

What is a Sensor?

A sensor is a device that detects an external stimulus, and it changes that stimulus to a detectable signal, by means of a transducer. The following mnemonic is used: Sensors = Stimulus + Transducer + Signal (STS). This general definition can be used to identify many everyday sensors.

1. Compass

Question:

Can a compass be considered a sensor? If yes, briefly describe.

Answer:

A compass is a magnet that can spin with little resistance (or friction). Since all magnets want to line up, the compass tries to line up with the Earth's magnet. The North wants to line up with the North. The compass has a mark with North on it.

Further Questions:

What part of the compass is interacting with the environment?

Where is the transducer?

What are we measuring?

2. Thermometer

Question:

Can a thermometer be considered a sensor? If yes, briefly describe.

Answer:

A thermometer is material that changes when you heat it up. For example, a liquid inside a glass tube rises up when it is heated, and it falls when it is cooled. The numbers on the side of the tube are chosen by comparing it to certain conditions, like the boiling and freezing of water.

Further Questions:

What part of the compass is interacting with the environment?

Where is the transducer?

What are we measuring?

3. The Human Eye

Question:

Can the human eye be considered a sensor? If yes, briefly describe.

Answer:

Your eyes are one of the most sophisticated sensors. They are specifically called biosensors, because they have biological parts. Your eyes are made up of many parts, but we can look at the pupil.

Question:

What is the Pupil?

Answer:

A pupil is an opening at the front of your eye that, that lets a certain amount of light in. If there is a lot of light, it closes, and if there is little light it opens. This is similar in behavior to the pupil of the human eye.

Further Questions:

What part of the compass is interacting with the environment?

Where is the transducer?

What are we measuring?