

**DESIGN  
OF  
SINGLE PHASE  
TRANSFORMER  
OF  
VARIOUS SIZES  
USING MATLAB**

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# **DESIGN OF SINGLE PHASE TRANSFORMER OF VARIOUS SIZES USING MATLAB**

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## **ABSTRACT**

A transformer is a static electro-magnetic device consisting of two or more windings which link with a common magnetic field. It transforms electrical energy from one or more primary A.C. circuits to one or more secondary A.C. circuits with changed values of voltage and current. The main reason for extensive use of A.C. power systems is on account of transformers. This is because transformers allow the A.C. power to be generated, transmitted and utilized at the most economical voltages required for different applications.

In this project a computer program has been developed to design single phase transformer of various sizes using MATLAB. The inputs to the program are the chosen specifications i.e., power rating and  $h_v$ ,  $l_v$  voltages of the transformer and the output of the program is the dimensions of core and winding details.

The fabrication of a single-phase transformer of very small capacity (100VA) was then carried out in a local workshop by procuring the various parts of the transformer as per the output of the program. Standard tests were later conducted on the unit in the control system laboratory and a demonstration kit for this transformer was designed.



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