

7.6 TACTILE SENSORS

An array of touch sensors arranged systematically to provide information about the contact of the fingers with the object is called the tactile sensors. The special tactile sensors also provide additional informations like shape, size and the type of material of the objects.

Each element in an array (tactile sensor) there are three functional parts : A plunger, a LED and a light sensing device. The schematic is as shown in Fig. 7.3. The movement of the plunger opens/blocks the LED, and the light sensor gives output signal accordingly.

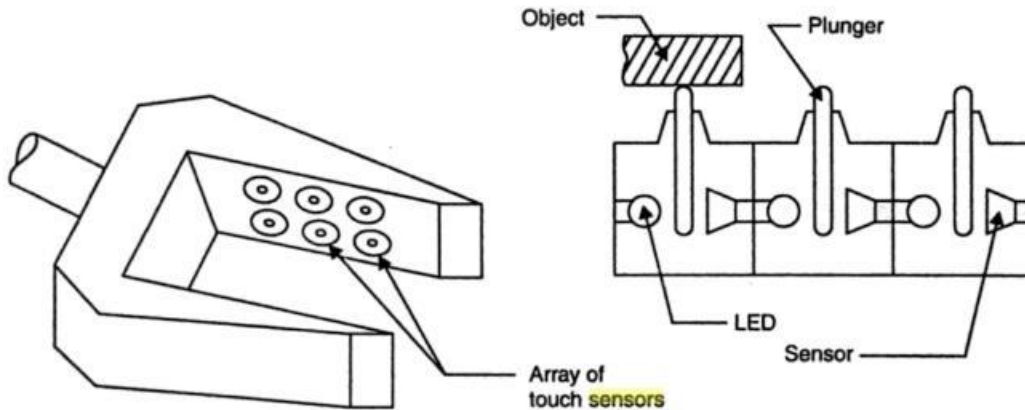


Fig. 7.3. Tactile Sensors.

Optical tactile sensor works on the changing intensity of light. In this sensor, change in intensity of light is measured. A light source is constantly sending light to the light detector placed on the opposite end. Whenever any area in between these light sources and light detector undergoes shape change due to touch, pressure or force on the surface, change in intensity of light is observed. Several such pairs of light source and light detector are used in an optical tactile sensor. This change in intensity of the light received by the detector is shown or virtually plotted as an image using special circuits. The image shows how the light intensity changes due to deflection when any external force is applied on the sensor surface.