



## Basic Concepts Related to Instrument Transformers

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## Basic Concepts Related to Instrument Transformers

### What is instrument transformer

Instrument transformers are the special purpose transformers that are used in power systems for taking measurements.

Two types of instrument transformers are there

1. Current transformer
2. Potential transformer



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### What is Potential Transformer

A potential transformer is a specially wound step down transformer with a high voltage primary and a low-voltage secondary. The input voltages at primary are stepped down to secondary voltages

Usually PTs are designed to output 120 V at full rated conditions



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### What is Current Transformer

As name implies a current transformer samples the current in a line and reduces it to a safe level that is measurable for instruments..

The secondary of CTs is usually rated to provide 5 A



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### What is Burden

The load which is placed on an instrument transformers secondary circuit by metering or any other equipment





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### What is CCVT

Potential transformers usually have a secondary winding rating of 120 V. However when turns ratio becomes very large, coupling capacitor voltage transformers or CCVT is employed



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### How polarity of a CT is shown

The polarity of a Current Transformer is shown by marking the primary terminals H1 and H2 and by marking the secondary terminals X1 and X2



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### What is rating factor or RF of CT

The rating factor or RF of a CT indicates the maximum continuous current that can flow through the primary of CT while keeping the thermal capability of the CT windings in limit





## Basic Concepts Related to Instrument Transformers

### What is usual rating factor of CT

The usual rating factor of CT ranges from 1.0 to 4.0.  
e.g A CT having rated secondary current of 5 A can produce up to 20 A of secondary current



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### What is burden rating of CT

The burden rating of CT is an illustration of how much load the CT can serve without deviating from its mentioned accuracy



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