

Electrical Power Transmission Line Trainer (LT-304)



Technical Data

- AC (3 ϕ 4 Wire), 440V, 50 Hz
- Output Terminal Capacity:
Resistive Load 3000W, 440V
Load, Inductive Load
4000VA, 440V Load
- Incoming AC (3 ϕ 4 Wire),
440V with Circuit Breaker
(4P)- 1 Nos
- Outgoing AC (3 ϕ 4 Wire),
440V Load Connection with
Circuit Breaker (4P)- 1 Nos

Measuring Instruments

- Digital Multifunctional 3 ϕ Wattmeter including (KW, KVA, KVAR, VL-N, VL-L, IP, IL)
- Digital AC Voltmeter
- Digital AC Ammeter
- Digital Power Factor Meter

Transmission Line Parameter

Line 1 Modifiable parameter: Section (capacity in A)
Model of line used: PI Simulated Un: 120 kV,
operating Un 400V, Simulated Pn: 10 -15 - 20 MVA
Operating In: 1 A Equivalent distributed R: 18 - 25 - 35 Ω
Distributed inductance and capacitance
equivalent to: 72 mH, 0.2 μ F, Breakers of line start
Line 2 Modifiable parameter: length (km)
Model of line used: PI
Simulated Un: 120 kV, operating Un 400V
Simulated Pn: 20 MVA, Operating In: 1 A
Equivalent distributed R: 8.9 - 18 - 35 Ω
Distributed inductance equivalent to: 144 - 72 - 36 mH
Distributed capacitance equivalent to 0.1 - 0.2 - 0.4 μ F

Experiment List

- a) Measurement the Voltage Regulation of Short Transmission Line
- b) Measurement the Efficiency of Short Transmission Line
- c) Measurement the Voltage Regulation of Medium Transmission Line (End Condenser Method)
- d) Measurement the Efficiency of Medium Transmission Line (End Condenser Method)
- e) Measurement the Voltage Regulation of Medium Transmission Line (Nominal pie Method)
- f) Measurement the Efficiency of Medium Transmission Line (Nominal-pie-Method)
- g) Measurement the Voltage Regulation of Medium Transmission Line (Nominal-T-Method)
- h) Measurement the Efficiency of Medium Transmission Line (Nominal-T-Method)
- i) Power Factor Improvement of an Electrical Load (Inductive)