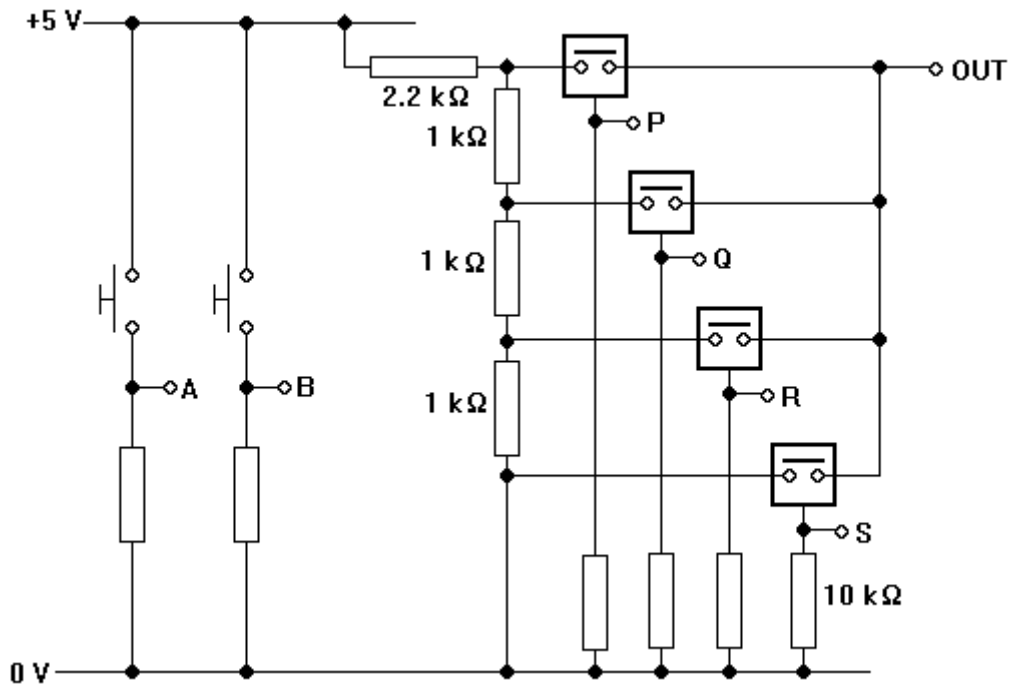


Using analogue switches

This experiment should give you some idea of the usefulness of analogue switches.

- 1 The circuit below uses the four analogue switches of a 4066 i.c. to place four different voltages at OUT, depending on the logic signals at P, Q, R and S.



- 2 Assemble the circuit shown above. All four pull-down resistors for the analogue switch control inputs which need to be at least $10\text{ k}\Omega$. The pull-down resistors for the push switches can have any value.
- 3 If all is well, the voltage at OUT should be 0 V, 1 V, 2 V or 3 V depending on which **one** of P, Q, R or S is pulled high.
- 4 Design a logic system using NOT and AND gates which will allow the circuit to obey this table. B and A are digital signals from the two push switches.

B	A	P	Q	R	S	OUT
0	0					0 V
0	1					1 V
1	0					2 V
1	1					3 V

- 5 Assemble the logic system. Test the whole circuit. It performs the function of a digital-to-analogue converter.