Single-phase rectifier circuit

The circuit is represented by a system model implementing the equations:

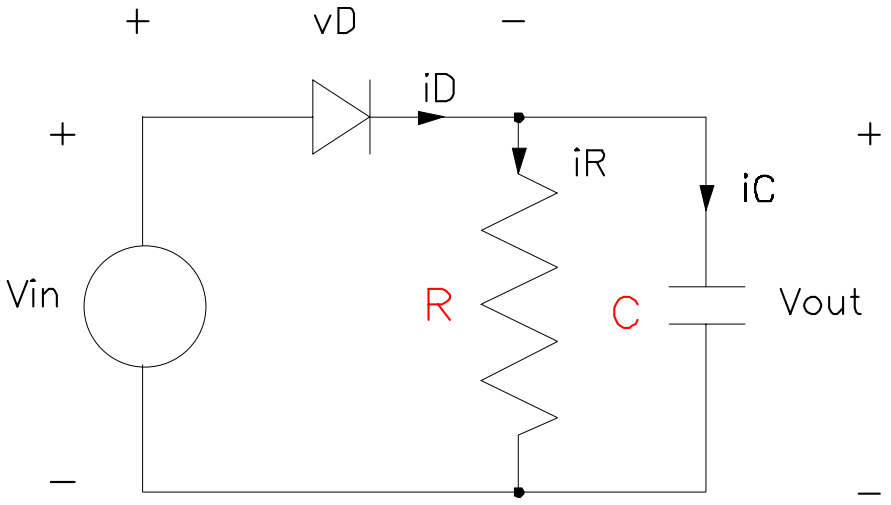
$$i_D = f(v_D)$$

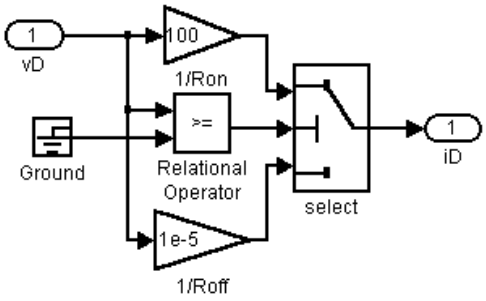
$$v_D = v_{in} - v_{out}$$

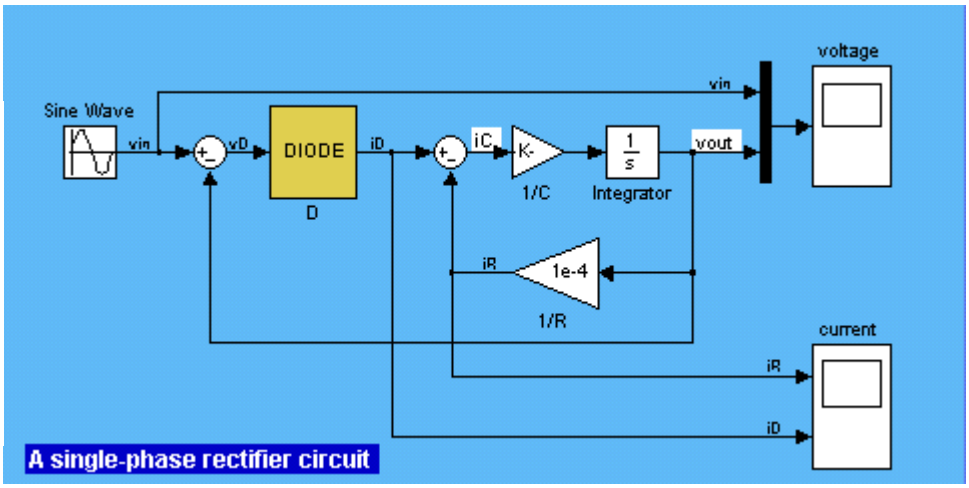
$$i_C = i_D - \frac{v_{out}}{R}$$

$$v_{out} = \frac{1}{C}\int i_C\,dt$$

The diode is modeled as a piecewise linear resistor whose conductance is large when on (vD>=0), and small when off (vD<0).







Single pulse rectifier

The circuit is represented by a system model which implements the equations:

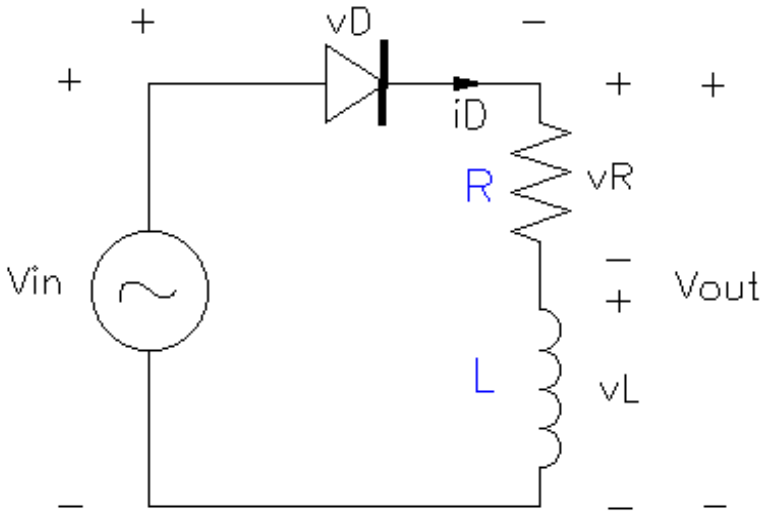
$$v_D = f(i_D)$$

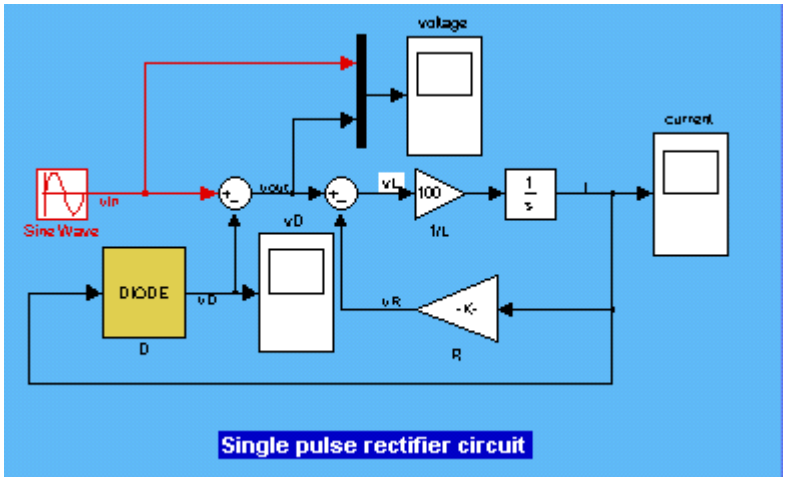
$$v_L = v_{in} - v_D - v_R$$

$$v_R = Ri$$

$$i = \frac{1}{L}\int v_L dt$$

The diode is modeled as a piecewise linear resistor whose resistance is small when the diode is on (i>=0), and large when off (i<0).





Switched RLC circuit

The circuit is closed for a specified time duration "to" when it suddenly opens at the first current zero crossing detected by a logic block defined as subsystem "SWITCH".