

SPEED CONTROL OF DC SHUNT MOTOR by

A) Armature Voltage Control Method.

B) Field Current Control Method

Exp no:4

Date

Aim: To obtain speed control of DC shunt motor by

- a. Varying armature voltage with field current constant.
- b. Varying field current with armature voltage constant

Apparatus required:

S.no	Name of the Apparatus	Range	Type	Quantity
1.	Ammeter	(0-20)A	MC	1
2.	Volt meter	(0-300)V	MC	1
3.	Rheostats	1000 Ω /1.2A	Wire wound	1
		50 Ω /3.5A	Wire wound	1
4.	Tachometer	(0-3000)rpm	Digital	1
5.	Connecting wires	2.5sq.mm	Copper /Aluminum	Few

An Important Precaution:

1. Field Rheostat should be kept in the minimum resistance position at the time of starting and stopping the motor.
2. Armature Rheostat should be kept in the maximum resistance position at the time of starting and stopping the motor.

Procedure:

1. Connections are made as per the circuit diagram.
2. After checking the maximum position of armature rheostat and minimum position of field rheostat, DPST switch is closed

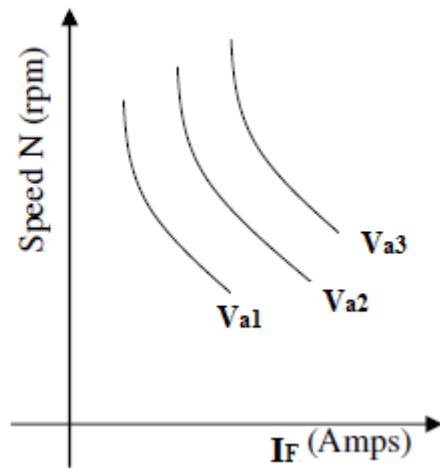
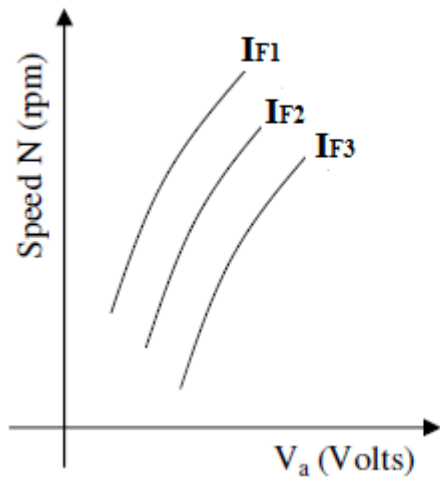
(i) Armature Control:

1. Field current is fixed to various values and for each fixed value, by varying the armature rheostat, speed is noted for various voltages across the armature.

(ii)Field Control:

1. Armature voltage is fixed to various values and for each fixed value, by adjusting the field rheostat, speed is noted for various field currents.
2. Bringing field rheostat to minimum position and armature rheostat to maximum position DPST switch is opened.

Model Graphs:



Result: