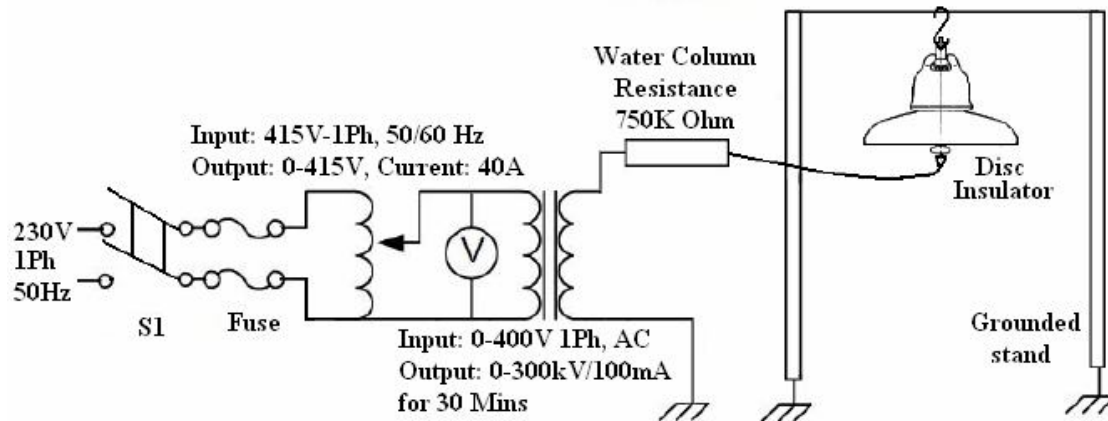


## Experiment no. 7 Flashover Experiment

### Objective

Flashover study of Disc Insulators and determination of string efficiency. Under  
a) dry condition and b) wet condition

### Circuit diagram



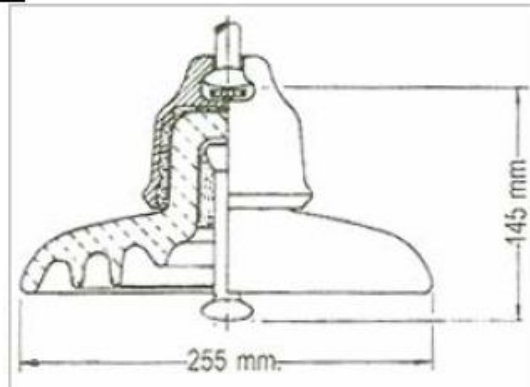
### Procedure

1. Place the test frame (or stand) at suitable position.
2. Hang the disc with frame hanger as shown in circuit.
3. Clamping the GI ware clip at bottom of disc properly.
4. Complete the connection from HV transformer to ball pin of the disc insulator and earthed the frame properly with earth pit.
5. First, test the insulator at dry conditions (including correction factors) but at wet condition water arrangement should be checked as it works fine.
6. Close the Circuit Breaker S1.
7. Slowly raise the voltage till faint hissing sound is audible. This is the beginning of corona.
8. Slowly raise the voltage till such time that flashover at dry state is occurred. Reduce the voltage completely and open the CB.
9. Repeat the step 6 to 8 by increase the number of disc insulator.
10. Similarly, for wet test, first start the water shower at disc insulator(s) through nozzles. Then repeat the step from 6 to 9 and observed the values.

### Record of Flashover

Sl. No.	No. of Disc	Atmospheric condition	Voltage at Hissing sound (kV)		Flashover Voltage (kV)		Remarks
			Dry	Wet	Dry	Wet	
1							
2							
3							
4							
5							
6							

## Disc specifications



### **Product Specification**

**11 KV Disc Insulators (B&S type or T & C type)**

### **Standard Particulars**

Visible Discharge Voltage		9 kV
Porcelain Diameter		255 mm
Spacing		145 mm
Greepage Distance (Min.)		320 mm
Electro-mechanical Strength		70 KN
Flashover Voltage @ Power Frequency	Dry	65 kV
	Wet	45 kV
Impulse Flashover Voltage	+ ve	110 kV <sub>p</sub>
	- ve	120 kV <sub>p</sub>
Withstand Voltage @ Power Frequency 1 min.	Dry	50 kV
	Wet	35 kV
Impulse Withstand Voltage		
	+ve	75 kV <sub>p</sub>
	-ve	80 kV <sub>p</sub>
Puncture Voltage		105 kV
Net Weight (approx.)		5.0 Kgs.

## Discussion

- 1) How does rating of a disc insulator define?
- 2) Will greasing help to increase the flashover voltage during wet condition, if yes, how?
- 3) Why electro-mechanical strength is important rather than mechanical strength for a disc insulator?