



(e) Voltage Class :

This specifies the rated system voltage on which the Current Transformers is to operate. The system earthing condition, i.e whether the neutral of the system is solidly grounded or otherwise also needs examination as it influences the power frequency voltage test level for the Current Transformers.

Twin and Triple core Current Transformers :
It is usually necessary to have separate current transformers for metering and protective duty. These Current Transformers can be combined into one Current Transformer having two separate secondary windings, one for metering and the other for protection and a common primary winding thereby resulting considerable economy. This may further be extended to include three core Current Transformers.

Current Transformers for Electrically Exposed Installations :

The current transformers described are normally suitable for indoor use. The Impulse voltage withstand test has however been carried out on some of the designs. Which is the specified test level for Current Transformers by I.S.S., B.S.S.

Special Current Transformers.

We shall be pleased to manufacture special Current Transformer to suit the exact individual requirements. In such case the following information may please be furnished to us :-

- (a) Ratio of primary to secondary current.
- (b) Rated Burden.
Class of Accuracy
- (c) Accuracy Limit factor
- (d) Frequency.
- (e) Voltage class.
- (f) Limiting Dimensions
- (g) Any special conditions and requirements.

VOLTAGE TRANSFORMERS

General :

A voltage transformer belongs to the shunt connected class of electrical apparatus and is used so that high systems voltages can be conveniently measured by stepping them down to a value suitable for the measuring instruments. For the Voltage Transformer to be useful in this capacity, it is important that the transformation ratio is accurately known and also that the secondary voltage of the Voltage Transformer is in phase with the voltage across its primary. The various standard specifications list the limits of permissible errors (Ratio Error and Phase Displacement) for the various accuracy classes of Voltage Transformers.

Voltage transformers for dual purpose, metering and protection, are also commonly used. An additional secondary winding is provided which is connected in open delta so that, in the event of an earth fault on any of the phases,

appropriate voltage is developed across the open delta terminals which is then use to actuate a tripping mechanism. Various classes of accuracy for the protective duty, are also included in the standard specifications.

Single phase Voltage Transformers. We have included Voltage Transformers with only one secondary winding suitable for metering and additional winding (usually termed as the tertiary winding) can however be included; although in such cases, an alternation in the value of the rated burden on the metering winding may be necessary.

SELECTION OF A VOLTAGE TRANSFORMER :

The following points need to be considered while selecting a Voltage Transformers.

(a) Ratio :

This is the ratio of the rated primary voltage to the rated secondary voltage. The rated primary voltage is selected to be suitable for the system, and is different depending upon whether the Voltage Transformer is connected across lines or between line and earth. Considering the particular case of 11 kv. whereas for Voltage Transformer connected across the lines the rated primary voltage will be $11 \text{ kv} / \sqrt{3}$. The secondary Voltage also changes depending upon the mode of connection and is either 'Vs' or $Vs/\sqrt{3}$. We have standardized on a value of 110 Volts for VS Although Voltage Transformers with Vs different from 110 Volts are also manufactured.

(b) Rated Burden :

This in fact, is the 'load' expressed in VA, connected across the secondary winding of a Voltage Transformer if a number of meters are connected across the Voltage Transformer the total burden on the Voltage Transformer is merely an addition of the load imposed by each meter. The burden values of the meters are readily available from their manufacturers and it is suggested that an estimate of the total burden be made prior to the placement or orders.

(c) Class of Accuracy :

Depending upon the accuracy of voltage transformation Voltage Transformers are classified into various classes by the standard specification. The choice of an accuracy class of the Voltage Transformers naturally depend upon the duty it is called upon to perform. We as manufacturers of the Voltage Transformers have certain limitations as to the class of accuracy which can be obtained for certain rated burden.

Impulse Voltage Withstand Test :

The Voltage Transformers listed here are normally suitable for electrically non-exposed installations and impulse voltage withstand test is not applicable. The impulse test has, however been successfully carried out on all designs as per I.S Specification.



33 kV VT Both Pole



33 kV VT Single Pole



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