The Difference Between Both the circuits are explained below in the tabulated form.

BASIS	MAGNETIC CIRCUIT	ELECTRIC CIRCUIT
Definition	The closed path for magnetic flux is called magnetic circuit.	The closed path for electric current is called electric circuit.
Relation Between Flux and Current	Flux = mmf/reluctance	Current = emf/ resistance
Units	Flux φ is measured in weber (wb)	Current I is measured in amperes
MMF and EMF	Magnetomotive force is the driving force and is measured in Ampere turns (AT) Mmf =∫ H.dl	Electromotive force is the driving force and measured in volts (V) Emf = ∫ E.dl
Reluctance and Resistance	Reluctance opposes the flow of magnetic flux S = l/aμ and measured in (AT/wb)	Resistance opposes the flow of current R = ρ. l/a and measured in (Ώ)
Relation between Permeance and Conduction	Permeance = 1/reluctance	Conduction = 1/ resistance
Analogy	Permeability	Conductivity
Analogy	Reluctivity	Resistivity

BASIS	MAGNETIC CIRCUIT	ELECTRIC CIRCUIT
Density	Flux density B = φ/a (wb/m2)	Current density J = I/a (A/m2)
Intensity	Magnetic intensity H = NI/l	Electric density E = V/d
Drops	Mmf drop = φS	Voltage drop = IR
Flux and Electrons	In magnetic circuit molecular poles are aligned. The flux does not flow, but sets up in the magnetic circuit.	In electric circuit electric current flows in the form of electrons.
Examples	For magnetic flux, there is no perfect insulator. It can set up even in the non magnetic materials like air, rubber, glass etc.	For electric circuit there are a large number of perfect insulators like glass, air, rubber, PVC and synthetic resin which do not allow it to flow through them.
Variation of Reluctance and Resistance	The reluctance (S) of a magnetic circuit is not constant rather it varies with the value of B.	The resistance (R) of an electric circuit is almost constant as its value depends upon the value of ρ. The value of ρ and R can change slightly if the change in temperature takes place
Energy in the circuit	Once the magnetic flux sets up in a magnetic circuit, no energy is expanded. Only a small amount of energy is required at the initial stage to create flux in the circuit.	Energy is expanding continuously, as long as the current flows through the electrical circuit. This energy is dissipated in the form of heat.

BASIS	MAGNETIC CIRCUIT	ELECTRIC CIRCUIT
Applicable Laws	Khirchhoff flux and mmf law is followed	Khirchhoff voltage and current law is followed. (KVL and KCL)
Magnetic and Electric lines	Magnetic lines of flux starts from North pole and ends at South pole.	Electric lines or current starts from positive charge and ends on negative charge.