

EXP. No (4)

Performance of Medium Transmission Line (T-Method)

Introduction:

The charging current in overhead lines more than 70 km cannot be neglected up to 200 km, it is possible to represent the line by the nominal for (π -method). In nominal T-method, the shunt admittance is considered to be lumped at the middle of the line while series impedance is split in two equal parts.

Object of Experiment:

The aim of experiment is to:

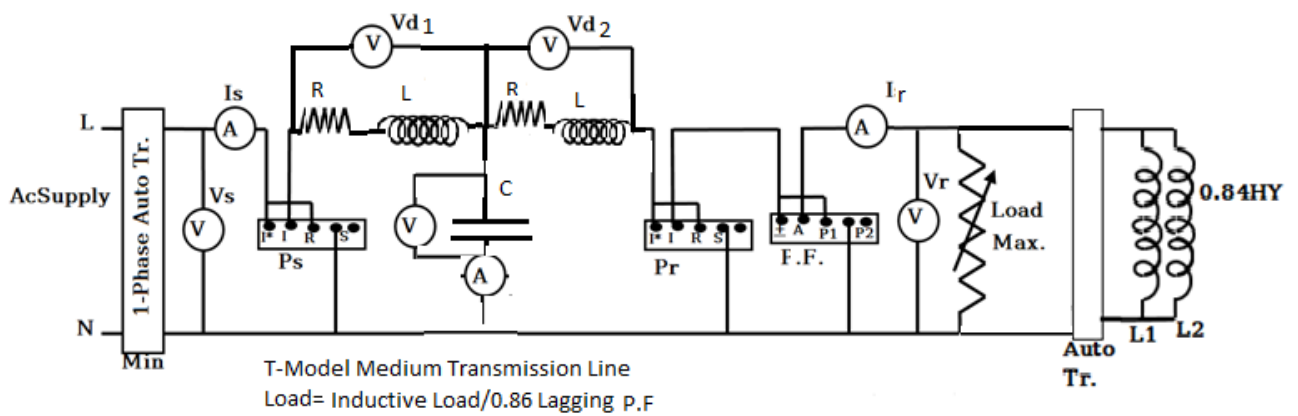
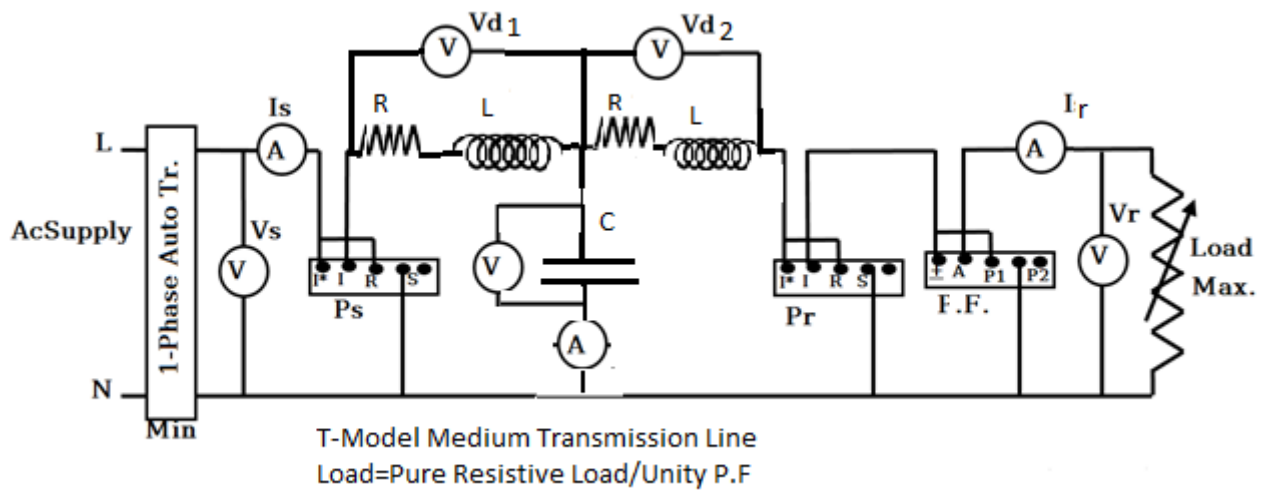
- 1- To determine parameters of (R, XL, Y).
- 2- To study characteristics of transmission line ($\eta\%$, $\%E$).
- 3- To plot the vector diagram.

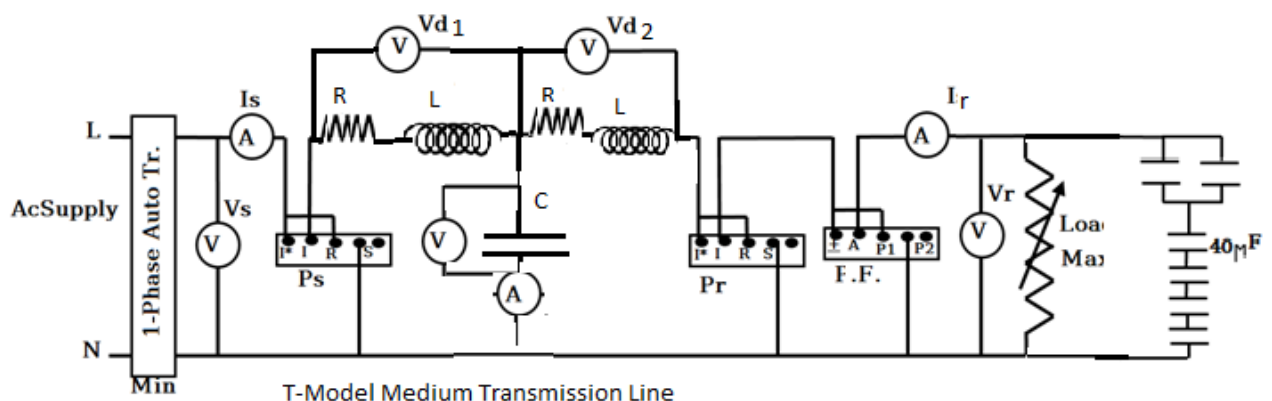
Apparatus:

3 ammeters, 4 voltmeters, 2 wattmeter, variable ac supply, suitable variable load.

Procedure:

- 1- Connect the circuit diagram as shown in fig.
- 2- Set the voltage source to its lowest value and change it gradually to its nominal value.
- 3- Record the reading of the instruments.
- 4- Repeat step 3 several types with different type of load.
- 5- Plot the vector diagram.
- 6- Calculate the efficiency ($\eta\%$) and voltage regulation ($\%E$) for each set of records and then draw them against (I_r).





T-Model Medium Transmission Line
Load=Capacitive Load/0.86LeadingP.F