blacks & other containers of liquid & solid material.

Transducer.

Transducer is a device that converts input energy into output energy, the latter usually differing in kind but bearing a

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known relation to input.

Types of Transducer.

(i) Electrochemical Transducer
(ii) Electro acoustic, Electromagnetic, and Electrostatic Tranducers.
(iii) Electromechanical Transducers.

Actuators :-

An actuator is something that actuates or moves something. More specifically, an actuator is a device that coverts energy into motion of mechanical energy.
Therefore, an actuator is a specific type of a transducer.

1) Thermal Actuators.
2) Electric Actuators
3) Mechanical Actuators:

Conclusion :- Thus we have studied various sensors used in IoT with it's pin layouts.

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