

: *What are sensors, actuators and effectors?*

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Sensors provide data on the immediate, surrounding or ambient environment of interest for control or decision support. Actuators and effectors provide the means for a software system to act in and on the ambient environment. So these devices provide the eyes, ears, nose of a computerized system and the hands and legs for it to act.

A more formal definition for sensor is any device that detects or measures a physical property and records, indicates, or captures data about it. A sensor is a device used to measure a property, such as force, pressure, position, temperature, or acceleration, and respond with feedback. An electronic sensor detects and measures a physical phenomenon, such as temperature, pressure, force, or acceleration, and provides a corresponding output (<https://sensing.honeywell.com/sensors>). Common types include Magnetic Sensor, Piezo Sensor, Capacitive Sensor, Resistive Sensor, Geomagnetic Sensor, and Pressure Sensor. Definition of sensor: a device that responds to a physical stimulus (such as heat, light, sound, pressure, magnetism, or a particular motion) and transmits a resulting impulse (as for measurement or operating a control) (from <https://www.merriam-webster.com/dictionary/sensor>).

An effector is any device that affects the physical environment. An actuator is the actual mechanism that enables the effector to execute an action. Actuators typically include electric motors, hydraulic or pneumatic cylinders, etc. The terms effector and actuator are often used interchangeably to mean "whatever makes the robot take an action." Mechanisms for acting on the world

Effectors can range from legs and wheels to arms and fingers. An actuator is the actual mechanism that enables the effector to execute an action.

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