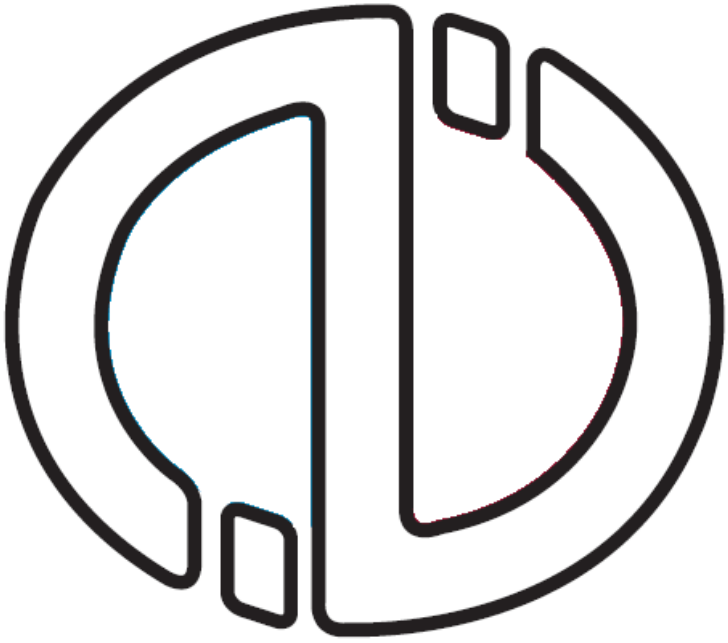

ANADOLU UNIVERSITY

DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING

EEM 311 Principles of Energy Conversion Laboratory

Fall 2016-2017

Experiment 7 : Three Phase Transformer Open and Short Circuit Tests; Derivation of Equivalent Circuit

Purpose :

To calculate equivalent circuit elements using open and short-circuit test data.

Background and Theoretical Discussion :

As you were instructed during the lectures on transformers, using open and short-circuit test data, one can easily calculate the elements of equivalent circuit for three phase transformers. The same experimental work was completed for a single-phase transformer.

Equipment List :

1	**DL 1013M2**	Power Supply
1	**DL 1031**	Digital Power Measuring Unit
1	**DL 1080**	Three Phase Transformer
1	**Wavetek**	Hand Multimeter

Procedure :

In the laboratory, you will be provided with a three-phase transformer that has primary and secondary phase windings rated 380 V and 140 V respectively. Transformer can deliver 1000 VA of rated power.

1. Make all necessary connections, so that the test transformer is 380/242.5 V, delta wye as depicted in Figure 1.

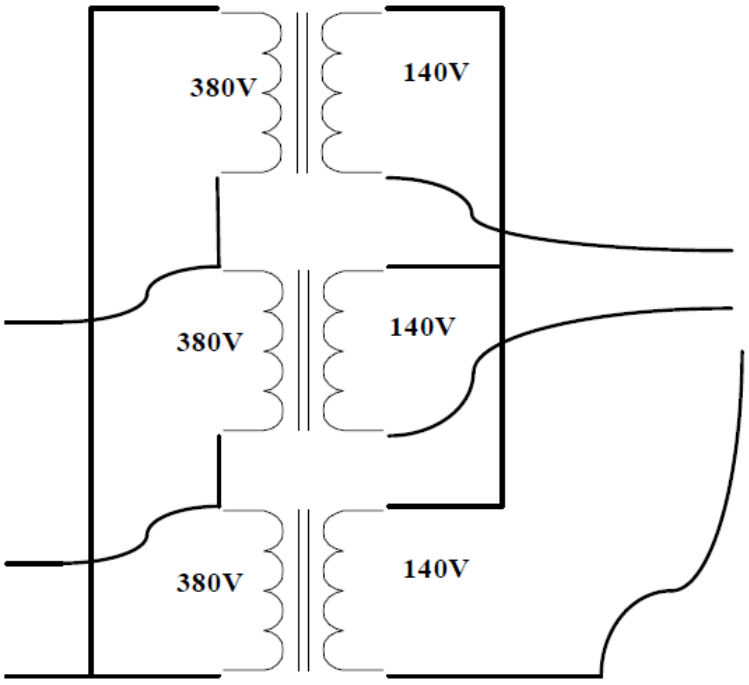

Figure 1.

2. You are to perform open-circuit test from the l.v. winding. Connect all necessary instruments to measure open-circuit voltage, current, and power.

3. Perform the short circuit test from the H.V. winding. Calculate the rated H.V. side current and verify your result with your T.A. since you will increase the adjustable voltage until the rated current is read on the instrumentation. Measure and record the values for short-circuit voltage, current and power.

Results :

V oc	
I oc	
P oc	

V sc	
I sc	
P sc	