



UNC CHARLOTTE

Department of Engineering Technology

LABORATORY SAFETY ANALYSIS

OPERATING A DIGITAL/ANALOG TRAINER


Location: All Smith Electrical/Computer Engineering Technology Labs

Required Training: A Digital/Analog Trainer is designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of the equipment, do not use until proper training and knowledge have been obtained.

Required Personal

Protective Equipment (PPE): Safety glasses, closed toed shoes.

Reference Materials: Elenco Electronics XK-550 safety rules and operating instructions

PHOTOS	TASK	HAZARDS	CONTROLS
	Wear clear safety glasses with side shields.	Flying debris	<ul style="list-style-type: none"> Students are required to provide their own safety glasses. See laboratory instructor or laboratory manager if you do not have safety glasses before proceeding to use equipment.
	Inspect safety glasses for cracks, scratches or other damage. Ensure the ANSI standard Z87.1 is stamped into the side of glasses.	Flying debris	<ul style="list-style-type: none"> If defects are found report this to your lab instructor before using.
	Put on PPE	Flying debris	<ul style="list-style-type: none"> Always wear safety glasses.
	Inspect work area.	Slips, trips & falls.	<ul style="list-style-type: none"> Keep the work area free from scraps, dust, oil and grease.
	Preparing to operate a digital/analog trainer	Shock Hazard/ Damage to the digital/analog trainer.	<ul style="list-style-type: none"> Read operating instructions thoroughly and completely before operating the Digital/Analog Trainer. Note all cautions very carefully. Always inspect your digital/analog trainer power cord and accessories for any signs of damage or abnormalities before every use. If the electrical cord is damaged or worn the electrical cord should be unplugged and tagged "Out of Service-Do Not Use". This should be reported to your

			laboratory manager immediately. <ul style="list-style-type: none"> Electrical cord replacement should only be conducted by a factory authorized technician.
	Ensure the electrical cord is connected to the outlet.	Shock Hazard/ Damage to the Function Generator	<ul style="list-style-type: none"> Caution: Always remember to disconnect the electrical power cord when operation is complete or when you leave the work station for an extended period of time.
	Operating a digital/analog trainer	Injury/ Damage to the Digital/Analog Trainer	<ul style="list-style-type: none"> Plug the trainer into a 120VAC outlet and switch to the "ON" position (the power switch should light). With a digital voltmeter, measure the voltage outputs at the power blocks. The +12V should measure between 11.4 and 12.6 volts. The 5V supply should read between 4.75 and 5.25 volts. The -12V supply should read between -11.4 and 12.6 volts DO NOT SHORT THE 15VAC OUTPUT TO GROUND
	Maintenance	Shock Hazard/ Damage to the Function Generator.	<ul style="list-style-type: none"> Keep the digital/analog trainer dry and dust free. If it gets wet, wipe it dry immediately. Liquids can contain minerals that can corrode electronic circuits. Use and store the digital/analog trainer only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, and distort or melt plastic parts. Handle the equipment gently and carefully. Dropping it can damage the circuit boards and cause the function generator to work improperly.
	Clean work area and return all PPE to a clean storage area.	Injury	<ul style="list-style-type: none"> Ensure adequate housekeeping measures to prevent accidents.

For more information about this LSA, contact the *Department of Engineering Technology* at UNC Charlotte (704) 687-2305
 Please visit our website at: <http://www.et.uncc.edu>

The development of Laboratory Safety Analyses is a very effective means of helping reduce incidents, accidents, and injuries in the workplace. It is an excellent tool to use for training purposes and can also be used to investigate "near misses" and accidents.