



# Sensor Technology

Sensors transform real world physical properties and provide the measurement data to manage and control your environment. Data is collected and integrated into your IT infrastructure to enable more precise decision making for your organization.

## ► How NEWCOM can provide solutions...

Sensors, and software come together to manage office, building, vehicle, and campus environments. Identifying, designing, and implementing the supporting infrastructure for a multiple array of sensors is the key to putting the data from these sensors to work for you. Collecting, storing, and retrieving this data quickly can be challenging, but NEWCOM will work with you to answer the questions you have to deploy a best in class solution.

- Sensors are devices used to detect the presence of any physical object in the vicinity and remotely send information about the same to a receiving end.
- Sensor hardware is almost always used in combination with other electronics.
- Software is the horsepower behind the scenes organizing and retrieving your data quickly.



# Sensor Selection

TEMPERATURE	LIGHT
<p>To see who has a temperature or not can be done using handheld hardware, or fixed mounted hardware for lobby and entrance areas. Temperature can also be measured using handheld thermal IR devices.</p> <p>Examples: Thermal IR fixed to turnstile, passive IR wide area camera for lobby, handheld tablet with camera</p>	<p>Light sensors convert light energy into an electrical signal to see the output. They are otherwise called as photo sensors or photoelectric devices.</p> <p>Examples: Mobile phones, computers, tablets, light adjustment mechanisms, automated presence sensing lights switches</p>
PRESSURE	ULTRASONIC
<p>To measure the pressure of liquids and gases. The pressure is measured through the on/off valves and generates a signal as output.</p> <p>Examples: Pressure transducers and pressure switches for valves. Measurement of gallons of food or manufacturing raw materials</p>	<p>Measurement of distance between transmitting and receiving ultrasonic signals. They are two types of ultrasonic sensors are proximity and continuous.</p> <p>Examples: Measuring liquid levels, detecting wire breaks, height control, and robotic sensing</p>
COLOR	TOUCH
<p>Detection of colors and to recognize color, marks, and shapes. Also distinguish between different colors. The interaction between light sources, object, and receiver are measured using cameras.</p> <p>Examples: Detect and verify color on driver's license, in a painting, printing processes or food processing</p>	<p>Touch works as a switch and does the specific operation when touched. There are IR sensors and capacitive touch sensors that work on pressure sensing.</p> <p>Examples: Mobile phone and laptop screens. Human touch sensitivity or any force applied. Pressure can come from light, magnets, or electricity</p>



# Sensor Selection

FLOW AND LEVEL	SMOKE
<p>Flow and Level are used to determine the level of fluids in a space. It works on the principle of buoyancy. A magnet is connected to the device and when the level rises, the magnet gives a signal to the switch that makes it work.</p> <p>Example: Fuel tanks, marine applications</p>	<p>The device that is used to detect smoke is called Smoke Sensor. As smoke enters the sensor chamber and crosses the path of the light beam, light is scattered by the smoke particles, aiming it toward the sensor, which in return triggers the alarm.</p> <p>Examples: Fire, smoke, vaping, used in buildings, ships, airplanes. Chemical sensing can be combined with light sensors for vaping and Co2 monitoring</p>
ACCELEROMETER	INFRARED
<p>Accelerometers are used to measure the acceleration of a device or a vehicle. Proper acceleration of the body depends on the motion or rest of the body whereas coordinate acceleration depends on the coordinate system of the body.</p> <p>Examples: Automotive speed, athletic wearable watches, medical devices</p>	<p>The device that measures the infrared light emitted by objects within its view is called an infrared sensor. IR sensors either emit or detect infrared lights. Active and passive infrared sensors measure IR lights based on the warmth or the material. Passive/surface IR detects heat from the environment.</p> <p>Examples: Reading fingerprints, Thermometers distance sensing, checkout registers, coolers, ovens</p>
HUMIDITY	TILT
<p>Humidity is also called a hygrometer and is used to measure the moisture or air temperature present in the atmosphere. The information from the sensor is used for measuring humidity.</p> <p>Examples: HVAC in homes and automobiles, medical applications, food storage, wine, cigars, deterioration in integrity from moisture</p>	<p>This device is used to measure the tilt or rotation of the reference plane in different axes. This is used to measure the inclination or rotation of the surface. This can be used in vehicles as a safety alarm when an accident occurs.</p> <p>Examples: Automotive crash detection, man down orientation, tipping of trailer trucks with inclines too steep, monitoring or cargo this side up</p>

