The pressure transmitter is an instrument that converts pressure measurements into standardised output signals that can be transmitted. It is mainly used for the measurement and control of pressure parameters in industrial processes. Common standardised output signals include 4~20mA current signals which have a linear relationship with pressure, 0~5V/0~10V voltage signals.

When pressure is applied to the Pressure Transmitter, then the applied pressure acts as a force on the diaphragm inside the pressure transmitter. Then the diaphragm either expands or compress depends on the applied pressure.

Diaphragm expand or compress basis on positive or negative pressure. The resistors are mounted on top of the diaphragm. So when the diaphragm expands or compress, the resistance value changes. These resistors are connected in a standard Wheatstone bridge. The change in resistance is measured using a Wheatstone bridge. The bridge output is proportional to applied pressure.

Note: In Some types of pressure transmitters manufactures can use capacitance, inductance, conductivity, piezo electric crystals etc in place of resistors. So depending on the applied pressure the diaphragm expands or compress, then respective sensor parameter like resistance, capacitance, inductance, piezo electric crystal etc.. will change and it is proportional to the pressure.