

Names _____

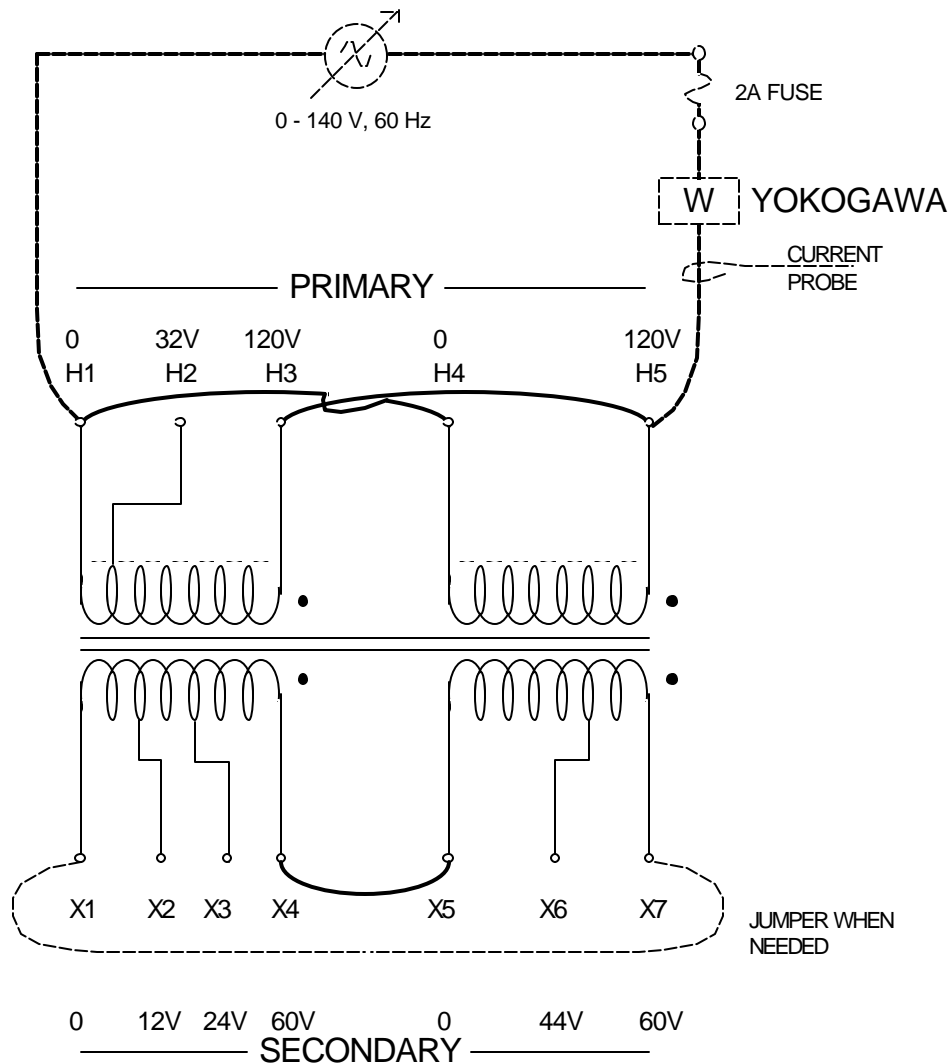
Objective: To experimentally determine the approximate equivalent transformer model.

Deliverables

- 1) I, V and P from short-circuit test.
- 2) I, V and P from open circuit test.
- 3) Detailed analysis required to determine the approximate transformer model parameters.
- 4) The approximate transformer model.

Procedure

1. Check that the circuit is connected as shown below.



2. Short-circuit test:

- i) adjust power supply to zero volts.
- ii) short-circuit secondary by connecting terminal X1 to X7 with a jumper.
- iii) **slowly** increase the primary voltage until rated current flows (1A).
- iv) measure and record V_{sc} , I_{sc} , and P_{sc} .
- v) adjust power supply to zero volts.
- vi) remove jumper between terminals X1 and X7.

short-circuit test data	V_{sc}	I_{sc}	P_{sc}

3. Open-circuit test

- i) confirm that terminals X1 and X7 are open-circuited (no connection).
- ii) adjust the voltage to rated voltage (120V).
- iii) measure and record V_{oc} , I_{oc} , and P_{oc} .
- iv) adjust power supply to zero volts.0

open-circuit test data	V_{oc}	I_{oc}	P_{oc}

- 4. Attach a neat, detailed analysis showing calculations and the associated phasor circuit. Throughout the procedure, provide brief explanations and discuss any approximations that are made.
- 5. Attach the approximate transformer model determined in step 4.

Steps 4 and 5 may be included on one sheet as long as the work is neatly done. Sloppy work will be downgraded.