

SENSOR BASICS

A manual switch enables an operator to interact with a machine. If, for example, an operator sees a problem on a manufacturing line, he could move a switch to stop the line. Or, think of a light switch in your home. If you (the operator) want the light turned on, you have to move the switch.

A sensor can be thought of as an automatic switch. In a factory, a sensor can be used to detect a problem on the line and stop the line automatically. Or, in your home, a sensor could be used as a security device to detect an open window or door.

Sensors have contributed significantly to recent advances in manufacturing technology. Using a sensor makes a process or system more automated and removes the need for human operators to monitor and control the situation.

The three main categories of sensors are limit switches, proximity sensors and photoelectric sensors. Let's take a moment to look at each type of sensor.

Limit Switch

A limit switch is an electromechanical device. A part of the limit switch, called an *actuator*, is placed in the path of an oncoming object, such as a box on a conveyor. When the object contacts the actuator, the contacts in the limit switch are opened (or closed, depending on the limit switch's design) to stop (or start) the flow of current in the electrical circuit.



FIGURE 2: LIMIT SWITCH WITH STANDARD ROLLER LEVER