Touch Sensors

Capacitive, Resistive

Capactive –

Proximity sensor. As a conductive object approaches a charged plate. The capacitance of the plate will increase. Uses a frequency of around 100kHz as this decreases the resistance of free space. Complications with water as it creates false readings. Solutions can be found to combat water droplets but not if the device is completely submerged. None viable option as heavy rain/ big wave will lead to incorrect operation.

Pressure sensor w/capacitors. Two plates, when pressure is applied the capacitance will change.

Pressure sensor w/resistivity. Conductive material with two contacts/wires. When pressure is applied the resistance of the material will change.

Issues: Material between contacts in capacitor or conductive material will have to return to original shape to maintain constant properties.

May be hard to follow the curve of the surface. To combat this many smaller sensors can work in an array.

What is the lightest touch to be recognised without causing a false reading.