

## SCHMITT TRIGGER

When dc positive feedback is applied around an op-amp, its output will come to rest in one of two states, that is in its most positive or most negative position. This type of circuit is known as a Schmitt Trigger and it is said to exhibit the property of hysteresis.

Consider the circuit shown in Figure 15. Let us assume that  $R_B$  is 2 k and  $R_A$  is 1 k and the output voltage is +10 V. Therefore the voltage at the non-inverting terminal is 3V3. When the input voltage becomes more positive than 3V3, the output of the op-amp will start to swing negative and in doing so will increase the voltage difference between the inputs. This will in turn make the output swing even more negative. Thus the process becomes regenerative, the output finally 'snapping' into its negative state (-10 V say). The only thing that will now change the op-amp's output is if the inverting input goes more negative than the non-inverting input. When this occurs it will revert back to its original state. The two input voltages at which these transitions happen are known as the upper and lower hysteresis levels.

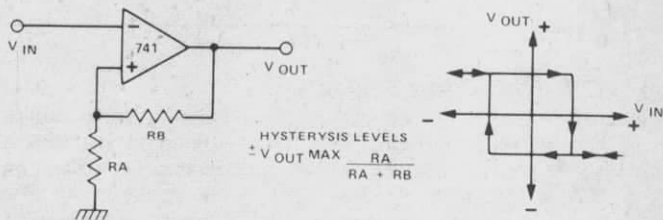


Fig. 15. Schmitt trigger configuration.

