

Improving V/f: *Results*

Lab 3: ECE432 – Variable Speed Drives

Lab Report

Name	Student ID	CCID	Lab Section

The following is what you are expected to hand-in one week (by 4:00pm) after completion of the lab. You only have to hand-in one copy per group. There is an assignment box in the ETLC atrium marked ECE432 lab. Please, staple everything together in this order:

- Use this page as your cover sheet. Make sure your names, student ID's, CCID's and lab section are visible in the table above. You need to obtain the signatures below after completing the laboratory exercises.
- Include the results sheet that you made all of your measurements on.
- The 4 required graphs.
- The answers to the post lab questions.

Lab 3 Results Sign-off

Instructor or TA signature_____

Clean-up

Instructor or TA signature_____

AC Machine – Run Boost								
Setting	Powerflex – Monitor File						Pocket-tach	
Command Freq	Output Current		Output Voltage		Power Factor		Speed	
(Hz)	Before	After	Before	After	Before	After	Before	After
0								
1								
2								
4								
8								
15								

AC Machine – Slip Compensation											
Setting		Powerflex – Monitor File						Pocket-tach		Fluke 43B – Scope	
Approx. Load	Command Freq	Output Freq		Output Voltage		Slip RPM Meter		Speed		I_{ARM}^{DC}	
	(Hz)	Before	After	Before	After	Before	After	Before	After	Before	After
Full	60										
1/2	60										
No	60										
Full	45										
1/2	45										
No	45										
Full	30										
1/2	30										
No	30										

AC Machine – Autotune		
Powerflex – Parameters	Before Autotune	After Rotate Autotune
IR Voltage Drop – 62		
Flux Current Ref – 63		
Slip RPM @ FLA – 121		

AC Machine – Sensorless Vector												
Setting		Powerflex – Monitor File								Pocket-tach	Fluke 43B – Scope	
Approx. Load	Command Freq	Output Freq	Output Current	Torque Current	Flux Current	Output Voltage	Output Power	Output Powr Fctr	Slip RPM Meter	Speed	V_{ARM}^{DC}	I_{ARM}^{DC}
	(Hz)	(Hz)	(A)	(A)	(A)	(V)	(kW)	(-)	(rpm)	(rpm)	(V_{DC})	(A_{DC})
No	70											
Full	60											
1/2	60											
No	60											
Full	45											
1/2	45											
No	45											
Full	30											
1/2	30											
No	30											
Full	15											
1/2	15											
No	15											
Full	10											
1/2	10											
No	10											
Full	5											
1/2	5											
No	5											
No	0											