

Equipment Familiarization: *Results*

Lab 1: 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
- The answers to the post lab questions.

Lab 1 Results Sign-off

Instructor or TA signature_____

Clean-up

Instructor or TA signature_____

DC Drive Measurements - PLX15

Resistance - DC Machine			
Measurement	Units	Fluke 43B	
		Cold	Hot
R_{ARM}	(Ω)		

Input - DC Drive				
	Measurement	Units	Fluke 43B	
			no load	loading
Volts/Amps/Hertz	$V_{\text{YZ_IN}}$	(V)		
	$I_{\text{A_IN}}$	(A)		
	CF_{IN}	(-)		
	f_{S}	(Hz)		
Power	P_{IN} (3ph)	(kW)		
	S_{IN} (3ph)	(kVA)		
	Q_{IN} (3ph)	(kVAR)		
	DPF_{IN} (3ph)	(-)		
Harmonics	$V_{\text{THD}\%f}$	(%)		
	$I_{\text{THD}\%f}$	(%)		
	I_1	(A)		
	I_5	(A)		
	I_7	(A)		
	I_{11}	(A)		
	I_{13}	(A)		

Output - DC Drive				
	Measurement	Units	Fluke 43B	
			no load	loading
Scope	$V_{\text{OUT(RMS)}}$	(V)		
	$V_{\text{OUT(DC)}}$	(V)		
	$V_{\text{OUT(AC)}}$	(V)		
	$I_{\text{OUT(RMS)}}$	(A)		
	$I_{\text{OUT(DC)}}$	(A)		
	$I_{\text{OUT(AC)}}$	(A)		
	f_{Ripple}	(Hz)		
Power	$P_{\text{OUT(DC)}}$	(kW)		
Pocket Tacho				
Tach	Speed	(rpm)		
DC Drive Parameters/Monitor				
PLX15	ARM VOLTS MON	(V)		
	MOTOR RPM MON	(rpm)		
	ARM CUR % MON	(%)		
	ARM CUR AMPS MON	(A)		
	DC KILOWATTS MON	(kW)		

AC Drive Measurements - Powerflex 70

Resistance - Induction Machine				
Measurement	Units	Fluke 43B		
		Cold	Hot	
R_{XY}	(Ω)			
R_{YZ}	(Ω)			
R_{ZX}	(Ω)			

Input - AC Drive				
Measurement	Units	Fluke 43B		
		no load	loaded	
V_{YZ_IN}	(V)			Volts/Amps/Hertz
I_{A_IN}	(A)			
CF_{IN}	(-)			
f_s	(Hz)			
P_{IN} (3ph)	(kW)			Power
S_{IN} (3ph)	(kVA)			
Q_{IN} (3ph)	(kVAR)			
DPF_{IN} (3ph)	(-)			
$V_{THD\%f}$	(%)			Harmonics
$I_{THD\%f}$	(%)			
I_1	(A)			
I_5	(A)			
I_7	(A)			
I_{11}	(A)			
I_{13}	(A)			

Output - AC Drive				
Measurement		Units	Fluke 43B	
			no load	loaded
Volts/Amps/Hertz	V _{YZ_OUT}	(V)		
	I _{A_OUT}	(A)		
	CF _{OUT}	(-)		
	f _{OUT}	(Hz)		
Power	P _{OUT} (3ph)	(kW)		
	S _{OUT} (3ph)	(kVA)		
	Q _{OUT} (3ph)	(kVAR)		
	DPF _{OUT} (3ph)	(-)		
Harm.	V _{THD%f}	(%)		
	I _{THD%f}	(%)		
			Pocket Tacho	
Tach	Speed	(rpm)		
			AC Drive Parameters/Monitor	
Powerflex 70	Output Freq	(Hz)		
	Commanded Freq	(Hz)		
	Output Current	(A)		
	Output Voltage	(V)		
	Output Power	(kW)		
	Output Powr Fctr	(-)		