Motion Detector Encyclopedia Article

Motion Detector

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Motion Detector

The development of motion detectors, also known as motion sensors, is closely related to the invention of radar. Like many inventions developed for military use, motion detectors found wide application in industry. In manufacturing, motion detectors proved useful as factories increasingly automated after World War II (1939-49). In addition, motion detectors became a basic component of security systems.

By the 1970s, there were essentially two varieties of motion sensors: acoustic and photoelectric. Sonic acoustic sensors use a speaker that continously emits sound waves to a receiver. Typically, the speaker and receiver are placed across a room from one another. Any movement between the speaker and receiver will interrupt the sound waves. When the interruption is detected by the receiver, an alarm sounds. The radio frequency motion detector is a variation of this invention. It uses electromagnetic waves instead of sound waves. Advancements were made to improve the sensitivity of receivers to eliminate false alarms.

Photoelectric motion detectors became much more common than the acoustic variety by the 1980s. Cheaper and more reliable, photoelectric detectors exist in several varieties. Some use an "active light beam" that passes between a transmitter and receiver. If the beam is broken, an alarm sounds much as with the acoustic detectors. Passive light detectors sense motion by detecting a change in the available light in a room. Inexpensive and reliable, this type of motion detector has become widely used in homes for turning on exterior lights, night lights, and others. Proximity detectors use an electrostatic field to detect the presence of a body near it. These detectors found application in the 1980s in automobile security systems. If the system detected a body near the car, an alarm or other warning would sound.