

ELECTRICAL MEASUREMENT & MEASURING INSTRUMENTS

UNIT 2

Instrument Transformers

Phasor Diagram

The secondary current I_2 lags behind the voltage by an angle of γ .

The angle α is the angle produced by burden connected on the secondary side.

The secondary current I_2 is now transferred to the primary by reversing I_2 and multiplied by K where K is the turn ratio.

Potential Transformer (P.T.)

These are used to measure alternating high voltage by means of low range voltmeters or for energising the potential coils of wattmeter and energy meters. These types of transformers are also used in relays and protection schemes.

The high voltage which is to be measured is fed to the primary of PT, which is stepped down and is measured by a low range voltmeter on the secondary. The turns of primary side are more than secondary side. The turn ratio of transformer is so designed which keep secondary voltage 110 V when full rated voltage is applied to the primary side.

The principle of operation of potential transformer is same as that of power transformer.

Potential Transformer (P.T.)

