

## Reactance Diagram for the Power System

### Reactance Diagram

With some more additional and simplifying assumptions, the impedance diagram can be simplified further to obtain the corresponding reactance diagram. The following are the assumptions made.

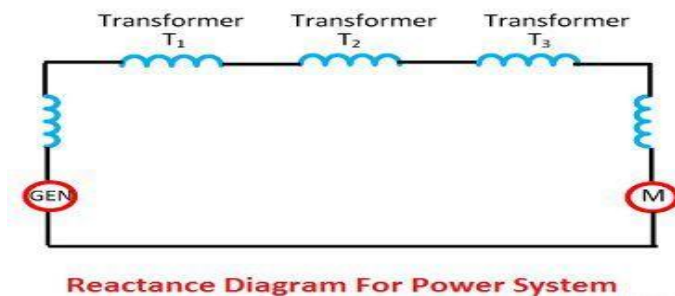
(i). The resistance is often omitted during the fault analysis. This causes a very error. since, resistances are negligible.

(ii). Loads are Omitted

(iii). Transmission line capacitances are ineffective &

(iv). Magnetizing currents of transformers are neglected.

The reactance diagram gives an accurate result for many power system studies, such as short-circuit studies, etc. The winding resistance, including the line resistance, is quite small in comparison with leakage reactance and shunt path which includes line charging and transformer magnetising circuit provide very high parallel impedance with fault.



It is considered that if the resistance is less than one-third of the reactance, and resistance is ignored, then the error introduced will be not more than 5 %. If the resistance and reactance ignored errors up to 12% may be introduced. The errors mean their calculation gives a higher value than the actual value.