EXPERIMENT NO

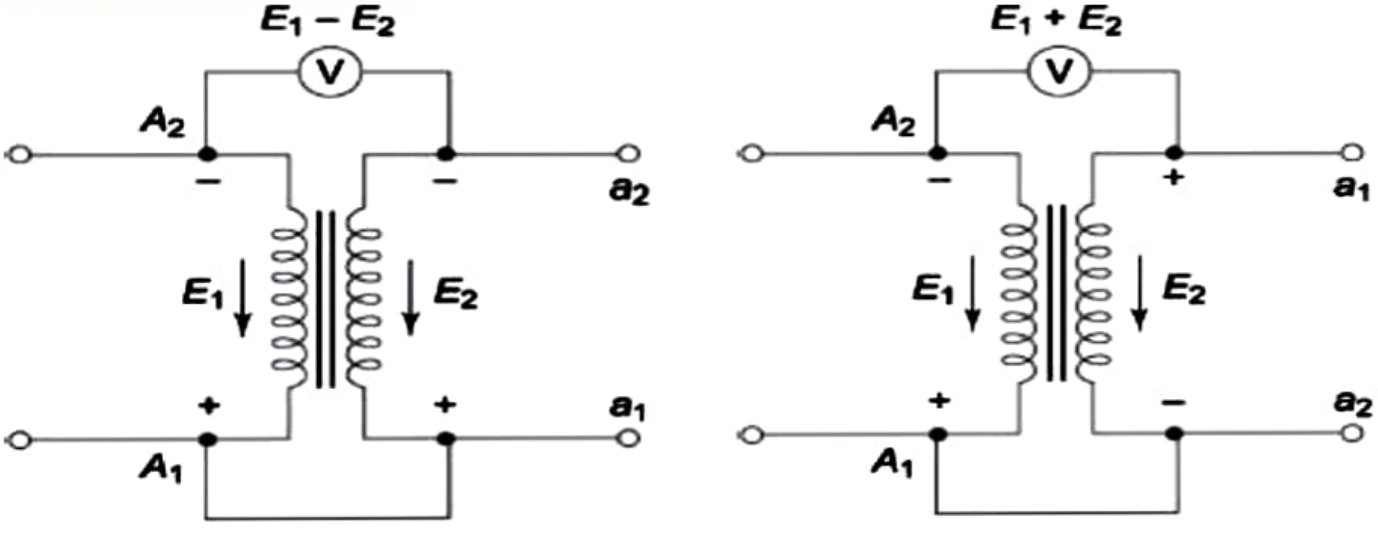
AIM: To find the polarity and turns ratio of a single phase transformer.

APPARATUS: One transformer, two voltmeters, one autotransformer

THEORY:

It is essential to know the relative polarity at any instant of primary and secondary terminals for making correct connections. When the two transformers are to be connected in parallel to share the load on the system. The marking is correct if voltage E3 (E1+E2 OR E1-E2) is less than E1,such a polarity is termed as subtractive polarity. The standard practice is to have subtractive polarity because it reduces the voltage stress between adjacent loads. In case E3 > E1 the emf induced in primary and secondary have additive relation and transformer is said to have additive polarity.

CIRCUITDIAGRAM:



PROCEDURE:

Polaritytest:

- connect the circuit as shown in thediagram.
- Switch on the single phase a.c.supply.
- Record the voltages E1, E2 and E3 .In case E3<E1 polarity issubtractive.
- Repeat the step 3 after connecting terminals A1 and a2 .In case E3> E1polarity is additive.
- Switch off the a.c.supply

Turn RatioTest:

- Connect the circuit as shown in thediagram.
- Switch on the a.c.supply.
- Record voltage E1 across primary and E2 across various tapping's ofsecondary.
- If E1>E2 then transformer is stepdown.
- If E2> E1 then transformer is stepup.
- Switch off a.c.supply

OBSERVATIONTABLE:

SUBTRACTIVE-POLARITY:

S.NO.	E1	E2	E3=E2-E1

ADDITIVE-POLARITY:

S.NO.	E1	E2	E3=E1+E2

RESULT:

If E2>E1 then transformer is step up otherwise stepdown.